AEESP
25 YEARS

David W. Hendricks
E. Robert Baumann

ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS
AEEP
25 YEARS

A REPORT OF PROGRESS

HISTORY
GOALS
MEMBERSHIP
ACCOMPLISHMENTS
ASPIRATIONS
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On December 5, 1963 twenty-one members proposed, meeting in a Chicago hotel, acted on a motion and formed the organization which we now call AEEP. Continuing the meeting they selected a name, deliberated on and adopted bylaws, and elected a board. The American Association of Professors in Sanitary Engineering, AAPSE, was founded. To commemorate the 25th year of this founding of the organization, now the Association of Environmental Engineering Professors, i.e., AEEP, the Board of Directors commissioned this report to describe its history.

To develop this story of AEEP, the AEEP Archives served as the main source of information. Early correspondence, board minutes, newsletters, reports, testimonies and proceedings were reviewed to glean facts and to reveal the saga of the organization. Drafts of the manuscript were sent to many of the members of AEEP who were a part of the events described, particularly the early ones, to capture missing facts, to add embellishment, and to react to the tone and tint of the story. The picture that has emerged reveals a tumultuous beginning, colorful and forceful personalities, a record of accomplishment in fulfilling goals, and a vibrant, effective, and purposeful organization.

In developing the AEEP story, the authors have marveled at how one theme leads to another, and how they are all interwoven. The Archives has so many themes of the developing organization that the task of identifying them and writing about them could continue for many months with full effort. Thus, we have selected those themes that seem to reveal the nature of the fabric, albeit, we paint the picture of the formative years with more resolution than the recent.

We mention also that while the main purpose was to tell the AEEP story, doing so required uncovering files and documentation that could be of general interest, or useful for reference. Thus, we constructed appendices that bring selected portions of the Archives into the open for general use.

This volume then fulfills the Board charge, to pass on parts of our heritage - as revealed by the Archives.

David W. Hendricks, Archives Chair

E. Robert Baumann, Past President

September, 1989
FOREWORD

The year 1988 marked the 25th Anniversary of the founding of the Association of Environmental Engineering Professors, which we call AEEP. From only thirty three “charter” members as of October 1, 1964, AEEP grew to 421 members in 1988, which included 61 affiliate members and 13 sustaining members.

The organization had its origin at a meeting in Chicago, December 1963, when a group of 21 professors from 14 universities adopted bylaws. The name given was the American Association of Professors in Sanitary Engineering, AAPSE.

Since its birth in Chicago AEEP has made a difference in environmental engineering education. The 25th Anniversary is an appropriate time to take stock of our organization, so that we may identify our founders, record our accomplishments, note our difficulties, glean our character, and look to the future. This brief recounting records some of what has happened.

George Tchobanoglous, President
September, 1989

The Board of Directors

1986 - 1989
James E. Alleman
H. David Stensel
George Tchobanoglous

1987 - 1990
Thomas M. Keinath
Charles R. O'Melia
Walter J. Weber, Jr.

1988 - 1991
Brian A. Dempsey
William R. Knocke
Bruce E. Rittman
THE VISION
OF THE ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS FOR THE NEXT TWENTY-FIVE YEARS

Richard G. Luthy, President, 1987-88

The purpose of our organization is to promote excellence in environmental engineering education and research. Our objective in the education of an environmental engineer is to provide a strong foundation in engineering-science fundamentals. Today's young environmental practitioner will be called upon to address many complex and interdisciplinary problems. Surely, we do not yet recognize many of the problems to be faced in the future by today's graduate. The best way in which we can prepare our graduates for the future is to promote an educational process which provides the skill for life-long learning. The ability to self-educate is essential for avoidance of technological obsolescence. The AEEP should be an advocate for an educational process which emphasizes versatile problem-solving skills. Thereby, the young graduate will not become trapped in a mid-career crisis with abilities mismatched with tomorrow's problems. An example of the need to develop versatile problem-solving skills is the case of the many environmental engineers who were trained in the era of the EPA training grant programs in the early 1970's. There may have been much in their educational process that is not directly transferable to today's problems in toxic and hazardous wastes.

We may provide the "tools" for self-education by developing educational programs which are both interdisciplinary and scientifically rigorous. Traditionally, we have emphasized principles of chemistry and chemical reaction kinetics as being essential to environmental engineering for water and waste treatment, but in recent years have seen the importance of a much broader set of interdisciplinary and scientific skills. For example, understanding interfacial processes and the physics of multiple phase flow in porous media are important fundamentals in assessing some aspects of problems in groundwater contamination. In the future, toxicology and risk assessment will play increasingly important roles in environmental engineering, particularly because these disciplines are the foundation upon which much of the current regulations are based. By focusing on interdisciplinary and fundamental skills, the AEEP can help ensure that today's environmental engineer will be versatile and competent to address tomorrow's problems.

With regard to research, I would hope that the AEEP will participate in establishing directions for national policies on environmental research priorities, and on the formulation of strategies for effective environmental regulation. As a group, we engineers and scientists need to be more effective at helping to establish policies for research funding and policies for environmental control. Although many of our members serve on national advisory panels, scientific advisory boards, and the like, and while these efforts are laudable, we need to identify an appropriate role for the AEEP itself in such activities. I can speak from personal experience that the AEEP does carry a lot of clout on matters related to environmental research and education. We should build on some recent initiatives, and maintain continuity in relationships with offices which oversee research funding and environmental regulation.

With regard to membership, the AEEP needs to become somewhat broader in its constitution in order to be an effective vehicle for the betterment of environmental engineering research. Currently, we face significant challenges in many environmental issues, ranging from topics as diverse as global climate change to toxic waste minimization. In order to make substantive progress on such problems, it is necessary that we conduct our research through interdisciplinary and multi-media approaches. It is with this intent that the NSF-supported conference on Fundamental Research Directions in Environmental Engineering was organized to be broader in scope than the two previous research conferences. We invited colleagues from related fields of study to talk about physical and chemical processes in air, soil and water, including risk assessment and intermedia processes. The AEEP should continue to support this type of initiative in order to strengthen our individual research agendas through greater collaboration with researchers in allied fields.

Lastly, I would encourage the AEEP to challenge conventional wisdom and political processes which may stifle creativity and innovation. One example of this is my previous correspondence with you on the need to press for increased support of peer-reviewed, individual investigator grant programs. Another example is the prevailing belief that each Superfund site is unique with its own special problems. Today, with thousands of such sites, we are beginning to see that many of the same concerns are apparent at numerous sites. We need to realize that there are underlying commonalities to many of the difficult problems to be addressed in the future. Our research methodologies should strive to investigate the commonalities of such problems. This can be achieved by encouraging fundamental and interdisciplinary approaches to education and research. I look to the AEEP to be at the cutting edge of such endeavors.

Remarks presented at the AEEP 25th Anniversary Meeting, Dallas, October 3, 1988
ACKNOWLEDGEMENTS

Several AEEP members helped to assure the accuracy of this volume and have added first hand knowledge in many areas and are cited in the text. We appreciate the reviews of manuscript drafts by Harvey F. Ludwig, Linvil G. Rich, Richard G. Luthy, Earnest F. Gloyna, Richard Engelbrecht, Walter J. Weber, Jr., Brian Dempsey, and George Tchobanoglous. Photographs of Warren Kaufman, Earnie Pearson, and P. H. McGauhey were supplied by David Jenkins, and John E. Bates, Camp, Dresser, and McKee, Inc., provided the photograph of Thomas Camp. The photograph of Don Bloodgood and a group photo were provided by James E. Etzel, Purdue University and Robert Sylvester provided another group photograph. John Gannon donated two rare copies of the 1960 Education Conference, one his own and one from Professor C. J. Velz. Both Mac Berthouz, University of Wisconsin, and Joe Malina, University of Texas, provided photographs of Gerard Rohlich. Joe Malina wrote the draft of the tribute to the latter. In addition to the foregoing persons, we appreciate the cooperation of others who provided photographs. Photographs dated about the time of the citation were used if available.

Board members authorizing this study whose terms expired in 1988 were: Robert Baumann, Des Lawler, and Richard Luthy. The senior author requested Robert Baumann to join in authorship because of his long involvement with AAPSE/AEEP as Organizing/Charter Member, Board Member and President (1969, 1970, 1987).

Kurt Keeley, Librarian, American Water Works Association, designed the archives system and cataloged the early documents. The system was used in preparing this manuscript.
### ABBREVIATIONS

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<td>AAEE</td>
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<td>ABET</td>
<td>Accrediting Board for Engineering and Technology</td>
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<td>American Chemical Society</td>
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<td>AEEP</td>
<td>Association of Environmental Engineering Professors</td>
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<td>AIChE</td>
<td>American Institute of Chemical Engineers</td>
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<td>APHA</td>
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<td>ASEIB</td>
<td>American Sanitary Engineering Intersociety Board, Inc.</td>
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<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
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<tr>
<td>ASEE</td>
<td>American Society for Engineering Education</td>
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<tr>
<td>ASM</td>
<td>American Society for Microbiology</td>
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<tr>
<td>AWWA</td>
<td>American Water Works Association</td>
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<tr>
<td>Cal</td>
<td>University of California at Berkeley</td>
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<tr>
<td>CDC</td>
<td>Communicable Disease Center, Atlanta</td>
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<tr>
<td>ECPD</td>
<td>Engineer’s Council for Professional Development (name changed to ABET, 1980)</td>
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<tr>
<td>EED</td>
<td>Environmental Engineering Division, ASCE</td>
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<tr>
<td>EEIB</td>
<td>Environmental Engineering Intersociety Board</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>ES</td>
<td>Engineering Science</td>
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<td>FSIWA</td>
<td>Federation of Sewage and Industrial Wastes Associations (later the Water Pollution Control Federation)</td>
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<tr>
<td>FSWA</td>
<td>Federation of Sewage Works Associations</td>
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<tr>
<td>FWPCA</td>
<td>Federal Water Pollution Control Administration</td>
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<tr>
<td>FWQA</td>
<td>Federal Water Quality Administration</td>
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<tr>
<td>FY</td>
<td>Fiscal year, e.g., FY89 means fiscal year beginning a specified month in 1989, which for the federal government would be October 1, 1989</td>
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<tr>
<td>IAWPRC</td>
<td>International Association of Water Pollution Research and Control</td>
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<tr>
<td>MCWA</td>
<td>Malaria Control in War Areas (a wartime office of the PHS in Atlanta)</td>
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<tr>
<td>NIH</td>
<td>National Institutes of Health</td>
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<tr>
<td>NSF</td>
<td>National Science Foundation</td>
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<tr>
<td>PAHO</td>
<td>Pan American Health Organization</td>
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<td>PHS</td>
<td>US Public Health Service</td>
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<td>SED</td>
<td>Sanitary Engineering Division, ASCE</td>
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<tr>
<td>SERL</td>
<td>Sanitary Engineering Research Laboratory, Richmond Field Station, University of California</td>
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<tr>
<td>USANC</td>
<td>United States of America National Committee to Represent the United States to the IAWPRC</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WPCF</td>
<td>Water Pollution Control Federation</td>
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<td>AEEP Outstanding Paper Awards,</td>
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AEEP
25 YEARS

A REPORT OF PROGRESS
1. AEEP

The Association of Environmental Engineering Professors, i.e., AEEP, had its birth as an organization on December 5, 1963. Its original name was the American Association of Professors in Sanitary Engineering, with the acronym, AAPSE. The twenty five year track record, outlined in these pages, attests to the vitality of the organization. Here we see an active committee structure, the seven-year education conferences, state-of-the-art workshops, development and publication of laboratory manuals and books of various sorts, the creation of a distinguished lecture program, awards for outstanding dissertation research, newsletters for communication, and testimonies before Congress. The Association has identified needs and filled them.

The AEEP membership numbered 421 in December 1988, not many for a national organization. With “not so many” in numbers and with so many activities, the “participation index” of the membership has been high, a fact verified by the records. Always, AEEP members have been ready to work. The litany of statistics resulting has been inordinate for the size of its membership.

The significance of the AEEP activities must be judged by the contributions made to society and through the improvements to environmental engineering education. Few would disagree, however, that AEEP activities have influenced the quality of environmental engineering education, the direction of national policies, the vitality of the academic infrastructure, the state-of-the-art of environmental engineering practice, and the mores, values, and competence of our graduates in practice, and the fraternal good feelings among our peers. If we judge favorably these various influences, then it is clear that AEEP has achieved the goals of the founders.

In this brief history, we trace the origins and early years of AEEP, and then we chronicle the evolution of the organization toward maturity. Statistics are reviewed also, in both text and appendices, listing officers, committees, membership growth, workshops, publications, distinguished lecturers, awardees, and testimonies. The foldout spreadsheet, Table 1-1 Enumerated History of AEEP (AEEP In A Nutshell), is a compilation, summarizing in one place much of the statistical content of this manuscript and, at the same time, adding other categories. More important, from all of this, we should glean a feeling for the “character” of AEEP.
2. BEFORE AAPSE

How and why did AEEP come into being? The story of our origin has forceful personalities, conflict, unity of purpose, and color, at a time in our history when pollution control had entered the S-curve of its growth and was fast becoming a national issue. The founding of AAPSE was not an isolated event, but rather it was the product of the milieu of evolving graduate education, a growing federal budget for university research, and the mix of personalities.

Harvey Ludwig.

The idea of AAPSE was born not in the halls of academia, but in the visions of Harvey F. Ludwig and Gordon E. McCallum. While in the U.S. Public Health Service, Ludwig was then Assistant Chief Engineer under Mark O. Hollis, head of the USPHS pollution control program, and was advisor to Gordon E. McCallum, head of the Division of Water Supply and Pollution Control under Hollis.

Here, Harvey Ludwig saw the usefulness in advancing the state-of-the-art of practice in water supply and pollution control, and of having cooperation in research between the U.S. Public Health Service and universities. He had himself served earlier as professor of sanitary engineering at Berkeley. To facilitate such cooperation he also saw a need for an organization to consolidate the sanitary engineering academic community. His experience at the University of California, working with Wilfred Langfier as a graduate student and then with Earman Pearson and Warren Kaufman as a faculty member, gave him a perspective of the academic community and its role in water supply and pollution control research, and its importance in producing professional manpower. While in the USPHS, Ludwig was a force in policy and in molding national legislation. Following his eight year tenure in the USPHS (1943-46, 1951-56), Ludwig returned to California where he launched Engineering- Science, Inc., with offices in Arcadia and Oakland. In Southern California, Ludwig was also a part-time lecturer at the California Institute of Technology and had close association with Jack McKee. Later, the issue of AAPSE would rupture the relationship.

During all of this period, Ludwig was discussing the idea of AAPSE, which came up during almost every technical and professional meeting which Ludwig and academicians attended. A salient aspect of this period was the role of Gordon McCallum, who persistently reminded Ludwig of the need to form an organization of professors and who stimulated him to do the work to get it started (Ludwig, 1988).

Table 2-1 illustrates the phases of AAPSE’s genesis, showing the interacting roles of Harvey Ludwig - Gordon McCallum - Earman Pearson. As indicated, the idea of such an organization was discussed often during the period 1953-56, when Harvey Ludwig and Gordon McCallum were colleagues working together in the USPHS. The genesis phase was 1957-62, when Gordon McCallum was the “stimulator”. He believed in the need for the organization, but, being in the federal service, could not take action himself. He knew Harvey Ludwig was the person to initiate the “action”. Finally in 1963, Earman Pearson was the “implementor”, acting in concert with Ludwig and with the help of several principals, e.g., Kaufman, Gloyd, Rohlich, and others. The critical “support” phase followed, where Harvey Ludwig deployed his influence, connections, and energy. Also he used the standing and resources of his consulting firm, to make sure AAPSE stood and did not falter. The story of this unfolding is outlined in the pages following.

The Evolution of Graduate Education in Sanitary Engineering.

The idea of AAPSE was not separate and distinct from the evolution of graduate education in engineering and, particularly, in sanitary engineering. Most of the sanitary engineers of the 1940’s and 1950’s came from civil engineering bachelor degree programs and learned the trade on the job. In other cases many were under the wing of an undergraduate professor who guided their elective courses needed to give background in chemistry, microbiology, and other studies as may have been chosen. In the case of the
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Discussed need for organization dedicated to sanitary engineering academics |
| 1957   | 2. GENESIS | G.E. McCallum - the "stimulator"  
|        |       | H.F. Ludwig - "action"  
|        |       | E.A. Pearson - the "implementor" |
| 1963   | 3. IMPLEMENTATION | E.A. PEARSON - the "leader"  
W.J. Kaufman  
E.F. Gloya  
G.A. Rohlich |
| 1964-65| 4. SUPPORT | H.F. Ludwig  
- establishing AEEP role in national sanitary engineering academic planning  
- getting AEEP appointed one of ASEIB's sponsors  
- establishing ES/academic prize |

University of California, undergraduates chose "options". Charles Gilman Hyde and Wilfred Langelier were the mentors to many present day sanitary engineers who were under the options program at Cal. But in the late 1940's, under Harold Gotaas, a graduate program emerged, and in the 1950's it flowered under Pearson, McCaughhey, Kaufman, Orlow, Oswald, and Harvey Ludwig. Under this trend, the options program gave way in the early 1950's to a uniform undergraduate program in civil engineering. When this happened, the graduate degrees became the main path to a career in sanitary engineering. A nucleus of schools had similar evolutions in graduate degree offerings which may have preceded or lagged the one at Cal by a few years. During the 1940's a number of major universities were in this nucleus. They included: MIT (Thomas Camp, William Stanley, Clair Sawyer, Rolf Eilassen), Harvard (Gordon Maskew Fair, Harold A. Thomas, Jr., E. W. Moore, and J.C. Morris), Johns Hopkins (Abel Wolman, John Geyer), Wisconsin (Gerard A. Rohlich), Michigan (Ernest Boyce), Illinois (Harold Eaton Babbit and J. J. Doland), Purdue (Donald Bloodgood), and Cal (Charles Gilman Hyde and Wilfred Langelier followed by Harold Gotaas), VIP, IIT, Georgia Tech, University of North Carolina, and the University of Florida (A.P. Black, John Kiker). In the 1950's this nucleus began to expand to include Cal Tech, Texas, Iowa, Iowa State, the University of Washington, Washington University in St. Louis, Kansas, and Oklahoma. This new group of schools were staffed, to a large measure, by graduates of the 1940's group, who also were filling vacancies at the original nucleus of schools. The new generation represented the force for establishing new research horizons, the flowering of graduate degree programs, and new premises in the practice of sanitary engineering. The charter members of AAPSE were from this 1950's nucleus of major schools. To give some perspective, up to 1954 less than 100 doctorates had been awarded in the United States in sanitary engineering, with only 63 during the decade 1947-56 (Camp, 1960). This group and those to follow in the latter half of the 1950's were the cadre for the expansion in the 1960's.
SIDEBAR: METAMORPHOSIS IN ENGINEERING EDUCATION

Harvey Ludwig's book (Ludwig, 1985, p1-34) reveals the change in engineering education that has occurred since WWII (he graduated from Cal in 1938):

Professors Hyde and Langelier were the leading university team in sanitary engineering in the USA. The point is, in those days, to qualify for appointment to the faculty in a senior tenured grade, one must have already distinguished himself in practice. Actually, I was the last such appointment [in 1949] made according to the old rules.

The system changed radically immediately following World War II, at Berkeley and elsewhere in the USA, and engineering education has never been the same. Under the new system the usual procedure is to appoint a new doctorate graduate as assistant professor, then he works his way up. With rare exceptions he never learns to practice. How can he teach engineering effectively is beyond my ken.

In a later paragraph (p5-1), he gives a glimpse of the transition from the classical ivory tower academic life to the "big research" type of university:

In September 1949 I began work at the University, joining the sanitary engineering faculty there headed by Prof. Ben Gotaas, a newcomer appointed following World War II, and including my old professor, W. F. Langelier, and another "youngster", Earman A. Pearson.

Berkeley was an exciting arena to be working in, for many reasons. The State of California was on the verge of rapid expansion of its interests in sanitary engineering technology, and likewise the Federal Government on a national basis, but with California virtually in the lead in the Stateside action. As a result, while in September 1949 when I started, the College of Engineering functioned in the old-fashioned manner with little budget, and with each professor having little to do but teach and dabble around in research to a very modest level. Within two years our sanitary engineering group had expanded its overall role into a major R&D center including a large-scale off-camp Sanitary Engineering Research Laboratory.

The Genie Was Out.

It's not difficult to see what was on the horizon, with the establishment of this expanded research-education infrastructure. Those completing terminal masters degrees were off to government and private practice. But the doctoral group, although smaller in number, had their destiny in academia. The first influence on the academic climate, general to education as a whole, was the firing of Sputnik in October 1957. With Sputnik, all engineering faculties, even those in the smallest schools, were mandated to have doctorates. The pre-Sputnik faculties, familiar with or having first hand knowledge of practice and steeped in it's lore, gave way to a new generation of researcher-teachers. Those from this group, some of whom became practitioners too, brought science and a new practice on their own terms - perhaps disdaining the old lore. The second influence, again a general one, was the numbers of doctoral graduates. Albiet a small group, they had to have some place to go. The third influence, specific to sanitary engineering, was that pollution control was becoming a major social and political issue and a vastly enlarged scale of federal support was looming on the horizon - which wasn't lost on those in academia. With the transition from the classical academic setting to the "big research" climate, and being born to do research, the new professors were entrepreneurs as well as teachers.

These three forces - Sputnik, a wave of new doctoral graduates in sanitary engineering, and pollution as a major social issue - all coalesced to cause, beginning in the early 1960's, a major expansion of graduate programs throughout the country. By 1962 federal funding was becoming available for research and graduate training, and the magnitude of the national pollution problem was such that funding levels would increase. The assimilation of these funds was no problem for these new professors. They had been mentored in the ways of grantsmanship, research, establishing graduate programs, and in recruiting able graduate students.

All of this was well, but two issues were of concern: (1) the third generation group were competing for funds which had been the almost exclusive province of the major schools, and (2)
with so many new programs, a forum to address the questions of curriculum and quality was advisable. The major schools recognized that the expansion was inevitable. But while in the 1940’s and 1950’s programs were nurtured in traditional academic environments where quality was institutionalized, whether such tradition existed for the emerging new programs was not certain. Lacking strong traditions and perhaps having marginal financing, but with the natural zeal to share democratically in the federal largesse, it was feared that administrative exigencies could take precedence over the commitment to quality. Thus, the proliferation of programs was a concern to the major schools, and to the profession, who felt that some forum was needed to address the problems of rapid growth.

Accreditation.

One way to address the problem of quality control for the sprouting graduate programs was to have accreditation, an accepted fact of life for undergraduate engineering. The idea of accreditation seems to have appeared about 1959, Dean Harold Gotaas of Northwestern being a main proponent, with a number of prominent adherents, including Jack McKee of Cal Tech, Rolf Eliassen, then of MIT (Stanford in 1961), and a number of equally prominent persons in practice, including Thomas Camp. Defining the requirements for accreditation and promoting it was one of the main themes of the 1960 education conference at Harvard. Evidently, the Conference had effect as in 1959 only one graduate program was accredited and in 1966 fifteen programs had ECPD accreditation (Rohlich, et al. 1967).

While the seeds for the accreditation idea came from Dean Gotaas, the looming proliferation of graduate programs in the 1960’s made the need even more imperative as a means of quality control. Since those of this second generation involved in the AAPSE dialog were some of the academic contingent involved in ASEIB the stories are intertwined.

And so as Dean Gotaas of Northwestern was also a member of the American Sanitary Engineering Intersociety Board, a representative organization to the Engineer’s Council for Professional Development (ECPD), which is now the Accrediting Board for Engineering and Technology (ABET), he as well as others interested in accreditation of sanitary engineering graduate programs had a powerful platform to promote their views. This ferment for accreditation and concern about quality control (to use recent vernacular) culminated in the 1960 Conference on Graduate Education at Harvard. Accreditation has been a recurring theme with the same interactions between AAEE and AEEP.

For example, Dean George Hanna of Nebraska, chaired the AEEP Education Committee from the early 1970’s which drafted guidelines for accreditation procedures which was published in 1979 (Joint Committee, 1979). He was AEEP President in 1977, becoming AAEE President in 1982.

Accreditation had both adherents and opponents, and yet today the same arguments pro and con appear and the idea of accreditation has not been embraced fully at the graduate level. One argument has been that accreditation inhibits innovation. At the same time, not submitting to accreditation can cover lack of administrative support, inadequate labs, faculty who lack proper credentials, or other deficiencies.

The driving force for accreditation, the ASEIB, later EEIB and now AAEE, has had a continuing interest in graduate education. Its sponsorship of the conference on graduate education in environmental engineering in 1960 gave way to co-sponsorship with AEEP in 1967, 1973, 1980 and 1986, with AEEP assuming the lead role by 1980. The Academy also has had representation c. 1984 on ABET. The co-sponsorship for the 1967 Conference was by the influence of Harvey Ludwig who at the ASEIB Board meeting February 5, 1966 helped get passed a resolution to that effect (see Appendix E.3, Letter 5). As noted in the letter, he was trying also to set up the support for a resolution inviting AAPSE to be a co-sponsor of EEIB (later AAEE). This, however, did not come to pass until 1977 after continuing interaction in the 1970’s by Walter Purdom and then George Hanna with a then “cool to lukewarm” AAPSE/ AEEP Board.
The Research Infrastructure.

Until the mid 1970's the research infrastructure in water supply and pollution control existed in two places: the USPHS-FWPCA-FWQA-EPA research labs, and the universities. Later, in the 1970’s, private firms became another dominant force. Also, graduate students with doctorates were going increasingly to consulting engineering firms and the center of gravity of the research infrastructure was shifting away from the universities. The USPHS-university binding was strong in the 1950’s and 1960’s, however, and the research and graduate student indoctrination has given us contemporary practice. The strength of this tie in the 1950’s and to 1965 had much to do with the leadership in both places, comprised mainly of the charter members of AAPSE from the universities and such persons with the USPHS as Mark Hollis, Assistant Surgeon General, Gordon MacCallum, Chief, Division of Water Supply and Pollution Control, Harry Kramer, Chief of Training Grants Program, and many others. Harvey Ludwig had considerable influence in setting up and nurturing this tie during his tenure from 1951-56 with
SIDEBAR: THE US PUBLIC HEALTH SERVICE

Federal patronage of academic research in water supply and pollution control started about the mid 1950's with the real growth in graduate student numbers and in research dollars starting in 1958 under the direction of Harvey Ludwig, who by 1955 had become a full colonel in the USPHS commissioned corps. The story goes back, however, to 1942, when after completing a masters degree at Cal under his mentor, Professor Wilfred Langelier, Harvey Ludwig entered the Sanitary Engineering Commissioned Corps of the PHS (US Public Health Service) as a first lieutenant and was assigned to the San Francisco office (Ludwig, 1985). His initial job was checking proposals for community sewerage facilities to be financed by federal funds under the Lanham Act. In December 1942 he was assigned to the Atlanta office with Colonel Mark Hollis as deputy director, who was to become his second mentor. In 1943 Gordon McCallum joined the office and soon he and Ludwig formed the beginning of a life long friendship and continuing professional association. This was a fateful triad of forceful personalities who later were to shape federal policies for pollution control in the United States, molding the institutional foundation for the expansion years of the 1960's and 1970's.

But getting back to the Atlanta story, the strands that shaped the institutions were evolving during this war-time period at the field office of the PHS called Malaria Control in War Areas (MCWA). A main activity of this unit was to control and eradicate tropical diseases. The organization, under the PHS Bureau of State Services, was set up originally to control the most malaria-ridden Army training station, the Fourth Corps Area with headquarters in Atlanta (Furman, c.1973), and had an important role in the war effort. The approach in malaria control was to have a "team" comprised of an engineer, a physician, and a biologist.

At the close of WWII, in 1946, the stage was set for a transformation of the PHS from what Ludwig (1985) had characterized as a staid pre-war organization. The change was due perhaps to the new opportunities for solving problems due to demands of the war effort, new visions resulting, a new dynamism and vitality injected by the urgency of the problems such as malaria control, training new personnel, and to the personalities. Indeed, a number of future leaders in the PHS pollution control programs were on the scene in Atlanta. So the Surgeon General began promoting new institutions which shaped indelibly the future forms of practice nationally and even world-wide (Furman, 1973). First on the agenda was a well-financed World Health Organization to function under the United Nations. Second, the National Institutes of Health (NIH) at Bethesda was to be the focal point for fundamental medical research in the United States. Third, the MCWA program in Atlanta was transformed into the Communicable Disease Center. Fourth, a national center in Cincinnati was promoted to combat water and air pollution. Although Dr. Parran gave credit to Mark D. Hollis for the founding of the CDC, the latter credited Dr. Joseph W. Mountor, who stated that the PHS should not scuttle the machine it had built in Atlanta. Fifth, in 1946 the PHS established the Research Grants Office in NIH and the Office of Scientific Research and Development went out of existence. Sixth to administer research, the National Advisory Health Council was established, with study sections of experts, to review research proposals. In 1947 the Council made 129 grants to 71 universities, totaling $2,079,693 (Furman, c.1973). At this time also Mark Hollis became Chief Engineer of the PHS, with the rank of two star general and was to guide the developing pollution control program.

In June 1946 Ludwig left the PHS for consulting, and then in 1949 joined the Cal faculty with rank of associate professor. The two year tenure, 1949-1951, with Earman Pearson, Warren Kaufman, William Oswald, P. H. McGaughy and Harold Gotaas was to lay the foundation for the "big research" era which was to follow in academia. It was the transition from the ivory tower research, still the image of many persons, to the professor as entrepreneur and manager kind of research. It was a movement from fun in a lab to big business.

While at Cal, Harvey Ludwig was periodically summoned to Washington by Gordon McCallum, Chief Advisor to the Deputy Surgeon General, and Mark Hollis, Chief Engineer, USPHS (Ludwig, 1985). The problems in pollution control were entering an S-shaped growth phase. In 1951, Mark Hollis offered Harvey Ludwig and his brothers, commissions in the Regular Engineer Corps of the USPHS, with three of four brothers with the USPHS in Cincinnati, while Harvey worked with McCallum and Hollis. One of his first tasks was to engineer the naming of the new research center at Cincinnati, the "Robert A. Taft Sanitary Engineering Research Center", and have this embedded by legislation. The idea was to lock-in the engineering role of the center, rather than let it be "another health center run by a medic". In 1952 Ludwig was promoted to full colonel and moved from working with McCallum to working with Hollis, as Chief of Engineering Resources, and ex-officio assistant to Hollis. The first task was to re-vitalize the Division of Water Supply and Pollution Control (DWSPC) created by legislation just after WWII. Only two states out of forty-eight gave favorable recommendation to Congress that the DWSPC should continue. What was needed was a new Division Chief. Ludwig's choice was Gordon McCallum, who had not considered this as a career path and also he and Hollis had differences. After convincing both parties the move was key to re-vitalizing the agency to meet the looming challenges that lie ahead, McCallum accepted. He presided over an agency
that grew from a budget of $10 million/year to $500 million/year. On the political side, Congressman John Blatnik
visited the office to provide some help for a constituent who was selling sewage pumping equipment. The Congressman
came away strongly interested in pollution control, becoming a political leader in the field. Of course he is
identified with the major legislation, continuing even to recent years.

At the same time, the PHS had no air pollution control activity, nor anything in solid waste management. To gain
some start toward in-house capability, Hollis arranged for two special study programs at Harvard. The former was
filled by John Ludwig, who came to lead the program in air pollution control at Cincinnati. Then, to match the
expanding engineering operations, a three pronged research thrust was initiated: (1) a "Research Office" was
set up to represent engineering in the PHS grants program administered by NIH, (2) to reinforce the research and
development, legislation and funding was proposed to provide financial support to key graduate sanitary
engineering institutions throughout the country, and (3) realignment of the role of the Taft Sanitary Engineering
Center, with Harry Hansen as director and Bernard Berger as chief of the Water Supply and Pollution Control
Research Program. The second thrust brought Harvey Ludwig into contact with academics over the country,
expanding his horizons beyond Cal to include John Kiker at Florida and Earnest Gloyne at Texas. One outcome of this
was to establish a National Advisory Panel, chaired by Earman Pearson, and including Gerard Rohlich of
Wisconsin. They evaluated Berger's ongoing projects, giving them an aggregate "score" of 70, as Pearson felt
that quantification was necessary. As stated by Ludwig (1985) in his autobiography "Bernie didn't like this at all,
until we solved the problem completely (made him happy) simply by doubling the scores so the average was now 140".
A major outcome of the panel was to establish an R&D office in Washington, under McCallum, to be headed up by
Leon Weinberger, a professor at Case Institute and former classmate of Earman Pearson at MIT.

Ludwig left the PHS in 1956 to start Engineering Science in Arcadia. The research grants program under
Weinberger/McCallum became institutionalized and was the patron of an expanding national-wide academic research
establishment. Even while in Engineering-Science, Ludwig had daily conversations with McCallum, as one of many
ties, which included AAPSE.

All of this was turned upside down, so-to-speak, in 1965 when Congress moved the water pollution control
activities from the PHS to the Department of Interior, essentially bureaucratizing and politicizing a professional
organization. Many PHS officers elected to retire or leave at this point. Gordon McCallum joined Engineering-
Science, starting its Washington D C. office, and Leon Weinberger later joined. At this time, the training grant
program was started, but the "love affair" between the academics and the Washington patron (the DWSPC) was
beginning to wane with new surities coming on to the scene, e.g., private companies geared up to do contract research
under the RFP mode. Then, with pollution control becoming such big business and with the national spotlight
on the problem, the center of gravity for research in pollution control was getting away from the academics
Finally, in 1970, the EPA was formed by Presidential Order, and all governmental pollution control activities
were consolidated in one agency. Although the training grant program was alive, it was soon on the agenda to be
killed. EPA was still a patron of sorts, but was becoming an unwilling one. First EPA had its own labs created around
the country to emulate the Taft Center, with their own specialized agendas. Second, while a cadre of professionals
remained in Cincinnati, the agency had mushroomed in site, with lawyers predominating, such that what remained of
the PHS infrastructure was overwhelmed by a new group not cognizant of old traditions, and having their own agenda
The result was that the new organization used as its modus operandi the RFP (Request for Proposals) in the the
Commerce Business Daily, often specifying six-month performance periods and a very specific scope of work
Giving stability was the cadre at Cincinnati and regional offices, many of whom retained their rank in the
Commissioned Corps, and were assigned to EPA. But with its mission to regulate and being overwhelmed by lawyers,
the pollution control effort, while effective, was not efficient. The nation's well-springs of new knowledge capital, the
academic institutions, began to lose their health.

Despite this loss of "health" and the lessening of the academic love affair with the patron, the influence of the
academics still was pervasive, as the knowledge capital generated during the 1950's and 1960's was the basis for
practice in the 1970's and 1980's, supporting vast construction programs. This came about not only through
publications in journals, but by the dissemination of graduates into EPA, consulting firms, and state health
departments.

The seeds that had been planted by Hollis, McCallum, and Ludwig in the 1950's, gave the country a foundation for
the challenges to come. Beginning in 1977, AEEP realized that things had changed and took steps, in its first Research
Needs Conference, to rekindle a relationship with EPA while being supported by NSF. While the flame and passion
were not the same, out of necessity to both EPA and the academic community ties were renewed and strengthenened
between AEEP and the EPA Division of Exploratory Research.
the USPHS and continuing influence to about 1965 through almost daily telephone conversations with Gordon McCallum. The latter became the head of the Washington D.C. Office of Engineering Science when he retired from the USPHS c. 1966. When Congress shifted the pollution control programs from the USPHS in 1965 to the Department of the Interior, they dismantled the federal government portion of this infrastructure, a scientific-engineering professional group, and politicized it. The conservationist groups came into control, and then in 1970, when EPA came into being, the day of the lawyer arrived. From that point on money was disseminated according to new rules, and new relationships had to be built with the universities. Later, the National Science Foundation entered more strongly into the picture, filling some of the resulting void. An abundance of funding was available in the late 1960's and early 1970's and so the change in structure was not particularly noticeable or detrimental to research funding. But by the time of PL 92-500 in 1972, the past precedents and traditions were broken and this was soon felt in a drying up of monies and by 1975 EPA was trying to kill the training grant program. This drying up has been felt in practice as the knowledge capital developed in the 1960's, the basis for billions of dollars in capital expenditures during the intervening years, has not been expanded commensurate with the magnitude of the task.

Well before 1975 AEEP was trying to build new bridges with the federal agencies. This was established quickly with NSF under Dr. Arthur Ezra and Dr. Edward Bryan, but their program had a modest budget. The ties with EPA have been maintained over the years to an extent. But the scale of EPA operations, its mandates from Congress, and the multiplicities of constituencies have combined to make difficult a replication of the close ties paralleling the days of Harvey Ludwig and Gordon McCallum. Strong rapports were re-instituted in the 1980's, to be sure, but the love affair with academia was gone.
The 1960 Conference.

The 1960 Conference on Graduate Education of Sanitary Engineers, June 27-29, 1960 at Cambridge was a landmark event. Sponsorship was: ASEIB (American Sanitary Engineering Intersociety Board), with co-sponsors: NSF, Harvard University, and the Massachusetts Institute of Technology. It was the first gathering of persons who had primary interest in the emerging problems in graduate education. For such a significant event, little is recorded about it except the conference report, but there is continuing reference to it in conversation.

The conference chair was Thomas R. Camp, who was, at the same time, chairman of ASEIB. The objectives of the conference were, in the words of the Chairman: “first, to study the present and future educational needs of sanitary engineers in order to develop graduate curricula and general course contents and objectives to meet these needs; and second, to explore the advisability, the feasibility, and the methods of accrediting master’s degree programs in sanitary engineering”. In addition, there was concern that with the rapid growth in federal monies on the horizon and the commensurate proliferation of emerging schools, some coordination was needed. The larger schools were becoming alarmed at the possible scenarios and the Conference was a means of addressing these new concerns.

The statistics quoted by Camp are interesting, especially when compared to today's numbers. He states: “During the decade from 1947 through 1956 baccalaureate degrees with specialties or options in sanitary engineering numbered 1995, or about 200 per year; master's degrees numbered 1327, or about 133 per year; and doctors degrees numbered 63, or about 6 per year.” The total production per year of sanitary engineers was only about 300. Camp pointed out that, “the Sanitary Engineering Education Directory, published in January 1960 by ASEIB, reveals that there are 65 colleges and universities offering master's degrees in sanitary engineering, or in civil engineering with specialties in sanitary engineering. This indicates an average of less than two candidates for the master's degree per institution.” Further review of the Sanitary Engineering Education Directory reveals that approximately 290 professors and instructors in this country were engaged in teaching or research in some aspect of sanitary engineering. Since the total production of sanitary engineers from our colleges and universities in one year was only about 300, including both baccalaureate and graduate degrees, there was an equivalent of about one professor or teacher working part time or full time for each recruit produced. “This seems to me highly uneconomical,” Camp concluded, further commenting, “a general reorganization should be considered to reduce the number of persons teaching sanitary engineering.” At the same time, Camp mentioned that, “the Public Health Service has estimated a need of about 22,000 sanitary engineers by 1970.” He estimated the number of sanitary engineers in the United States as 6,000, which required the education of 1,600 graduates per year.

The conference produced a number of significant resolutions. First, the dialog on accreditation led by ASEIB, noted in Section 2.4, was endorsed. Second, the question of title designation was to be studied so that a mutually acceptable engineering title of common usage be established, as the terms “sanitary engineer,” “industrial hygiene engineer,” “public health engineer,” and “environmental health engineer,” had been variously used. Third, ASEIB was requested to study the question of collaboration among schools having programs in fields of engineering related to environmental health. Fourth, the length of study for the master’s degree was set at one calendar year, rather than one academic year. Fifth, each institution was to be free with respect to the thesis requirement for the master’s degree. Sixth, a common core of courses was identified as: chemistry, microbiology, radiological hygiene, statistics, and epidemiology.

The resolutions had significance that extended in time for years to come and the conference itself was the predecessor and set the pattern for future seven-year conferences of AAPSE. The first sponsor of the Conference, ASEIB, would have continuing identity with the seven-year conferences, and NSF would continue the association with AAPSE and AEEP. Further, the Directory of Sanitary Engineering
Education, prepared by Gilbert Dunstan, was the forerunner to the Register of Graduate Programs in Environmental Engineering Education, continued by AAPSE-AEEP. Finally, charter members of AAPSE were among the conference participants.

Thomas Camp, the Conference Chairman, was another of the key figures in the field of sanitary engineering. A professor at MIT until 1945, when he founded the firm which became Camp, Dresser, and McKee, his milestone papers set the rationale for many design protocols of modern practice. While in practice, he continued interest in education. As a personality he was straight-forward, and right to the point (Gloyna, 1988).

Looking also at the roster of 111 conference participants, one sees others in consulting engineering and government who were active in education. Some included: Bernard Berger (USPHS), Frank Butrico (who succeeded Ludwig as Assistant Chief Engineer of USPHS, then went to PAHO as Chief Engineer), Rolf Eliassen (MIT, then Stanford, and also Chairman, Metcalf and Eddy), Paul Hance (Black and Veatch), Richard Hazen (Hazen and Sawyer), Harry Kramer (USPHS), T. E. Larson (Illinois State Water Survey), Gordon McCallum (USPHS), Fred Merryfield (Oregon State and partner Cornell, Howland, Hayes, and Merryfield), C. N. Sawyer (Metcalf and Eddy), Harold Shipman (WHO), Conrad Straub (USPHS), Leon Weinberger (Case Institute of Technology, later USPHS), Roy F. Weston (Roy F. Weston, Inc.), D. W. Ryckman (Washington University and later consultant). Of the 111 persons registered, 71 listed affiliations as academic institutions, and 40 listed non-academic affiliations, and included not only the USPHS and various consulting firms, but professional organizations such as AWWA, APHA, Air Pollution Foundation, and several state health departments. Future AEEP members who attended were: D. E. Bloodgood, J. A. Borchardt, E. W. W. Eckenfelder, Jr., R. S. Engelbrecht, E. F. Gloyna, G. P. Hanna, Jr., W. J. Kaufman, J. E. Kiker, Jr., P. L. McCarty, P. H. McGauhey, J. E. McKee, J. B. Nesbitt, D. J. O'Connor, D. A. Okun, G. W. Reid, L. G. Rich, G. J. Schroepfer, J. M. Symons, and W. J. Weber, Jr. In addition there were many other active academics, including: V. C. Behn, E. Boyce, A. W. Busch, W. E. Dobbins, G. H. Dunstan, R. Eliassen, G. M. Fair, C. D. Gates, J. C. Geyer, C. F. Gurnham, J. J. Harrington, J. A. Logan, J. E. McKee, R. E. McKinney, D. F. Metzler, P. F. Morgan, J. C. Morris, H. A. Thomas, Jr., C. J. Velz, and L. W. Weinberger.


The AEEP files include no items concerning the formation of AAPSE until a September 9, 1963 meeting in Cincinnati, which initiated the formal momentum leading to AAPSE. There is no reference either to the 1960 Conference, though certainly it must have had influence. But based upon what we know before the 1960 Conference, the event of the Conference, the Conference participants, the personalities of the AAPSE founders, and of the events from September 9, 1963 on, there must have been considerable ferment. Earnest Gloyna stated that the idea of AAPSE was a continuing discussion in various meetings (personal communication, 1988).

The September 9, 1963 meeting itself was more than a casual event, since it was not in conjunction with any organized meeting. Those attending the meeting agreed to meet in Chicago to formally start AAPSE and to adopt bylaws.
3. FOUNDING AAPSE

“At 1600, December 5th, 1963 in the La Salle Hotel, Chicago, Professor E. A. Pearson, Chairman pro-tem of the Board of Directors, called the meeting to order and declared the first order of business should be the election of officers.” With those words, the American Association of Professors in Sanitary Engineering, i.e., AAPSE, chartered by a vote of eighteen members present just a few hours before, was on its way as a viable organization. The story follows.

Formation.

As noted, the idea for AAPSE came mainly from Harvey Ludwig, with the stimulating influence of Gordon McCallum, being reinforced by frequent dialog with Earman Pearson and Warren Kaufman, along with Earne Gloyna, Linvil Rich, and others. Finally, after talking about the organization for some years, the founding group said “let’s do something” and called a meeting in Cincinnati (Gloyna, 1988).

That Harvey Ludwig was the father of AAPSE is in an undated memo, c.May 1965, from Jack Mcke (Letter 2, Appendix E.3) in which he states that AAPSE was the “brainchild” of Harvey F. Ludwig. This attribute was verified also by Dean Gloyna (1988). In addition to being the founder of Engineering-Science, Inc., Harvey Ludwig was also a part-time member of the sanitary engineering faculty at Cal Tech, and was a good friend of Professor Jack Mcke.

Founders Meeting, Cincinnati, September 6, 1963. Present at this meeting, the first recording of any organized AAPSE activity in the archives, were Rohlich, Kaufman, Gloyna, Rich, and Ludwig. This group declared the American Association of Sanitary Engineering Professors to exist, and elected E. A. Pearson as Chairman Pro-tem. Harvey Ludwig wrote the memorandum summarizing the results. Earne Gloyna stated with a touch of levity that Earman Pearson was elected Chairman because he was not present.

In Earman Pearson the group could not have found a person more equal to the task of getting the fledgling organization off the ground. Professor Pearson was large in size, with color in character and self-confidence to match. In combination with Warren Kaufman, his colleague at Berkeley, and support from Earne Gloyna at Texas, both systematic and thorough, and the communicative 1967 Conference and un-reticent Harvey Ludwig in Arcadia, and Dean Linvil Rich at Clemson, the task involved was an endeavor having good chance for success.
Ad Hoc Group Meeting, Seattle, October 10, 1963. To add to the momentum from Cincinnati, a meeting was held in Seattle, in conjunction with the WPCF Annual Conference, and included: Pearson as Chairman pro tempore, Kaufman as secretary, Eckenfelder, O'Connor, Engelbrecht, Sylvester, Borchardt, McGauhey, and Ludwig. They were unanimous in deciding to hold a formal organizational meeting on December 5 and 6 in Chicago, with Pearson and Kaufman drafting by-laws.

The Seattle meeting picked up additional key support, and resulted in the critical next step, which was the Chicago meeting. The charge to Pearson and Kaufman to draft by-laws insured that the Chicago meeting could result in a tangible organization.

Charter Meeting, Chicago, December 5, 1963. The Chicago meeting was a dramatic event. After the opening by Chairman pro-tem Pearson, Professor Rohlich started the meeting speaking on the possible functions of the organization. Then he read a letter from Dean Wendt, Dean of Engineering at Wisconsin, who was President of ASEE, in which Dean Wendt offered a “home” to sanitary engineering professors in ASEE. Professor Rohlich also pointed out that this new organization could overlap with both ASEE and ASCE. Warren Kaufman then reviewed, “The Case for an American Association of Sanitary Engineering Professors”, and a statement of objectives, dated December 3, 1963, prepared by Kaufman and Pearson.

Chairman pro-tem Pearson, as the first order of business, declared that all persons present were members pro tem. Persons present were fourteen in number and are listed in Table 3-2.

<table>
<thead>
<tr>
<th>Table 3-1 Founders of AAPSE, Cincinnati, September 6, 1963</th>
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<tbody>
<tr>
<td>H. F. Ludwig &amp; Linvil G. Rich</td>
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<tr>
<td>W. J. Kaufman &amp; G. A. Rohlich</td>
</tr>
<tr>
<td>E. F. Gloyna &amp; E. A. Pearson²</td>
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</table>

² Not present at meeting, but elected Chairman

Sylvester, Pearson, Gloyna, O'Connor, Rich, Engelbrecht, Rohlich; December, 1964 in Miami at NIH Study Section Meeting (R. Sylvester).
Table 3-2 Organizing members pro tem of AAPSE, December 5, 1963.¹ ²

<table>
<thead>
<tr>
<th>Don E. Bloodgood</th>
<th>John E. Kiker, Jr.</th>
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</thead>
<tbody>
<tr>
<td>Jack A. Borchardt</td>
<td>Percy H. McGauhey</td>
</tr>
<tr>
<td>John L. Cleasby ³</td>
<td>Jack McKee</td>
</tr>
<tr>
<td>Wesley W. Eckenfelder, Jr.</td>
<td>Donald J. O'Connor</td>
</tr>
<tr>
<td>Rolf Eliassen</td>
<td>Earman A. Pearson</td>
</tr>
<tr>
<td>Richard S. Engelbrecht</td>
<td>Linvil G. Rich</td>
</tr>
<tr>
<td>Harold Gotaas</td>
<td>Gerard A. Rohlich</td>
</tr>
<tr>
<td>Earnest F. Gloyna</td>
<td>George J. Schroepfer</td>
</tr>
<tr>
<td>Warren J. Kaufman</td>
<td>Robert O. Sylvester</td>
</tr>
</tbody>
</table>

¹ Minutes of meeting
² The members of AAPSE pro tem on December 5 who were members in good standing by May 1, 1964 are considered here as "organizing members". This group includes the list above, excluding Cleasby, whose membership was after that date, but including Baumann, who was present by proxy and whose membership started by May 1, 1964, and excluding Eliassen, Gotaas, and McKee, who did not elect to become members.
³ John L. Cleasby was representing E. Robert Baumann (personal communication, John L. Cleasby, August 15, 1989)
It was moved and seconded that an organization be formed, which permitted discussion. Several members noted the overlap with ASEE, ASCE, and ASEIB. Professor Gotaas advocated getting behind ASEIB to accomplish many of the AAPSE objectives, which was reinforced by Professor Eliassen. Professor McKee discussed each of the objectives presented by Kaufman and noted that most should be handled by ASEIB, and other organizations. With the call for the question, 14 voted in favor, 1 against, and 2 abstained. Professor Pearson ruled the Association established.

As the minutes show, in Appendix C.3, the members “pro-tem” reviewed the bylaws of Pearson and Kaufman, article by article. Professor Jack McKee led the initiatives for modifying the articles with active roles by Professors Rohllich, Eliassen, Bloodgood, Kiker, and McGauhey. Professor Bloodgood moved that the name be, the “American Association of Professors in Sanitary Engineering”, to recognize those in the field of sanitary engineering education who have backgrounds in disciplines other than engineering. Directors elected were: Pearson, Kaufman, Gloyna (3 year terms), Rich, Engelbrecht, O’Connor (2 year terms), and Sylvester, Rohllich, Borchardt (1 year terms). The Bylaws, as amended through 1988, are in Appendix B.2.

First Board Meeting Chicago, December 5, 6, 1963. At 1600 hours, December 5, E. A. Pearson, Chairman pro tem, presided over the first AAPSE Board meeting and declared the first business was to elect officers (from among its directors). Elected were Pearson - President, Gloyna - Vice-President, Kaufman - Secretary-Treasurer. No longer was the pro tem adjective needed.

The first Board meeting got the organization off to an ambitious start, first by naming committees, with appointments to each. Committees formed included: Audit, Education, Legislative Analysis, and Research. Also, the new AAPSE showed some of its character in legislative initiative, taking the position of opposing the Muskie Bill, since it would take water pollution control from the USPHS, and engineers would function only at a technical level in the new organization. The Board authorized President Pearson to make known this stand. On December 6 the Board set dues, set in motion membership build-up, and authorized incorporation. With adjournment, the organization AAPSE had a robust start.

On December 17, 1963 President Earman Pearson sent letters of invitation for membership to professors in sanitary engineering throughout the United States (Appendix E.3, Letter 7). The drive for membership was started, which would precipitate a great debate.

The Attempt to Terminate AAPSE.

The debate at the Chicago meeting on the topic of overlaps with other organizations did not die with the vote to form AAPSE. Professor McKee had further thought and on December 30, 1963, wrote a letter to professors in sanitary engineering throughout the country asking his colleagues to consider the arguments and to open a larger forum for debate on courses of action to improve the standing of sanitary engineering education in ASEE and other organizations. The letter is in Appendix E.3 as Letter 2.

The letter of Jack McKee ensured that the issue would be debated and discussed widely, since it followed by several days President Earman Pearson’s personal letter of invitation for membership to the same list of professors (Appendix E.3, Letter 1). President Pearson responded to Professor McKee in a January 10 letter with copies to all professors in which he addressed each of the issues raised (Appendix E.3, Letter 3).

Professor Rolf Eliassen had aptly summarized the state of affairs “as they were” (even before the McKee letter) in a three page letter of December 19, 1963 to Professor Warren Kaufman, stating: “You people certainly started an uproar all over the country. Letters have been flying back and forth and others will undoubtedly come after the New Year. On the whole, the opinion I get is that it is good for sanitary engineers to be united in their actions, but existing mechanisms should be thoroughly studied before being discarded.” Professor Eliassen continued, recounting some of his first-hand knowledge of how national policy was
changing in the area of pollution control (which related to dialog between the two at the December 5 meeting in Chicago).

With only about 14 members, AAPSE at that time was vulnerable. The existence of AAPSE was opposed by one of the prestigious professors in the field, Jack McKee, who had just completed a term as WPCF President. The organizing members in support of its formation, however, had equal stature. While this had some bearing in highlighting the arguments, the decisions on whether to join were being made on the issues of proliferation versus pragmatism, i.e. having a responsive organization (with cost being another question). Also to help bolster membership, the date for charter membership was extended to October 1, 1964. The dialog continued over the year 1964 and into 1965 in letters, notes, conversations, and debates of various sorts. Many professors agreed with Professor McKee that AAPSE wasn’t needed and, on principle, didn’t join. Some have maintained their position to this day while others changed their minds later. An indication of the flavor of the times is captured in a letter from Baumann, at Iowa State, in his reply of February 4, 1964 to President Pearson’s invitation to join, in which he stated:

“Almost everyone I talked to concedes that we should have an effective way for taking immediate action and there is almost universal regret that this is not through the American Society for Engineering Education. However, they also indicate that it will take some years and some efforts to change ASEE to be able to give the immediate voice which is desired. I extend my hand, take me in.”

The debate continued into 1965, with Harvey Ludwig active in the wings and, at the same time, running probably the most imaginative and successful sanitary engineering consulting firm in California. He and Earnan Pearson were the closest friends and were an effective team. In a memo to the ASEIB Board, dated May 19, 1965, he developed a position paper to support the proposal that AAPSE become one of the sponsoring organizations of ASEIB. The proposal was opposed by both McKee and Eliassen. In a reply letter of May 26, 1965 to Ludwig (McKee was on the ASEIB Board), McKee admonished Ludwig for a misspelled word, which he considered not appropriate for someone who had just received an honorary doctorate degree. On May 29, 1965, Harvey Ludwig received an honorary doctorate from Clemson University and apparently this was Professor McKee’s way of complimenting his friend on the award. On this same issue of the ASEIB sponsorship, Professor John Kiker, in a letter of June 24 to Professor McKee (Appendix E.3, Letter 3), wrote to remind Professor McKee that Harvey Ludwig had been just as active in the founding of ASEIB, incorporated March 1953, as he had been in the founding of AAPSE. So in 1965, still with only 33 members, AAPSE was going ahead, but with Professor McKee, now joined by Professor Eliassen, not wanting to give it legitimacy. Selected correspondence on the issue is in Appendix E.2, which includes ten letters on the issue including President Pearson’s letter of invitation and Professor McKee’s follow-up letter.
Organizing Charter Members of AAPSE
4. MOLDING THE CHARACTER OF AAPSE

While the debate (Chapter 3) was going on the first AAPSE Board was making plans to create an organization that would fulfill its vision. The Board meetings and other events illustrate the agenda and the style of the Board and its President, both of whom would set, for years to come, the character of AAPSE.

Incorporation.

Professors Earman Pearson and Warren Kaufman took the legal steps to incorporate the association, completing the process on August 7, 1964, with both their signatures on the document. The Articles were amended on July 25, 1975 by Professors W. O. Pipes and M. P. Wanielista, pursuant to the May 1, 1972 Board action, which changed the name of AAPSE to the Association of Environmental Engineering Professors - AEEP. The Articles are included in Appendix B.1.

Bylaws.

A tangible outcome of the meeting December 5 1963 was a set of bylaws. The draft bylaws were written by Warren Kaufman and Earman Pearson after the October 10 meeting in Seattle following the charge given to them at the meeting. Their draft of bylaws were subsequently amended in the point by point deliberation at the Chicago meeting, as seen in the minutes, Appendix D.3. Participation was broad and lively, and included Professors McKee and Eliassen. These initial bylaws have been amended six times during the first 25 years, as seen in Appendix B.2.

The Board Meetings.

The minutes of Board meetings reveal the organizational character of AAPSE. Below, we summarize the meetings through 1966. The agenda and the discussions show vitality and aggressiveness in identifying and pursuing issues.

Salt Lake City, May, 12, 1964. The second meeting of the Board of Directors was held May 12, 1964 in Salt Lake City. On the critical concern of membership, Secretary-Treasurer Kaufman listed 24 professors from 17 schools as members in good standing as of May 1, 1964, who are listed in Table 4-1.

On charter members, a March 6, 1964 letter from President Earman Pearson to "Charter Members AAPSE" is the only reference to this group. This letter is included in Appendix E.3 as Letter 3. These members are referred to specifically in Pearson's letter as charter members. The first official list after the call for membership was compiled, however, until May 1, 1964, and is shown in Table 4-1. Following this, the date for charter membership was extended to October 1 (Baumann, 1989, Jones, 1989), and so the October 1 list, shown in Table 4-2, comprises the charter members of AAPSE.

<table>
<thead>
<tr>
<th>Table 4-1 Members of AAPSE, May 1, 1964.</th>
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<tbody>
<tr>
<td>Anderson, D. R., Loyola</td>
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<td>Andrews, J. F., Clemson</td>
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<td>Baumann, E. R., Iowa State</td>
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<tr>
<td>Bloodgood, D. E., Purdue</td>
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<tr>
<td>Borchardt, J. A., Michigan</td>
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<td>Clark, J. W., New Mexico S.</td>
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<td>Eckenfelder, W. W., Manhattan</td>
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<td>Engelbrecht, R. S., Illinois</td>
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<td>Gloyna, E. F., Texas</td>
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<tr>
<td>Kaufman, W. J., California</td>
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<td>Kiker, J. E., Jr., Florida</td>
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<td>Klock, J. W., Arizona State</td>
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<td>Loehr, R. C., Kansas</td>
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<td>Malina, J. F., Texas</td>
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<tr>
<td>McGauhey, P. H., U. California</td>
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<tr>
<td>O'Connor, D. J., Manhattan C.</td>
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<tr>
<td>Pearson, E. A., U. California</td>
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<tr>
<td>Rich, L. G., Clemson</td>
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<td>Rohlich, G. A., Wisconsin</td>
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<td>Schroepfer, G. J., U. Minnesota</td>
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<td>Schulze, K. L., Michigan State</td>
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<td>Selleck, R. E., U. California</td>
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<td>Sylvester, R. O., Washington</td>
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<td>Washington, D. R., Rensselaer</td>
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Table 4-2 Charter Members of AAPSE, October 1, 1964.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
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<tbody>
<tr>
<td>Agardy, F. J. San Jose State</td>
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<tr>
<td>Anderson, D. R., Loyola</td>
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<tr>
<td>Andrews, J. F., Clemson</td>
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<tr>
<td>Baumann, E. R., Iowa State</td>
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<tr>
<td>Bloodgood, D. E., Purdue</td>
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<td>Borchardt, J. A., Michigan</td>
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<td>Burgess, F. J. Oregon State</td>
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<tr>
<td>Clark, J. W., New Mexico S.</td>
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<td>Eckenfelder, W. W., Manhattan</td>
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<td>Engelbrecht, R. S., Illinois</td>
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<td>Ewing, B. B., Illinois</td>
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<td>Gloyna, E. F., Texas</td>
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<td>Jonas, N. B., Utah State</td>
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<td>Katz, M., U. Washington</td>
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<td>Kaufman, W. J., California</td>
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<td>Kiker, J. E., Jr., Florida</td>
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<td>Washington, D. R., Rensselaer</td>
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<td>Klock, J. W., Arizona State</td>
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<td>Krankel, P. A., Vanderbilt</td>
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<td>Loehr, R. C., Kansas</td>
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<td>Malins, J. F., Jr., Texas</td>
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<td>McGauhey, P. H., U. California</td>
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<td>O'Connor, D. J., Manhattan C.</td>
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<td>O'Connor, J. T., Illinois</td>
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<td>Okun, D. A. North Carolina</td>
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<tr>
<td>Eckenfelder, W. W., Manhattan</td>
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<tr>
<td>Rich, L. G., Clemson</td>
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<tr>
<td>Rohlich, G. A., Wisconsin</td>
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<td>Schroepfer, G. J., U. Minnesota</td>
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<tr>
<td>Schulze, K. L., Michigan State</td>
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<tr>
<td>Sallick, R. E., U. California</td>
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<tr>
<td>Sylvester, R. O., Washington</td>
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The agenda included plans for a recruitment program, which would include non-engineers active in the field. Dues schedules were reaffirmed at a $100 initiation fee and annual dues of $50 thereafter.

Reports were given on Congressional testimonies by Kaufman on S. 649 and by Pearson on appropriations. Professor Rohlich met with the SED Executive Committee of ASCE in March to explain AAPSE.

Other business included incorporation, co-sponsorship, with WPCF, of the 3rd International Conference on Water Pollution Research (Professor Pearson, along with Professor Eckenfelder were involved in the international organization at this early stage), and the status and activities of committees, e.g., legislative analysis, education, eligibility, audit, research, and liaison-information. The Board also planned for a half-day open meeting at the October WPCF Conference at Bal Harbor, FL and to pursue a project on Sanitary Engineering Education and Research - Status and Needs, a proposal to be negotiated with the USPHS.

The business at the Salt Lake City Board meeting was momentous in its implications. First, incorporation would give AAPSE legal status as a "person". Second, the co-sponsorship of the international conference would help establish AAPSE's identity. Third, the active committee structure would insure a vigorous program to identify and address key issues of the profession, and thus serve the membership. Fourth, the open meeting planned for Bal Harbour would give a platform for AAPSE to address its potential members, and to have an open interchange. Fifth, the Congressional testimonies set a precedent for active involvement of AAPSE to influence national policy.

The Salt Lake City meeting cast the die for the character of the organization. The agenda demonstrated that AAPSE could identify pertinent issues and act with vigor and influence.

Tokyo, August 25-26, 1964. The Third Meeting of the Board of Directors was held in conjunction with the International Conference on Water Pollution Research. Those present were: Pearson, Gloyna, Rich, Sylvester, Kaufman, and Borchardt. The agenda included old business from the Salt Lake City meeting and progress on program implementation. First on the agenda, the proposal that AAPSE be a co-sponsor of the IAWPR conferences was not acceptable to WPCF. But as Professor Pearson was elected Chairman of the International Steering Committee of the International Association the dialog with the IAWPR would continue and AAPSE would continue to work with WPCF. Second, the proposal to PHS for the project on education and research would be submitted by September.

Third, plans for the open meeting at Bal Harbour would include Board presentations. Fourth, election of three new Board members would be held at the Bal Harbour meeting. Fifth, steps would be taken to propose AAPSE as a sponsoring organization for ASEIB (see Appendix E.3).

Bal Harbour, September 29, 1964. The Board meeting at Bal Harbour was highlighted by a historical summary of the International Conference on Water Pollution Research. The Conference had its origins in the Manhattan College Conference on Waste Treatment and the Berkeley 1959 First International Conference on Marine Waste Disposal. This historical sum-
mary recounted the role of IAWPR and how the Steering Committee was constituted at the London Conference. Although Pearson and Eckenfelder organized the Steering Committee, WPCF had become a prime sponsoring organization and was blocking the co-sponsorship of AAPSE, as per discussion in Tokyo with officers of WPCF. The WPCF proposed to the Steering Committee that they become the umbrella organization, providing general direction for the conference. Professor Eckenfelder, Chairman of the Steering Committee, appointed a subcommittee to study the proposal. The subcommittee, chaired by Professor Stander (accepted by the Steering Committee on August 27) rejected the proposal. Reasons for the rejection were: that WPCF was a national organization, and it was not a professional organization. Professor Pearson pointed out that he had not mentioned to any member of the Steering Committee the interest of AAPSE. Professor Rohlisch moved that AAPSE advise the Steering Committee through its USA representatives, Pearson and Eckenfelder, of its interest in acting as an American sponsor of the Conference and in offering its services and assistance.

**Open Meeting at Bal Harbour, September 30, 1964.** About 50 professors came to the open meeting to get the first look at AAPSE and appraise their respective interests. The Board presentations helped visibility and provided a mechanism for interactions. Many of the professors attending were the third generation sixties group and the $100 initiation fee plus $50 dues seemed to be an inhibiting factor in joining.

**Chicago, February 18-19, 1965.** Professor Gloyda, Chairman of the Legislative Analysis Committee, reported on pending federal legislation, the Blatnik version of the Muskie Bill, which would move the water pollution control activity from USPHS to Interior. Another change in federal support was the “Center” concept of grants to universities. The Educational Policy Committee, under Dean Rich, was asked to prepare a report to the membership on the concept. The AAPSE relationship to ASEIB continued as an area of importance. The Board asked Dean Rich to prepare a position paper on this topic. The Board of ASEIB was listed as P. Purdom, C. H. Atkins, V. Bacon, R. Boston, A. Brandt, F. Butrico, G. Fair, W. Faith, R. Fuhman, H. Golaas, F. Gunham, P. Haney, E. Jensen, H. Ludwig, V. MacKenzie, J. Maga, J. McKee, R. Mitchell, L. G. Rich, L. Silverman, H. L. Thompson, G. R. Watkins, J. Vogt, R. Weston. For each ASEIB Board member AAPSE designated liaison individuals to establish dialog and help improve the relationship.

The Board also agreed to coordinate certain activities of AAPSE with the Association of State and Inter-State Water Pollution Control Administrators (ASISWPA). Professor Pearson reported that funding was delayed for the proposal: “Project on Sanitary Engineering Education and Research Status and Needs.” The dues structure was a major item, with a motion that dues would be: full professors would pay $100 initiation fee and dues of $50 annually; associate professors would pay $50/$25; and Assistant Professors would pay $50/$15. Professor Kaufman considered the $100 as a measure of dedication and felt that to have a large membership was not so important. The argument prevailed that AAPSE should attract the young professors. The motion was tabled until the next meeting.

As a note, the funding on the “project” noted above did not materialize. Probably this was because of the changes that were occurring in the USPHS. Professor Kaufman had, however, prepared a proposal for AAPSE to go ahead with a limited study. He states in the proposal, dated February 16, 1965: “At the present time educational programs in air and water engineering are variously designated as sanitary engineering, water resources, water resources engineering, environmental health sciences, environmental engineering, air resources, environmental biology, etc.; most of the designations bearing no definitive relationship to specific and delimited educational and research activity and serve only to confuse. It is true that the advantage of flexibility accrues from ill defined program titles, as an advisor may modify his definition to suit the needs of both student applicant and federal sponsor. However, it is believed that the disadvantages of confusion, of programs that do not offer solid course work in areas corresponding to titles, and the general problem of communication between faculty at
various schools far exceed the small advantage of flexibility. Although no institution would be asked to modify its program name, it would be asked to define the name in terms of its academic objectives, its specific course offerings, and the particular research activities of its faculty.”

The proposal set forth the categories of information to be collected, e.g., program size (degrees awarded each year for the past ten years, full time faculty each year for the past ten years, etc.), program objectives and content (statement of program objectives, special competences of the faculty, academic organization, core courses, degree requirements for each degree, interdepartmental programs, research work for past three years). Kaufman’s proposal, incisive in the way it was to be constructed, was the model for the AAPSE-AEEP Register of Graduate Program series which have been institutionalized.

Chicago, May 22, 1965. The Board set dues at $100 initiation/$50 annual for full professors and $50/$25 for associate professors and assistant professors, effective January 1, 1966. The “project”, which was scaled down to a Study of Educational Programs in Sanitary Engineering in the U.S., was chaired by Professor Sylvester, who suggested a pilot study of ten schools. The results would be the model for the Directory. Professor Dunstan would be invited to join the study committee, since he prepared the 1960 Directory. AAPSE was invited to recommend several sanitary engineers for membership in the newly formed American Academy of Engineering. Names submitted were: Fair, Camp, Wolman, Ludwig, and Hollis. The Board planned also for the second annual meeting to be held in Atlantic City, with the theme: “Research and Research Support”. The Professors Seminar on May 7 at Northwestern voted to invite both AAPSE and ASEIB to jointly sponsor a “Second National Conference on Sanitary Engineering” of the Harvard type. The Board voted to accept. The Board asked Professor Ewing to serve as Editor of an AAPSE newsletter, with first issue to be mailed by October 1, 1965.

Atlantic City, October 12-13, 1965. The Board reaffirmed the new dues structure. Further discussion weighed the merits of a small active organization with high working efficiency versus one larger and therefore more representative. The larger organization was favored because it would be more representative, would decrease the opposition, and not materially increase operational problems. The Newsletter was successful and would be distributed to all members, others requesting to receive it, heads of sanitary engineering programs, selected government agencies, members of the Universities Council on Water Resources (UCOWR) Board. The “Legislative News” would remain separate.

The Board also voted to accept the offer of Dr. H. F. Ludwig to support an Engineering-Science “prize” from AAPSE, in the memorandum:

TO: E. A. Pearson
FROM: H. Ludwig
SUBJECT: AAPSE Prize

This will confirm the interest of ES (Engineering-Science, Inc.) in underwriting an AAPSE prize to be awarded periodically by AAPSE to a meritorious individual, say a biannual prize in the amount of $1000 (costs to ES not to exceed $500/year). The name of the prize, eligibility, selection of awardee, and all other conditions associated with it would be determined by AAPSE, with the understanding that proper recognition be given to ES for our role in making the prize possible.

cc JLF, LM, RGL

The Ludwig offer set in motion another tradition of AAPSE. Ludwig also stressed the importance of significant cash being the vehicle to draw attention to the fact that the prize was to mark a major accomplishment. In correspondence with Earman Pearson, Harvey pointed out that it was the first award with “real cash”. In a letter of 8 November, 1965 to Warren Kaufman, Ludwig states “professionalism ain’t professionalism without cash” (Appendix E.1, Letter 2). The prize was to be a demonstration of professional leadership: “...AAPSE will succeed only to the extent it does act in a superior (and non-ordinary) way”. This point was reinforced as a fundamental axiom of Ludwig.
The prize continues under sponsorship of Engineering-Science. In 1988 a similar award was initiated by CH2M-Hill.

The Board voted also to support the concept of a strong sanitary engineering group within ASEE. The AAPSE membership would be asked to give their views in a questionnaire on the formation of a proposed ASEE division. Professor Gloya reported on the proposal for organizing a permanent American program Committee for IAWPR, with membership: AAPSE 4, WPCF 4, and one each from ASCE, AGU, ACS, AIChe, AWWA, APHA, UCOWR, ASLO, and ASM. [This committee ultimately became the present United States of America National Committee (USANC) of the present International Association on Water Pollution Research and Control (IAWPRC)].

President Pearson discussed the forthcoming Munich Conference of IAWPR in September 1966, with the Board voting to support IAWPR and the forming of an American Committee.

SIDEBAR: INTERNATIONAL ASSOCIATION OF WATER POLLUTION RESEARCH AND CONTROL

The seed for the present International Association for Water Pollution Research (IAWPR) was planted in 1959 when Earnan Pearson organized an international conference on marine pollution, held at Berkeley, California. But the specific idea of forming IAWPR was generated in 1960-61 in part by Robert Maxwell, owner of Pergamon Press, and by the Editorial Board of the International Journal of Water Pollution Control, chaired by W W. Eckenfelder, Jr. From this came an international conference in London in 1962, which was organized on the U.S. side by Earnan Pearson and Wesley Eckenfelder, and on the British side by B. A. Southgate (see three volume proceedings published in 1964). The London Conference was the beginning of a tradition for a biennial international conference and the next one was held in Tokyo in 1964. From these two conferences, the IAWPR was established formally in 1965 ((IAWPRC Yearbook, 1969-90). Earnan Pearson was President, 1965-66, and 1966-69 and Wesley W. Eckenfelder, Jr was Vice President, 1963-66. AEEP Organizing Member, Richard S. Engelbrecht was President, 1980-82, 1982-84, and 1984-86. During his tenure, c.1982, the name of the organization was changed from the International Association for Water Pollution Research (IAWPR) to International Association for Water Pollution Research and Control (IAWPRC)

AEEP was a sponsor of the Tokyo Conference, mainly through the efforts of Earnan Pearson. AEEP/AEEP has since been involved with IAWPRC on a continuing basis. The form of involvement was as a sponsoring organization of the United States of America National Committee (USANC), following its formation in c.1966. Also, IAWPRC sponsors numerous specialty conferences and AEEP members have been active in these as individuals.

Bernard Berger, one of the founders of USANC, summarized the character of IAWPR in an article appearing the AEEP Newsletter in 1973 (Berger, 1973):

It was approximately ten years ago that the concept of the IAWPR first took shape at the First International Conference on Water Pollution Research in London, in 1962. The initial interest for the formation of this international organization of research workers in the water pollution field came from individuals from 15 nations: USA, UK, S. Africa, Switzerland, etc. These individuals were convinced that common problems of water pollution called for the development of an effective mechanism for sharing research knowledge and experience. The logic of pooling such knowledge justified, in their opinion, a substantial investment in time and effort in the creation of a formal non-governmental organization of professional workers in interested countries. This was the basic motivation for organizing the First International Conference on Water Pollution Research in London. Three years later, in June 1965, the Statutes of IAWPR were formally adopted in Harrogate, England. Currently (April, 1973) 22 nations are listed on IAWPR's Governing Board.

The primary goal of the IAWPRC is to facilitate communication among scientists and engineers engaged in various fields of water pollution research. The focal activity of IAWPR remains the organization of the biennial conferences on water pollution research. In 1970, however, the IAWPR undertook to organize or sponsor specialty conferences on water pollution research problems of important regional interest. Currently, the IAWPRC is initiating programs for preparation of monographs on water pollution topics and for organization of special courses on subjects of regional interest in various parts of the world. The organization also publishes a journal, WATER RESEARCH, through Pergamon Press.

continued on next page
Dean Rich reported on his survey that AAPSE membership supported, in the majority, accreditation of graduate programs and AAPSE sponsorship of ASEIB. The Board reaffirmed the latter. The Board reviewed progress of the Sylvester Committee with concern that the project be completed to have impact on the new FWPB, being formed within Interior. President Pearson urged that AAPSE submit a proposal to recommend procedures for administering grants and contracts under the new FWPB. The Board voted to contact the FWPB Administrator and offer the services of AAPSE.


[A copy of the minutes of this meeting is not available in the Archives.]

Lafayette, May 4, 1966. At this point Earnest Gloyna was President of AAPSE, with Earman Pearson now serving as Past-President. The relationship with ASEB, being looked at by Professor Anthony Gaudy, was a major concern. The professors at the open meeting did not support a Division of Sanitary Engineering within ASEB, by a vote 12-23-22, for, against, abstinence, respectively. The Board voted to notify ASEB of the open meeting vote, but to also indicate a desire to cooperate to make most effective the best points of the different natures of the two organizations. Pearson moved that President Gloyna should send a letter to Secretary Stewart Udall indicating interest in meeting to explore how AAPSE could cooperate with Interior and the new FWPB. The Board also voted in favor of joining with ASEB and ASE for an education conference.

Munich, September 6, 1966. This was a special meeting, held in conjunction with the IAWPR Conference. President Gloyna reported on the pending meeting with Interior, and Professor Eckenfelder reported on activities of the International Invitation Committee concerning arrangements for outstanding foreign visitors to give seminars and tour facilities. On representation to the International Association, Professor Baumann reported that there was agreement that each professional society could provide one or two members to cooperate with the USA National Committee.

Kansas City, September 27, 1966. Professor Sylvester reported that the Register was
being typed. The Board voted a printing of 300 copies, with distribution to: each school listed, selected government agencies, and EEBI and AAPSE would divide the remaining copies, to be sold at $11 per copy. The Education Conference was scheduled at Northwestern University September 6-8, 1967. The proposal on Sanitary Engineering Education and Research was not showing hope of funding due to the turmoil in Washington as FWPCA was formed. Professor Eckenfelder reported on the first AAPSE workshop in Texas and Professor Washington was selected to chair the second AAPSE workshop on Instrumental Methodology, June 7-9, 1967. The meeting with Interior was planned for late fall in Washington D.C.

Open Meetings.

The open meetings started as a forum for communication on issues and as a means to appraise the membership of trends in federal funding, organization changes, and new legislation. The meetings have been held in conjunction with the WPCF Annual Conference and the Purdue Industrial Waste Conference and have become tradition.

Open Meeting, October 12, 1965. With the appreciable controversy surrounding its founding the professors in the wings were awaiting an opportunity to hear directly from the leadership of the fledgling organization, to judge its agenda, and to participate. The open meeting at the WPCF Annual Conference in Atlantic City was the first such opportunity for direct contact. The meeting was well attended and long in duration, with interest strong. The Board wanted and needed a successful exposure of its program and character. This is not to say, by any means, that the officers, and least of all President Pearson, had the slightest doubt about the need for AAPSE and its destiny. By all accounts, the meeting showed an organization with an agenda, vitality, and a potential for influencing events. It was the start of a tradition.

Open Meeting, May 3, 1966. Fifty-seven professors, and perhaps a few observers, attended an open meeting of AAPSE in conjunction with the Purdue Industrial Wastes Conference. The agenda included: progress on the Register of Graduate Programs, the workshop in Texas under Professor Eckenfelder, the AAPSE award, the relationship between AAPSE and ASEIB, the relationship between AAPSE and ASEE.

Open Meeting, September, 27, 1966. The meeting drew 74 persons. The speaker, John Barnhill, was the new Deputy Commissioner of FWPCA.

Charter Members.

On charter members, a March 6, 1964 letter from President Earman Pearson to "Charter Members AAPSE" is the only written reference. Pearson's letter was to the AAPSE members of that date and they were referred to as charter members. But the first official membership list was compiled on May 1, 1964, which is the list of Table 4-1.

The organization needed members, however, and in an effort to provide incentive to join AAPSE the date for charter membership was extended to October 1 (Norman Jones, for example, 1989, recalled his conversation with Earman Pearson that AAPSE needed membership and charter membership was being extended to September 30, 1964). Between May 1 and September 30 nine new members were added to the roster and included:

Frank J Agardy, San Jose State
Fred J. Burgess, Oregon State
Ben B. Ewing, Illinois
Norman B. Jones, Utah State
Max Katz, U. Washington
Peter A. Krenkel, Vanderbilt
John T. O'Connor, Illinois
Daniel A. Okun, North Carolina
George W. Reid, U. Oklahoma

With these nine additions, membership was 33 members and based upon statement by the Board (Baumann, 1989) that charter membership was extended to members in good standing as of September 30, 1964, the above list is added to those of Table 4-1, giving the Charter Members of AAPSE, Table 4-2.

AAPSE, born December 5, 1963, became a corporate "person" August 7, 1964. The character had been shaped both genetically by the father, Harvey Ludwig, and by the audaciousness and savoir-faire of the other founders. The mold was set for the first years. AAPSE had established the tradition of shaping events rather than reacting to what might come. Congressional testimonies, dialogs with agencies, initiatives on relationships attested to that. The committee structure permitted utilization of the talents of the membership, and a multiple front of activities. The activities slate of workshops, seven-year education conferences, and publications insured vitality. The newsletter and open meetings gave lines of communication. The Register, the support of ASEIB for accreditation, and the forums for interactions gave a trend toward standards of quality. And the commitment of the membership gave a productivity level inordinate for the size of the organization.
Presidents
5. STEADY STATE AAPSE/AEEP

Following the early years of a turbulent genesis, AAPSE became immediately, at the first Board meeting, an organization with an agenda. Implementation was swift. Even in 1964 AAPSE was a sponsor of the IAWPR (International Association of Water Pollution Research) Conference in Tokyo (see Appendix E.4, Letters 1-3). Then the first AAPSE Register of Graduate Programs was published in 1966, a task handled by Robert O. Sylvester. Also in 1966, the first AAPSE workshop was held, chaired by Wesley W. Eckenfelder, Jr. At the same time in 1966, the first AAPSE Award for Excellence was initiated. Testimonies before Congress was another active role for AAPSE, with testimonies by Kaufman, Pearson, and Gloyna in 1963, 1964, and 1966, respectively. In 1967, AAPSE co-sponsored, with EEIB, the second seven-year conference, held at Evanston and chaired by Gerard Rohlich. Active member involvement was underway also from the beginning with a committee structure and open meetings.

In short, by the end of the first three years, the AAPSE Board had implemented a visible agenda that had considerable utility to the profession. The goals and objectives of the founders were achieved. One of the goals was to give the members a voice and to be able to act quickly to situations that needed a focus from the academic community and to have a mechanism to meet some of the needs of the teaching-research wing of the profession. But while the organization was in place, legally as a corporation, and with bylaws, an initial membership, and an accomplished agenda, the vitality of its beginning “track record” was due to the influences, visions, energy and commitment of the founders and early members. The agenda, and the organization, had to be institutionalized. This is what occurred during the first quarter century and was the main task in the years from about 1967 through the 1970’s. By having AAPSE and the AAPSE agenda institutionalized, the organization would become “steady state” and could devote its energies primarily to fulfilling its goals and objectives, vis a vis trying to get established and, indeed, survive.

Institutionalizing AAPSE.

By institutionalizing AAPSE we are referring not only to the fact that the organization was incorporated and that bylaws were developed, but to the process that occurs when an organization is developed and healthy, in which it functions without a conscious effort on every agenda item, nor even in the spontaneity of generating new programs. In other words, the workshops, the award for excellence, the newsletters, etc., would be expected and would occur automatically as a part of the healthy organization. So too would new initiatives be generated as part of the process of doing business. The organization would automatically allocate energy resources to making these tasks function - and spontaneously show the vitality needed. The committee structure assured this.

This institutionalizing process was well underway even within the early years. The new members that were joining were immediately finding places on committees and on the Board. Those who took on these volunteer tasks were enthusiastic, dedicated, and effective. Thus, the effectiveness of the organization was assured and the ambitious agenda was being fulfilled. We see, for example, that in 1967, Earman Pearson was no longer on the Board. Neither do we see Harvey Ludwig in the wings. AAPSE had been born and was surviving well. To be sure, Earnest Gloyna, one of the founders, was president in 1967, but he presided over a Board that was reaching out for new members. In 1968 the president was Ben Ewing - new blood. Indeed, within the first 25 years Board membership was distributed among 66 members, or 20 percent of the 1988 eligible members. Then those nominated for the Board have numbered twice as many, or 40 percent of the 1988 eligible members. If we add committee chairs and membership, a large portion of the membership has been active in making the organization work. As noted, the “participation index” for AAPSE/AEEP has been high.
AAPSE in 1970.

The Board minutes of December 14, 15 1970, Appendix F.1, Doc 2, illustrate the breadth and vitality of AAPSE by that year. The agenda was being implemented as a normal part of the business and had expanded considerably with initiatives. Also, positions were being articulated, and the administration was becoming more efficacious. The 1970 Board Minutes show 15 active committees at the end of the year under President Robert Baumann, with 20 committees to start the year 1971 under President-Elect Ray Loehr. The 1971 committees included: Education, Operations, Publications, Audit, Arrangements, Visiting Lecturer, Operator Training and Continuing Education, Newsletter, Awards, Register, Undergraduate Environmental Education, Manpower Needs, Seminar, Membership, Eligibility, Nominating, USANC, Workshop, Ad Hoc Public Information, and Ad Hoc Laboratory Manual. The minutes show also that problems were identified without reticence, such as the report of the Education Committee. As noted in Appendix F.1, the problem was remedied in the 1971 charge to the Education Committee.

Another example of the vitality of AAPSE in 1970 is seen in Appendix F.2, Doc 3, “Minutes of the AAPSE Interim Policy Meeting, which met November 19, 1970. Excerpts give the tone:

3. The principle functions of AAPSE were agreed to be:

(a) To provide leadership and guidance in environmental engineering education. AAPSE can work quickly and effectively in response to changing educational opportunities as well as working on long range educational policy and planning needs of the profession.

(b) A voice from the educational area to agencies and organizations involved in policy decisions affecting environmental engineering education. The changing nature of environmental engineering education and the pressures for such education at all levels will increase. There is a strong need to provide a forum for discussions of these changes and needs. AAPSE can be a source of leadership in this area and its activities can be a forum for the discussions.

4. There is a need to avoid any inhibitions on participation with other organizations. AAPSE needs to keep its engineering identity and philosophy but should be more aggressive and positive in improving its leadership in the profession.

The meeting covered a wide range of topics, including curriculum, national research policy, manpower requirements, ties with other organizations including lay groups, involvement of membership, frequency of Board policy meetings, etc.

Further tightening of operations was accomplished also in the 1970's. An example was the financial accounting, revised in 1975 under Board Member Marty Wanielista.

AAPSE to AEEP.

In 1972, after considerable discussion, AAPSE followed other organizations in seeking a clearer identification, changing its name to the Association of Environmental Engineering Professors, i.e., AEEP. The American Academy of Environmental Engineers was the first to adopt the “environmental” designation, doing so in 1966. They were followed by ASCE Sanitary Engineering Division becoming the Environmental Engineering Division c. 1970. The designation “sanitary” engineer was no longer apropos to the public perception of the problems at hand which reflected the substantive issues which were emerging after 1962 when Rachel Carson published Silent Spring, precipitating the environmental-ecology movement that spawned a stream of legislation into the 1970’s. Thus, such terms as eutrophication, nutrients, TL50, TL90 (toxic concentration level of a given chemical substance when 50, 90 percent, respectively, of a given aquatic organism die), risk, habitat, PCB’s, etc. started coming into the vernacular to express societal concerns with esthetic and ecological values of our natural resources. Then an educational metamorphosis was occurring as sanitary engineering education was borrowing from chemical engineering and other fields in its technical approaches, as exemplified by terms such as: reactor, kinetics, diffusion, continuous flow, wave front, systems analysis, linear programming, mass spectograph, etc. The educational basis was changing
from rules of thumb (e.g., so many cubic feet of digester per capita, grains per gallon of hardness, the methylene blue test, etc.) to give a science based foundation. Thus, although the adherents to sanitary engineering were vocal in almost every meeting, and all straw votes indicated those in the field favored the traditional name, in the secret ballots the name environmental engineering won easily. Such a pattern was repeated for the Academy, for ASCE and for the AEEP, when in the August 1972 the Board mailed ballots to the then AAPSE membership. When the votes were counted AAPSE became AEEP.

Reasserting AEEP’s Academic Destiny.

The AEEP Founders may have had in mind a more ambitious political agenda than the membership. Although the AEEP membership was past the crisis point and was healthy, many were remaining unaffiliated with the organization. Reasons had to do with the cost ($100 initiation, and annual dues of $25 for assistant and associate professors and $50 for full professors), philosophical differences as articulated by Jack McKeen, and a disagreement over the agenda which some thought too political (King, 1989). As the Board changed, some of this group joined, as the political component of the agenda declined and the academic accomplishments were being felt, such as the distinguished lecturer program started in 1969 with Richard Dick, the chemistry lab manuals with David Jenkins/Vernon Snoeyink, James Leckie, the unit operations lab manuals with John O’Connor, the Register of Graduate Programs with Aame Vesilind, the manpower studies by Joe Middlebrooks, the surveys of enrollments by various chairs, etc. All of this was underway in the early 1970’s. So there was a definite purposeful retrenchment away from having a strong political agenda. The movement was toward becoming a strict constructionist academic organization.

The AEEP interest in becoming a strict academic organization is illustrated in relations with AAEE and IAWPR, organizations so close to Harvey Ludwig and Earman Pearson who, as noted, were among the respective founders of each. In 1972, for example, the May 1 Board Minutes show no interest in being a sponsor of AAEE. The continuing efforts of Walton Purdom and George Hanna were instrumental in seeing a warming of AEEP toward being a sponsor of AAEE. The first indication was in 1975 with a motion by Joe Malina at the May 8 Board meeting that AEEP be a sponsoring organization of AAEE. AEEP finally became a sponsor of AAEE in 1977, twelve years after the initiatives of Harvey Ludwig. Another illustration was with USANC/IAWPR relations. After the maneuvering by Earman Pearson in 1964 to have AAPSE become a sponsor of the IAWPR Conference in Tokyo (Appendix E.4) the 1972 Board was questioning the value of being a sponsor of USANC. The cost was $500 per year, and so an assessment continued for several years culminating in a 1976 report by Richard Dick reviewing IAWPR objectives, communications, membership and promotion, representation, subscriptions for national members, privileges for national members, etc. The evaluation involved meetings with IAWPC officers. The outcome has resulted in a stronger, lasting tie with USANC and IAWPRC.

Missions from the Ivory Tower. AEEP was developing its own identity as a primarily academic organization, no longer functioning in the shadow of its founders. But events did not permit staying out of the political arena completely. The new EPA, with a regulatory agenda, and with so many new persons, did not value the academic connection, and so was committed beginning about 1973 to phasing out the graduate study training program which was started in the 1960’s. As Robert Ruhl stated to the AEEP Board at its Washington D.C. meeting on December 15, 1975, the training grant monies should be related to PL92-500 (the Water Pollution Control Act Amendments of 1972). Bruce Hanes expanded on this in a 3 page letter of November 24, 1975 to Paul King concerning his activities in Washington. The testimonies to Congress on this program started in 1972 with Richard Dick and included Wesley Pipes in 1973, and Bruce Hanes in 1975 and 1977. While the program was terminated c. 1980, its demise was delayed for several years by the testimonies.
A second political thrust was to try to restore the research program of EPA, which became mission-oriented in the 1970's, with the void in academic research funds filled by a modest NSF program. The research needs conferences in 1977, 1982, and 1988, sponsored by the new patron, NSF, were motivated partly to improve communications with EPA. This effort was supplemented by testimonies from Presidents Francis DiGiano and Richard Luthy. This long effort bore fruit in 1989, with a new budget of $19 million in 1989 after a "bankrupt" program two years earlier (Luthy, 1989), with a commitment by EPA officials to work toward a $50 million per year program for support of academic research.

Accreditation.

The issue of accreditation was a recurring theme following the 1960 Education Conference at Harvard when Professor Jack McKee made the case for it. George Hanna, who chaired the AEEP Education Committee in 1976 prepared a Guide for Environmental Engineering Visitors on ECPD Accreditation Teams, with a final document coming out in 1979 (Hanna, 1979). Some excerpts from the report, sponsored by ASCE, AAEE, and AEEP, are worthwhile to recount, as it articulates some fundamental tenants of environmental engineering education, and it states the goals of accreditation.

Excerpts, Guide for Environmental Engineering Visitors on ECPD Accreditation Teams: The American Academy of Environmental Engineers and the Association of Environmental Engineering Professors believe that education to the level of the Master's degree is desirable for entry to full professional jobs in environmental engineering.

Definition: Environmental engineering is that branch of engineering which is concerned with (1) the protection of human populations from the effects of adverse environmental factors, (2) the protection of the environment, both local and global, from the potentially deleterious effects of human activities, and (3) the improvement of environmental quality for man's health and well being. The environmental engineer is involved in a variety of problems which affect the environment including those resulting from energy conversion and use, transportation, conservation, land use, urban and regional planning, the development of areas of blight and decay in the environment, and other activities having environmental impingement. Professional people in other fields may have direct responsibility for the planning and development of these activities, but the environmental engineers must have concern for the inputs they have on the environment and on man.

Goals and Objectives. The main goal of the accreditation procedure is to assure that graduates of the programs have acquired a sound, broadly-based education with in-depth technical capabilities, and a good understanding of the relation of their expertise to society. Graduates of accredited Environmental Engineering programs should be competent in their specific major area of study, such as air, water, solid wastes, etc., should have an understanding of the entire environmental engineering domain, and should be capable of relating their expertise to the real world of practice.

Environmental engineering education should focus on the following specific goals:
1. Persistent search for better knowledge and understanding of nature.
2. Application of that knowledge and understanding to the solution of environmental problems at the four levels of analysis, prediction and simulation, design, and planning.
3. Development of better methods of communicating engineering principles, practices, and specific recommendations to others also involved in the decision-making process.
4. Improvement of the methods for implementing the solutions, including proper construction, operation, evaluation, and management.

Specifically, educational institutions must assure that:
1. All environmental engineering education is based on a solid framework which includes an understanding of biological systems, natural and physical processes, and human institutions.
2. Environmental engineering education stresses the ability to identify and quantify all desirable alternative courses of action.
The objectives of this guide are to assist in the accreditation procedures in the following manner:

1. Provide a guideline for minimum acceptable standards for recognition of environmental engineering programs.
2. Establish criteria for acceptable programs in environmental engineering compatible with the broader criteria established by ECPD.
3. Insure that graduates from Environmental Engineering programs have successfully completed acceptable curricula under the direction of competent faculty.

Ecology Movement.

The environmental engineering profession has not been identified with political movements. Nevertheless, what happens on the political side determines the legislation which creates the markets for environmental engineering. In an AEEP Newsletter article of June, 1976, President Paul King recognizes the important role of the movement. His remarks are abstracted as follows:

There was often the tendency to overkill, e.g., both the blanket condemnation of the establishment and the neglect of economics. On the other hand, we owe much to the activists, as their efforts led to ultimate enactment of legislation that placed the challenge of achieving long term environmental improvement squarely before us. Although the need to temper ideals with common sense economics is evident, we must not lose the momentum generated by the ecology movement. If we allow the gains of the ecology movement to slip away we will live to regret it the next time we are so noticeably in the public spotlight.


Clearly, the services of a professional librarian was needed to develop an organizing scheme for the archives. In 1977 the Board approved Hendricks contracting to have the job done. Arrangements were made with Kurt Keeley, now Director of Information Services, AWWA. The task required over two years on a time available basis in which Kurt Keeley read correspondence, examined newsletters, reviewed Board minutes, etc., until he had a "feel" for the organization. From this came a design for the AEEP archives. The job was completed in October, 1980, and Hendricks presented the design to the Board under Presidents Roger Minear and Ben Dysart. The board suggested presenting Kurt Keeley with a plaque of appreciation for his effort, in addition to enumeration for his services.

With the completion of the project the AEEP Archives were functional. The value of the project to AEEP as an organization has been recognized by the boards and presidents from 1975, when the need was identified, through the present. The utility of an archives to an organization is inestimable, not only for its practical functions, but its role in preserving the spirit of the organization as well. The Archives Committee was created by the Board in 1974. The charge was to: "assemble in one location a record of AEEP activities including membership, legal papers, history of the organization, bylaws, boards of directors, members, etc." Appendix H shows the classification structure of the Archives. Using this structure any document should be retrievable with only modest effort.

Archives.

The Archives were passed from Norman Jones to David Hendricks in 1975. The files had grown to such an extent since Norman Jones had first gathered them, that organization was needed. This was brought out by a request in 1976 from David Jenkins for a contract agreement between AEEP and a publisher for the chemistry laboratory manual. To find such a document was not a feasible thing unless one wished to devote several days to the task.
Gerard A. Rohlich, 1967

P. Walton Purdom, 1973

James W. Patterson, 1980

C. Robert Baillod, 1986

Chairs of Seven-Year Conferences
6. CHRONICLE OF ACCOMPLISHMENTS

Membership.

From the first five persons who put down their $100 in the Cincinnati hotel room on September 9, 1963 and the charter membership of 33 on October 1, 1964, AAPSE/AEEP grew steadily. Table 6-1 shows the membership growth of the organization from these initial days.

The classes of membership include: member, emeritus, affiliate, and sustaining, which are described in the Bylaws, Appendix B.2. The membership breakdown, by these classes, according to the 1989 Directory was:

<table>
<thead>
<tr>
<th>Membership</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member</td>
<td>331</td>
</tr>
<tr>
<td>Emeritus</td>
<td>16</td>
</tr>
<tr>
<td>Affiliate</td>
<td>61</td>
</tr>
<tr>
<td>Sustaining</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>421</strong></td>
</tr>
</tbody>
</table>

Full membership is restricted to persons of professorial rank in environmental engineering or related fields at academic institutions. Emeritus membership for a retired member requires Board vote. Affiliate membership is for persons having involvement in the field and present or past activity with academic programs. Sustaining membership is for individuals or organizations who have a concern for strengthening academic programs.

The sustaining membership was approved in 1985 in an effort to develop broad involvement of organizations who have concern with the field. The primary objective for establishing this type of membership was to improve communication between environmental engineers in universities and those in practice, resulting in an increase of cooperative efforts among teaching, research, and practice by AEEP members and practicing environmental engineers. President John Andrews undertook a program to develop the membership in this category during his tenure in 1985-86 and was successful in attracting major organizations to express their support for AEEP through sustaining memberships.


---

### Table 6-1 AEEP membership growth, 1963-88.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Month</th>
<th>Year</th>
<th>Number</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>14</td>
<td>Dec</td>
<td>1979</td>
<td>260</td>
<td>Dec</td>
</tr>
<tr>
<td>1964</td>
<td>24</td>
<td>May</td>
<td>1980</td>
<td>290</td>
<td>Dec</td>
</tr>
<tr>
<td>1964</td>
<td>33</td>
<td>Dec</td>
<td>1981</td>
<td>309</td>
<td>Dec</td>
</tr>
<tr>
<td>1965</td>
<td>37</td>
<td>Dec</td>
<td>1982</td>
<td>345</td>
<td>Dec</td>
</tr>
<tr>
<td>1966</td>
<td>55</td>
<td>Dec</td>
<td>1983</td>
<td>346</td>
<td>Dec</td>
</tr>
<tr>
<td>1967</td>
<td>81</td>
<td>Dec</td>
<td>1984</td>
<td>312</td>
<td>Dec</td>
</tr>
<tr>
<td>1968</td>
<td>93</td>
<td>Dec</td>
<td>1985</td>
<td>316</td>
<td>Dec</td>
</tr>
<tr>
<td>1969</td>
<td>105</td>
<td>Dec</td>
<td>1986</td>
<td>396</td>
<td>Dec</td>
</tr>
<tr>
<td>1970</td>
<td>123</td>
<td>Dec</td>
<td>1987</td>
<td>409</td>
<td>Dec</td>
</tr>
<tr>
<td>1971</td>
<td>137</td>
<td>Dec</td>
<td>1988</td>
<td>421</td>
<td>Dec</td>
</tr>
<tr>
<td>1972</td>
<td>152</td>
<td>Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>160</td>
<td>Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>195</td>
<td>Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>225</td>
<td>Sept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>244</td>
<td>Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>256</td>
<td>Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Seven-Year Conferences.

Table 6-2 summarizes the six/seven-year environmental engineering education conferences. This table shows year, location, conference chair, and main themes of each conference.

The first of the seven-year education conferences, the 1960 Cambridge conference, described previously in Section 2.6, was the initiative of ASEIB. The second, in 1967 at Northwestern, saw joint sponsorship by AAPSE and EEIB (Environmental Engineering Intersociety Board - the new name adopted by the ASEIB board February 5, 1966). The Evanston Professors Seminar of May 7, 1965 set the stage for the Northwestern Conference in 1967 and for the joint sponsorship. How this second conference was gestated and how the joint EEIB-AAPSE sponsorship came about from the professors seminar deserve mention. Themes of these conferences are then reviewed, adding to Table 6-2.

Evanston Seminar. A seminar for sanitary engineering professors convened at Northwestern University on May 7, 1965 - a conference that was to end in high drama. The program was devoted “to matters pertaining to organizations of interest to sanitary engineering educators” (AAPSE Newsletter, Vol. 1, No 1, Sept. 1965). The seminar was chaired by Professor Rohlich, pursuant to a meeting of an ad hoc group of professors who met at the Taft Sanitary Engineering Center in Cincinnati in June 1964 at the invitation of Dr. Harry Kramer. At the Evanston Seminar Professor McKee presented a report on the accreditation on graduate programs in sanitary engineering by ECPD. Professor Purdom discussed the pending name change of ASEIB. Professor Kaufman outlined his view on major problems confronting the sanitary engineering profession, e.g., financial support of graduate programs, changes in the PHS and the new FWPCA, the role of the non-engineer, and research needs.

Finally, there was a motion that ASEIB be invited to sponsor another conference on sanitary engineering education. Professor Kaufman spoke to the motion and moved an amendment that such a conference be sponsored jointly by ASEIB and AAPSE. Professor Gioyna seconded the motion for the amendment. Professor McKee opened the discussion stating that AAFSE should never have been established and that its role and activities properly belonged with ASEE, which is represented on ASEIB. Profes-

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Chair</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>Harvard, Cambridge</td>
<td>Thomas R. Camp</td>
<td>Collaboration among schools - Accreditation - Title designation alternatives - M.S. duration/ core courses</td>
</tr>
<tr>
<td>1967</td>
<td>Northwestern, Evanston</td>
<td>G. A. Rohlich</td>
<td>Definition and scope of environmental engineering - Curricula in chemistry, biology - Social sciences, systems - Non-engineering students - Accreditation criteria</td>
</tr>
<tr>
<td>1973</td>
<td>Draxel, Philadelphia</td>
<td>P. W. Purdom</td>
<td>Expanding environmental problems - Forms of education/ training</td>
</tr>
<tr>
<td>1980</td>
<td>U. Toronto</td>
<td>James W. Patterson</td>
<td>Review of quality, practice</td>
</tr>
<tr>
<td>1986</td>
<td>Michigan Tech, Houghton</td>
<td>C. Robert Bailled</td>
<td>Future direction, computer design and operation</td>
</tr>
</tbody>
</table>
Professor McKee moved to table the amendment, which was defeated 18-13, with abstentions. The motion to amend passed and the motion passed. On June 15 President Pearson sent a letter to Dr. Allen Brandt, Chairman of ASEIB, informing him that AAPSE would be pleased to collaborate with ASEIB as co-sponsor.

The critical amendment by Professor Kaufman served to give AAPSE standing and eventually was to lead to AAPSE representation on ASEIB, a fact quite clear to all involved. Then the education conferences were to become primarily initiatives of AAPSE, but with the collaboration of ASEIB.

The Second National Conference on Environmental Engineering Education was held at Northwestern University, Evanston September 6-8, 1967. The education conferences became a tradition, with intervals of seven years, the interval between the 1960 conference and the second one in 1967 at Northwestern.

Northwestern Education Conference. The Second National Conference on Environmental and Sanitary Engineering Graduate Education was held at Northwestern University, Evanston, Illinois, August 27-30, 1967. It was chaired by Professor Rohlich, with W. J. Kaufman and L. G. Rich, Vice Chairs, and a Steering Committee H. B. Gotaas, Joseph McCabe, A. F. Gaudy, J. C. Morris, R. C. Loehr, R. S. Engelbrecht. The conference, with 154 attendees, had an agenda of nine items: (1) the role of the engineer in environmental engineering, (2) the scope of environmental engineering, (3) chemistry in the curricula, (4) biology in the curricula, (5) social sciences in the curricula, (6) planning of environmental systems, (7) non-engineering students, (8) graduate curricula, and (9) criteria and mechanisms for accreditation.

The conference adopted as recommendations (1) and (2) as follows, and had discussion within its task committees enumerated approximately as in (3) - (6) following:

(1) the term Environmental Engineering is the generic designation for (a) sanitary engineering, (b) industrial hygiene engineering, (c) air pollution control engineering, and (d) radiation and hazard control engineering, the four areas defined as environmental engineering by EEIB,

(2) Environmental Engineering is defined: Environmental Engineering is that branch of engineering that involves the application of scientific principles to the prevention, control, and management of environmental factors that may influence the physical and emotional health of man and his well being,

(3) chemistry should include a basic course of fundamentals review, chemical thermodynamics, equilibria, kinetics, and surface and colloid chemistry; a laboratory course, and incorporation of coagulation, adsorption, ion-exchange, membranes, oxidation, disinfection, corrosion, and aerobic and anaerobic degradation in a course on unit processes,

(4) biology should include basic concepts and a working knowledge of the subject, to be completed with a core course with a second applied course,

(5) social sciences, particularly the areas of public policy, law, institutions, economics, planning, public administration, etc., are important components of engineering practice, but should not supplant any of the present courses for the master's program where specialization is required, and should be encouraged in doctoral programs where greater breadth is feasible,

(6) systems analysis was recognized as a field of study that ought to be incorporated in the curricula, but how to find time to do this at the masters level was the dilemma,

(7) non-engineers seeking an engineering degree should complete undergraduate preparation in mathematics, chemistry, fluid mechanics, engineering sciences, and pertinent engineering analysis and design courses, and schools should provide applied science degrees for non-engineering students, where such remedial work would not be required,

(8) curricula for the masters degree should require a calendar year and include: theory and design of unit operations, unit processes, lab for these courses, chemistry, biology, microbiology, and electives.

(9) accreditation was initiated by EEIB in 1959 and in 1966 a total of 15 programs were accredited, but in contrast to the 1960 conference when accreditation was supported, the year 1967 saw considerable division of opinion, and so the conference recommended that accreditation continue to be offered to those wishing to seek this recognition.
The conference also adopted the resolution that the master's degree be considered the minimum level for entry into all fields of environmental engineering. Also Dr. Harry Kramer, USPHS, suggested that a manpower study be conducted by EEIB-AAPSE jointly. But a notable development was that the designation environmental engineering was dealt with for the first time, becoming a defacto item on the agenda, following the lead of EEIB who adopted the designation on February 5, 1966. In the words of Patterson and Minear (1980), this conference established the concept that environmental engineering was interdisciplinary based upon engineering and applied sciences for which man and his well being are the principal focus. Indeed, following the Conference, the term environmental engineering became the generally accepted designation for the field; the Conference reinforced the trend set by EEIB when its name change was adopted.

Development of Figure 6-1 was another contribution of the Conference, coming from the Task Committee on Social Sciences chaired by John Logan, president of Rose Polytechnic Institute. Figure 6-1 articulates the concept of how most curricula are constructed, building upon a core, but permitting major areas of emphasis. Although at the masters level room is available only for the core courses, with perhaps limited courses in the specialty, at the doctoral level one or more majors may be constructed after the core is completed.

Figure 6-1 Core courses in environmental engineering with specialty areas building from the core (adapted from Report of the Northwestern Conference on Environmental and Sanitary Engineering Graduate Education, 1967)
Another outcome of the Northwestern Conference was the expression that other conferences were needed to consider further the issues raised and to deal with new ones. Expectations of the conference thus set the tradition that further conferences would be held, although the six/seven year interval had yet to be formalized.

Drexel Education Conference. The Third National Conference on Environmental Engineering Education, was held at Drexel University, Philadelphia, August 13-15, 1973, and was chaired by P. Walton Purdom. This conference picked up strongly on the theme of environmental engineering in an expanded sense and on the academic preparation for the profession to handle the new dimensions. This is stated succinctly by Chairman Purdom:

"The most significant finding of this conference was the redefinition of environmental engineering. The definition advanced recognizes the new concern for protecting the environment, not just man. It also brings out the realization that the environmental impacts may be global in nature, not just local. While these new issues are recognized, this definition continues to emphasize man's health and well being as a major concern.

Recognition was given to the impact of population growth and urbanization on limited resources and resulting problems in transportation, energy, land use, urban development, and productivity. The environmental engineer was directed to be concerned with the assessment of the environmental quality impacts of these problems and the exploration of alternative solutions. Also, society would benefit by basing public policy decisions on sound technical information supplied by environmental engineers. If the environmental engineer is to respond to these challenges, new approaches to environmental engineering education seem indicated."

The Conference considered four areas of education: graduate, undergraduate, technical, and continuing. A key concern was that the demands of the profession were so broad in scope that one year of graduate education was felt not to be sufficient. Preparation at the undergraduate level was considered essential. On continuing education, the conference recognized that because some of the environmental problems which require solution are without precedent, continuing education programs are essential.

The Conference defined environmental engineering as: "Environmental engineering is that branch of engineering which is concerned with (1) the protection of human populations from the effects of adverse environmental factors (2) the protection of environment both local and global from the potentially deleterious effects of human activities and (3) the improvement of environmental quality for man's health and well being."

The Conference was prophetic in its section on Environmental Quality Goals and Challenges: 1975 - 2000, with sessions on environmental engineering and energy systems, land use planning, the "built" environment, urban and regional development, transportation, and product quality. This expanded theme continued in deliberation of manpower needs, which included: air pollution control, solid waste management, radiological hazard control, and water supply and pollution control.

Figure 6-2 captures some of the themes of the Conference, showing three major domains of environmental engineering, i.e., (1) major professional fields, (2) specialty areas, (3) fields with environmental concerns. The authors, G. P. Hanna, F. Bowerman, E. Hermann, W. Kaufman, G. Rohlich, and A. Rossano, pointed out the difficulty in being qualified in all facets of environmental engineering. Significant problems and their solutions, they stated, are multi-faceted and are comprised of multiple disciplines. "A discipline is generally considered a delimited field of endeavor which an individual masters by concentrated study and application. For a majority of individuals mastering a discipline in early life is likely to enhance their capabilities for managing multidisciplinary enterprises in later life. Accepting this concept leads to the conclusion that education today should be principally in disciplines, although obviously some breadth is needed to place them in context. But again, we must remember that while the disciplines are today larger and more complex and that the interactions between disciplines are legion, the capabilities of the human mind to learn is much the same.
Thus, the 1973 Conference reflected the social climate of the times and established a perspective of environmental engineering that fulfilled the promise of the designation. The conference was a leap forward from the traditions of the pre-1960 years in moving beyond public health concerns and to recognize anticipated global environmental problems.

University of Toronto Education Conference. The Fourth Conference on Environmental Engineering Education was held at Toronto, June 19-21, 1980. James W. Patterson was the Chair of the Steering Committee comprised of P. W. Purdom, R. A. Minear, R. F. Christman, G. P. Hanna, Jr., J. G. Moore, Jr., A. T. Rossano, and R. F. Weston. The persons on the Steering Committee reflected the joint involvement of the two organizations, AEEP and the AAEE (the EEIB had changed its name to the American Academy of Environmental Engineers). The Steering Committee planned the Conference to precede the 10th International Conference on Water Pollution Research, June 22-27, Toronto, and the Annual Conference of the Air Pollution Control Association, June 22-27, Montreal.

The Toronto Conference did not break new ground, but rather was a seminar to take stock of the status of environmental engineering education - both undergraduate and graduate. First four status reports were given: (1) Programs, Degrees and Faculty (R. A. Minear), (2) Student Enrollment Trends and First Employment (P. A. Vestiind), (3) Manpower Needs in Environmental Engineering (E. F. Glynna), and (4) Funding for Graduate Student Support (S. L. Klemetson and G. L. Rogers). Following the status reports the Conference focused on four issues: Excellence in Environmental Engineering Education (P. L. McCarty - C. R. O'Melia), Comprehensive vs Specialists Programs in Environmental Engineering Education (P. L Busch - D. A. Okun), Curricula Balance in Environi-

![Figure 6-2 The domains of environmental engineering (Purdom, et al, 1973)](image_url)
mental Education (E. F. Gloyna - H. B. Cooper), Relationship of Baccalaureate to Graduate Environmental Engineering Education (D. B. Aulenbach - J. P. Heaney); chair and co-chair, respectively are indicated by persons whose names are in parentheses.

The paper by Minear identified 27 schools having significant undergraduate work in environmental engineering. Fourteen institutions awarded a B.S. degree in environmental engineering and thirteen had a baccalaureate major in the field. In graduate education, 89 institutions had programs, with 34 other schools having programs of varying activity. Most of these programs were located in departments of civil engineering, with a few in chemical engineering. Doctorate degrees totaled 85, with degree designations unspecified, 62, and with environmental engineering specified, 15. Masters degree designations were 22 in number, with unspecified, 33; M. S. Civil Engineering, 27; Master of Engineering, 18; M.S. Environmental Engineering, 25; M.S. Environmental Science, 6; etc.

On enrollment, Vestlind reported 696 sanitary engineering students in 1979 and 582 in other environmental sciences and engineering in 52 selected graduate programs. Total enrollment for all programs is summarized in Table 6-3 for the years 1976-79. While the number of full time water and wastewater engineering graduate students declined from about 2,400 in 1971 and 1972 to about 1,000 in 1975, a gradual increase through 1979 is shown. New M.S. students in environmental engineering declined commensurately from about 1,200 in both 1971 and 1972 to about 500 in 1975, showing gradual increase to about 650 in 1979. For employment, the distribution of graduates in 1979 was: government, 37 percent; industry and consulting, 43 percent; academic, 5 percent; continued education, 7 percent; and other, 8 percent. On the numbers of graduates compared with total engineering graduates, Gloyna indicated 1976 total production of engineers as 58,000 engineers, 90,000 scientists, and 862 environmental engineers (309 B.S., 517 M.S., and 36 PhD). And of over one million engineers and scientists working in 1976, environmental engineers accounted for only 9,424. Gloyna indicated that the gap between demand and production was very large, particularly if certain government programs reached fruition. Estimates for professional manpower for 1985 was: wastewater, 8,000; water supply, 6,600; solid waste, 250, and air pollution, 4,800. Table 6-4 by Gloyna, et al, gives another perspective on manpower showing degrees awarded during the 1977-78 academic year. From these data, Gloyna, et al, ask the same question as Camp in the 1960 Conference: How can the educational infrastructure support so few students, with only 517 masters degrees and 36 doctorates? Environmental engineering had 21.6 percent of all civil engineering masters graduates and 13 percent of the civil engineering doctorates. This compared with 40,091 B.S. degrees and 15,736 MS degrees and 2,573 PhD degrees that year in engineering. (Note: the results of enrollment surveys by Paul King reported at the October 3, 1976 Board meeting are as follows: Paul King conducted a 1974-75 Graduate Enrollment Survey. showing new enrollments as: 1971-72, 1271; 1972-73, 1203; 1973-73, 1108; 1974-75, 670. Total enrollment in water pollution control engineering was 2406, 2424, 2211, and 1438, respectively. Total enrollment in air pollution control was 212 and solid waste management 40).

The deliberations of issues resulted in several Conference recommendations. The "excellence" issue was particularly difficult, as "Each tends to judge programs based upon his or her own standards, hopes, and aspirations". The report concluded that diversity in programs is needed and that excellence should be judged by the degree to which a given program attains its own goals. Further, they state: "Excellence means striving towards a high level of performance, and an encouragement of one to achieve the best that is possible." They state that the most obvious lesson from the past decade is that the graduates must be prepared for change, and thus it is necessary to educate students in the fundamental fields of knowledge. They stress that excellence in communication skills as well as technical ability is needed. In some prophetic statements they assert:
Table 6-3 Environmental Engineering Graduate Student Enrollments (Patterson, 1980)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total full-time (environmental sciences and engineering)</td>
<td>2,292</td>
<td>2,519</td>
<td>2,479</td>
<td>2,511</td>
</tr>
<tr>
<td>Water and wastewater</td>
<td>1,015</td>
<td>1,260</td>
<td>1,467</td>
<td>1,440</td>
</tr>
<tr>
<td>Air pollution</td>
<td>173</td>
<td>139</td>
<td>185</td>
<td>157</td>
</tr>
<tr>
<td>Solid wastes</td>
<td>no data</td>
<td>no data</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Water resources</td>
<td>496</td>
<td>492</td>
<td>216</td>
<td>239</td>
</tr>
<tr>
<td>Environmental sciences and management</td>
<td>1,570</td>
<td>1,342</td>
<td>696</td>
<td>650</td>
</tr>
<tr>
<td>Part time students</td>
<td>1,406</td>
<td>1,359</td>
<td>1,463</td>
<td>905</td>
</tr>
<tr>
<td>Federal traineeships</td>
<td>244</td>
<td>232</td>
<td>260</td>
<td>200</td>
</tr>
</tbody>
</table>

Table 6-4 Degrees Awarded In Environmental Engineering 1977-78 (Patterson, 1980).

<table>
<thead>
<tr>
<th>Degree Awarded</th>
<th>Gender of Recipient</th>
<th>Environmental Engineering</th>
<th>Civil Engineering</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>Male</td>
<td>261</td>
<td>7,276</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>48</td>
<td>2,225</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>309</td>
<td>9,501</td>
<td>3.3</td>
</tr>
<tr>
<td>Master</td>
<td>Male</td>
<td>453</td>
<td>2,131</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>64</td>
<td>262</td>
<td>24.4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>517</td>
<td>2,393</td>
<td>21.6</td>
</tr>
<tr>
<td>Doctorate</td>
<td>Male</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>746</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>116</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>862</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is most important that environmental engineers be instilled with the responsibility they have for the maintenance of a safe and wholesome environment. They will be looked upon by society for an understanding of and solutions to environmental problems. They need to grasp the significance not only of the local impacts of pollution, but of the global effects as well. The excellence of the environmental engineering profession will be judged by society by the way the profession comprehends the effects of pollution, by its perspectives on the tradeoffs between control of environmental hazards and other needs of society, and by the solutions it offers to these problems. An environmental engineer is generally regarded as an individual who has sympathy with the need for pollution control, and can be counted upon by society to develop solutions to these needs. Thus, environmental awareness should be part of any program of excellence in the environ-
mental engineering field. Such an awareness is likely to be an obvious part of the lives of the faculty in an excellent program, and will be apparent within the courses taught by the faculty.

Finally, they state that excellence "is measured by the leadership qualities its graduates display in solving environmental problems, and the high quality of performance they display and demand of their peers and subordinates." The Conference moved to accept the report and the position paper.

The position paper by Busch, et al, described the key questions as: (1) Should masters degree candidates be obliged to study in the three fields of water, air, and solid waste management? (2) Should masters degree candidates be obliged to study in fields such as law, public administration, economics, finance, and the social sciences that influence the implementation of environmental activities? Actually, the questions posed the classic dilemma of breadth vs depth and acknowledged that there was no definitive answer but indicated a variety of measures to help. The important issue is that they addressed the concerns and showed that the profession had the needed perspective; but the implementation was constrained by realities of time and resources.

On curricular balance, Gloyna, et al, indicated the kinds of course content that should perhaps comprise a masters degree program for each of the different specialty areas. On the relationship of baccalaureate to graduate environmental engineering education, Aulenbach, et al discussed at length the place of undergraduate environmental engineering programs in the profession. The session produced the most spirited debate in the plenary session, particularly the question of remedial courses that should be required for a non-engineering student who wishes to pursue a graduate engineering degree. The Conference recommendation,

"Graduate degree titles in the environmental discipline should be clear, easily interpreted, and draw clear distinction between science and engineering degrees. An individual receiving a degree with the word engineering in the title shall meet the minimum ECPD/ABET baccalaureate degree requirements."

passed 25-18. Thus, the Conference grappled with one of the issues of recent years on how to accommodate non-engineering students in environmental engineering graduate programs.

In summary, the Toronto Conference took stock of the status of environmental engineering education. Important guidelines and needed philosophy were added to our knowledge capital, thus laying the foundation for policy.

*Michigan Tech Education Conference.*

The Fifth Conference on Environmental Engineering Education was held at Michigan Technological University, Houghton, Michigan, July 21-23, 1986. The Conference Chair was C. Robert Bailod, with Steering Committee: E. Robert Baumann, J. L. Liebman, P. L., Busch, F. G. Pohland, and J. L. Patterson. Again, the Conference was a joint venture between AEEP and AAEE, with the former having the more active role (this is not to indicate an indifferent or passive role for AAEE, but the Conference gradually became an initiative of AEEP after the 1960 Conference, an initiative of ASEIB).

The Conference had three themes: (1) integrated multi-media approaches, (2) computers in environmental engineering education and research, (3) role of design and operation in environmental engineering education. The first two were current problems, while the third was a recurring lament that "we need to be rooted in design".

The keynote address, "A Look to the Future: Environmental Education," by Earnest F. Gloyna and Charles A. Sorber, expanded on the first theme and deserves review as Gloyna and Sorber articulated the challenge to the profession for future years. Some selected excerpts give the tone:

"Engineering education critically needs to be reexamined. Environmental engineering education, in particular, must be given new direction.

We need new vision for the environmental engineering profession. Historically, sanitary and public health engineers have made great contributions to the well being of mankind. Presently, however, there is a widespread perception that environmental engineers are the technologists and
process adaptors of the regulatory process. Now is the time to prepare for the health related engineering challenges of the 21st century. To do so, we must ask what educational base is required. What educational objectives must be met to sustain academic and professional leadership, not only in the eyes of the professional fraternity, but also by the standards of society at large?

In the past, environmental engineers have responded to obvious pollution problems caused by excessive concentrations of waste from people or industry. Treatment technology is important, but cannot continue to be the dominant driving force for solving environmental problems. The environmental engineers of the future must anticipate potential environmental problems and prevent their reoccurrence, recognize the health effects resulting from environmental insults, apply engineering knowledge across multimedia systems, cooperate with interdisciplinary teams of specialists, and participate in the formulation of public policy.

The period between 1875 and 1925 marked the beginning of the sanitary engineering profession in America. The difference between traditional civil engineering and the new approach to resolving health related problems was the fact that sanitary engineers were interested in understanding health effects in order to resolve the problems through engineering. Having established a remarkable record in public health, and more recently in environmental control, environmental engineering is now embarking upon its third mile. The most difficult challenges for the future environmental engineer will be those that arise from the basic nature of an overpopulated, industrialized society. Growing issues involving multimedia considerations must be addressed. Familiar examples include acid precipitation, residuals management, ocean disposal, water reuse, environmental consequences of biotechnology, and ozone accumulation in the upper atmosphere.

Changing Characteristics. We realize that "hard science" and technology alone may not be adequate to meet the challenges of the future. Economic, social, legal, and ethical considerations most assuredly will be involved in making the societal judgements of tomorrow.

Because of the complexities inherent in global industrialization and population growth, no area of societal adaptation will be harder to predict than the environmental accommodations that will be required. It is probably safe to say that almost anything and everything will happen. In all probability, environmental regulation will be more extensive and the development of new technologies will accelerate. However, if there is a lesson to be learned from history, we may surmise that many older technologies will prevail. It is not likely that there will be a single, best concept for pollution control. Alternative management and treatment systems will proliferate. The problems, remedies, designs and operations will become more complex. A higher level of education will be needed to satisfy the requirements of design, management, and operations. A broader education will be needed to interact effectively with others involved in the decision making process.

Global Environmental Issues. Global issues will profoundly influence the future training of the environmental scientist and engineer. Just as waterborne diseases caused the early civil engineers to turn from bridge building to public health engineering, environmental engineering education must not neglect the sanitation problems of the emerging nations. Environmental degradation, rapid resource depletion, and food shortages associated with unfettered population growth are the larger manifestations of the infrastructure problems of developing societies. Environmental engineers will be asked to address the cause and effect relationships concerning resource deterioration and use. Their educational level must be up to the task.

In all societies, developed and developing, public policy will continue to be formulated by public reactions based on perceived remedies. New technical approaches will be needed to solve these vexing problems, and new insights will be required to assess environmental impacts accurately. The challenge is immense, for we live in a world where a country can deplete its mineral resources, mine its aquifers, cut down its forests, erode its soils, pollute its waters, virtually eliminate its wildlife and fisheries, and yet show that its measured income rises steadily as its assets are depleted.

The point is that the solutions to tough environmental problems do not depend solely on good science and engineering. Questions of social consciousness are akin to the problems that faced the public health engineer several decades ago. It
is unfortunate that an environmental engineer today may spend a lifetime worrying about kinetics of a single treatment process without being concerned about health effects.

Criteria for Engineering Education. Environmental engineering education must satisfy three criteria:

1. Does it provide a foundation for a lifelong educational process?
2. Do the formal courses and the research experiences enhance the total body of knowledge?
3. Does the study of environmental engineering ultimately contribute to an improved quality of life?

As usual, a balance must be sought between:
- Theoretical and applied subjects;
- Engineering, life sciences, physical sciences, social sciences, and management disciplines;
- State-of-the-art technical knowledge and basic communication skills.

Curricular Balance. Students should be taught to think and communicate. Are these goals attainable? Unfortunately, overspecialization at the undergraduate level may produce expert technicians instead of thinking engineers. The typical civil engineering curriculum lacks several components required for a complete understanding of environmental engineering issues, including organic chemistry, microbiology, biochemistry, environmental regulations and policy, biology, and ethics.

Conclusions. As we approach the 21st century, a new concept in environmental engineering education must be developed. The environmental engineering student of the future must be able to seek out non-traditional approaches to solving traditional and unforseen public health and environmental problems.

While Gloyna and Sorber have suggestions of curricular balance, their most important contribution was to keep the issue alive and to articulate the case for redesign. Further elucidation came from the task committee on integrated air-water-land approaches, chaired by P. M. Berthouex, who started by defining the concept and then expanded on characteristics, as in the excerpts following:

An integrated approach to environmental engineering is holistic. It is founded on an understanding of the multimedia behavior of substances in the environment, and it seeks to manage the shifting of problems from one medium to another. An integrated approach incorporates parts into a whole. It seeks a solution that has integrity, that is sound and complete. In terms of basic goals, an educational program with an integrated approach to environmental engineering should:

1. Develop a sound understanding of the materials balance, providing knowledge and skills for systems ranging in size from a single unit process to an extensive ecological complex. Until an accounting is made for all significant components, a problem is not sufficiently defined.
2. Provide general problem solving skills, including how to construct and validate models and evaluate conclusions arising from their solution; how to critically appraise the accuracy of information and the reasonability of assumptions and approximations; and how to assess the need for additional data and design experiments to obtain it.
3. Enhance computational skills, including ability to apply statistical methods, to analyze dynamic systems, and to find optimal solutions.
4. Provide practice in solving a range of realistic problems, including several that involve important links between air, water, and land sectors of the environment, taking into consideration the environmental impact and cost effectiveness of solutions.
5. Develop skill in using information resources: the modern technical library, computerized bibliographic bases, and various chemical and toxicological data bases.
6. Develop the ability to communicate the analysis and solution of problems to a range of audiences.
7. Impart a sense of the role of ethics in engineering decisions.

In many respects these goals are fundamental and applicable in general, whether or not one employs an integrated approach. Elements of each goal are probably more essential to the integrated approach though particularly the following:
(1) systems are more varied in terms of size and complexity;
(2) the information base is growing so rapidly in terms of journal articles and tabulated data that manual search techniques may not be sufficient, and students are not able to search effectively without direction and practice;
(3) data required to construct and validate models dealing with intermedia effects are often not available and no historical records of performance exist with which to construct empirical models, making it essential to learn to critically assess assumptions and approximations;
(4) most traditional courses concentrate on steady state solutions for process design, but in the multimedia setting system dynamics are often of interest; and
(5) students must solve some fairly complex and realistic multimedia problems, including searching for data and making approximations where usable data do not exist.

The symposium on design and operation, chaired by Davis L. Ford, was a subject that has been of continuing interest, especially to the consulting engineering community. Design was defined by ABET as “the process of devising a system, component, or process to meet desired needs. It is a decision-making process (often iterative) in which the basic sciences, mathematics and engineering sciences are applied to convert resources optimally to meet a stated objective. Among the fundamental elements of the design process are the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation.” Course outlines used at several universities were reviewed and discussed to provide some case examples.

The task committee on computers in environmental engineering education and research provided a comprehensive review of the subject and outlined goals for student skills in this area. The committee prepared a software exposition which utilized the AEEP Manual (see Crittenden, 1986, Section 5.5) The committee reviewed uses of computers ranging from word processing, spreadsheets, graphics, control of laboratory equipment, modeling research, programming, and software development for complex problems.

Research Needs Conferences.

The fundamental research needs conferences were started in 1977, responding to a problem that the EPA research establishment was changing course to emphasize short-term projects to support their regulatory mandate. This was at the expense of basic research and would mean a drying up of the knowledge fund to permit economical implementation of the national clean-up. A second conference was held in 1982 and a third in 1988, all funded by NSF, under the program directed by Edward H. Bryan. While NSF had taken up some of the slack, its program was underfunded.


This conference was organized to direct attention of those in government, in academia, and in the private sector to the need for increased efforts in long-term, fundamental research on water and wastewater treatment systems. Moreover, it is hoped that through the definition of specific research needs, a larger portion of the research talents in the environmental engineering profession will be diverted to fundamental research thus reversing the trend toward short-term, immediate application research which has come to dominate the field. Although no one questions the need for short-term research, a better balance between the two types is necessary if the problems of water pollution control are to be solved.

The conference covered both water treatment and wastewater treatment, documenting thoroughly the need for fundamental research. The conference goal coincided with the emerging recognition that EPA funding for research was declining. The days of close ties between academia and the federal organizations for water and wastewater research had been on the wane since the shift of pollution control responsibili-
ties from the USPHS Division of Water Supply and Pollution Control to the Department of Interior, and then further declined with the advent of EPA in 1970, which had the mandate to regulate, and all research was to support that mandate. This coincided with the decline in EPA training grant monies since about 1975, a program that was started during the late 1960's. The new EPA policies were not cognizant that the foundation of practice then emerging was built on the knowledge developed in academia during the 1960's. The new policies were directed toward short-term immediate payoff kinds of projects, with some having a six month performance period. Most such contracts went to a new breed of consulting firm which responded to Request for Proposals published in the Commerce Business Daily.

1982. In the Foreword to the 1982 conference, held December 1-2, again in Arlington, Co-chairman DiGiano reiterated some of the remarks of Andrews:

The Nation set upon a course of action in the 1970's which was aimed at improving the quality of its water resources. After several changes in this course of action, and more likely in the near future, the pathway is still uncertain. In fact, the complexity of the problem seems to grow as more is learned about the interactive forces of economics, technology and politics. It is clear, however, that without better knowledge of the fundamentals of water and wastewater treatment technology, government decision-makers at the highest level cannot act with confidence. There is great concern that over-emphasis of applied research in support of the federal regulatory effort is detrimental to the long term goals of the nation's environmental policy. For without sustaining fundamental research, new and innovative ideas for design and operation of water and wastewater treatment systems will not evolve. As noted in this conference, even conventional technology is not well understood; with greater emphasis on fundamental research vast improvements in performance may be possible.

This conference had 21 papers, each with specific detail, grouped into seven sessions, and with discussion following. The closing remarks by David Jenkins reiterated the theme, but pointed out (excerpting from his remarks in Switzenbaum, 1982) that:

The conduct of fundamental long range research is difficult because of the general "crisis" approach to technological problems and goals. We often wait until it is necessary to devise a crash program to solve a problem, (i.e., the space race, the war on cancer, the energy crisis, zero discharge) rather than working steadily over the long range to provide amelioration instead of quick fixes. One of the objectives of this conference must be to provide justification and delineation for the particular fundamental research that we in the environmental academy and practice desire to conduct.

Themes identified by Jenkins were: basic properties of systems, behavior at and across interfaces, dynamic state rather than steady state and heterogeneous rather than homogeneous systems, particles, genetic modifications of microorganisms, modeling, involvement of pure scientists, and communication of results. He noted that five years prior there was no mechanism for peer-reviewed fundamental research to be supported by EPA. The NSF environmental engineering/water resources program was in its infancy. Now we have both and the hope for their continuation and growth.

1988. The 1988 Conference, held November 13-15, 1988 in Arlington, was entitled: "Fundamental Research Directions in Environmental Engineering", and was chaired by Richard G. Luthy, with sponsorship by NSF and supplemental funding by EPA Office of Research and Development. The objectives were: (1) to identify long terms directions in environmental engineering research, and (2) to promote exchange of ideas from different disciplinary perspectives.

The conference theme was broad, looking at all aspects of the air, water, and land environments, and included contributions from air pollution and an array of disciplines including social scientists. The conference was a response to the current trend in environmental quality control which recognizes the multi-media nature of pollution problems, involving understanding
of trade-offs and the assimilation of an even larger array of disciplines in problem solving, and the need to have a broad-based integrated approach. James J. Morgan, Conference Co-Chair, summarized the main themes (Luthy, 1989): “we now study a wider range of environmental processes than ever before - over a wider range of spatial and temporal scales and with a wider range of disciplinary skills.

The 1988 Conference seems to be reaffirming the trend toward broadening the scope of environmental engineering to address the present and looming problems of global scale pollution. The profession seems to be moving beyond the focused research toward the broad comprehensive requirements of current problems.

Workshops.

The first AAPSE workshop, of what was to become a tradition, was held at a resort motel “overlooking beautiful Lake Travis”, 20 miles from Austin, Texas. The workshop, chaired by Professor Eickenfelder, had thirty attendees and was on the topic of biological waste treatment (AAPSE Newsletter, Vol. 2, No. 1, September, 1966). The workshop proceedings remain a significant contribution to the literature on the subject.

Professor D. R. Washington chaired the Second Annual AAPSE Workshop, June 5-7, 1967 on the subject of chromatography. A syllabus was produced, contributing to the beginning litany of AAPSE literature.

Over the years since the first AAPSE Workshop in 1966 one to two, and occasionally three, have been held each year. In the early years the workshops were held in various places having some resort appeal, but after about 1976, the workshops were associated mostly with conferences such as the Purdue Industrial Waste Conference in May, the American Water Works Association Annual Conference in June, and the Water Pollution Control Federation Annual Conference in October. A listing of these workshops is given on the spreadsheet summary of AEEP history. Topics have included: systems analysis in sanitary engineering, environmental impacts, contaminant transport in ground water, anaerobic treatment processes, engineering the biofilm, solid wastes management, etc. A notable workshop, a Bahamas cruise in December, 1973, was on mathematical modeling in environmental engineering, organized by Thomas Keinath and Marty Waniekista. While the proceedings resulted in a published book (Keinath, I. M., and Waniekista, (Eds.), Mathematical Modeling for Water Pollution Control Processes, Ann Arbor Science Publishers, 1975), the workshop was notable also because of the special good times provided by the cruise format.

Publications.

AEEP publications are listed in Appendix G and number some 39. These publications range in content from the AEEP Registers of Graduate Programs, Directories of Membership, laboratory manuals, manpower needs reports, and proceedings of workshops and conferences.
Distinguished Lecturers.
Distinguished Lecturers.

The roster of Distinguished Lecturers is given in Table 6-5. The program started with a Distinguished Foreign Lecturer, and in 1978 the program was alternated between American and foreign lecturers.

Awards.

Presently, AEEP sponsors four awards. These include the Engineering Science Award for Best Doctoral Thesis, the CH2M-Hill Award for Best Doctoral Thesis, the AEEP Outstanding Paper Award, and the Award for Distinguished Service [there is no record that the latter was implemented]. The Best Doctoral Thesis Award evolved from the former Award for Excellence in Sanitary Engineering Education.

<table>
<thead>
<tr>
<th>Year</th>
<th>Lecturer</th>
<th>Institution</th>
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<tbody>
<tr>
<td>1969</td>
<td>A. L. Downing</td>
<td>Water Pollution Research Laboratory, Stevanage, England</td>
</tr>
<tr>
<td>1970</td>
<td>Elie Eichenberger</td>
<td>Institute for Water Treatment, Waste Water Disposal, and Stream Purification, Zurich</td>
</tr>
<tr>
<td>1970</td>
<td>Karl Wuhrman</td>
<td>Institute for Water Treatment, Waste Water Disposal, and Stream Purification, Zurich</td>
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<tr>
<td>1971</td>
<td>K. J. Ives</td>
<td>University College, London</td>
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<tr>
<td>1972</td>
<td>G. V. R. Maris</td>
<td>Univ. of Cape Town, South Africa</td>
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<tr>
<td>1973</td>
<td>Klaus H. Imhoff</td>
<td>Rhine River Commission, Germany</td>
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<tr>
<td>1974</td>
<td>Kjell Baalsrud</td>
<td>Norwegian Institute for Water Research, Oslo</td>
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<tr>
<td>1975</td>
<td>No Lecturer</td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>Paul Harremeres</td>
<td>Technical University of Denmark</td>
</tr>
<tr>
<td>1977</td>
<td>C. F. Forster</td>
<td>Wessex Water Authority, Bristol, England</td>
</tr>
<tr>
<td>1978</td>
<td>Richard Speece</td>
<td>Drexel Institute of Technology, Philadelphia</td>
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<tr>
<td>1979</td>
<td>Roger Perry</td>
<td>Imperial College, London</td>
</tr>
<tr>
<td>1981</td>
<td>Werner Stumm</td>
<td>Swiss Federal Institute of Technology, Zurich</td>
</tr>
<tr>
<td>1982</td>
<td>Charles O'Melia</td>
<td>Johns Hopkins University, Baltimore</td>
</tr>
<tr>
<td>1983</td>
<td>Donald Mackay</td>
<td>University of Toronto</td>
</tr>
<tr>
<td>1984</td>
<td>Perry L. McCarty</td>
<td>Stanford University</td>
</tr>
<tr>
<td>1985</td>
<td>Heinrich Sontheimer</td>
<td>Universitat Karlsruhe, Germany</td>
</tr>
<tr>
<td>1986</td>
<td>Donald O'Connor</td>
<td>Manhattan College, New York City</td>
</tr>
<tr>
<td>1987</td>
<td>Francois Fiessinger</td>
<td>Lyonnaise des Eaux, Paris</td>
</tr>
<tr>
<td>1988</td>
<td>David Jenkins</td>
<td>University of California, Berkeley</td>
</tr>
</tbody>
</table>
Engineeering Science Award. The Engineering Science Award was an initiative of Harvey Ludwig. In a memorandum of April 20, 1965 to President Earnan Pearson, he offered to underwrite a prize to a “meritorious individual” in the amount of $500 per year. At its October 12, 13 meeting in Atlantic City, the Board deliberated at some length the pros and cons of a prize, and by a four to three split vote, accepted the offer. The questions had to do with whether a prize would help or hurt APPSE’s image, the kind of prize, criteria to be established, and how to identify candidates. To address these questions, President Pearson appointed a committee of Professors Kaufman, Krenkel, and Gloyna, which was expanded to include Professor Frank Agardy of San Jose State as chair. Warren Kaufman’s November 5 memorandum to Gloyna and Krenkel gave an initial outline for the award criteria. Kaufman was careful not to exclude chemists and biologists in the criteria as they were considered an integral part of the profession, a point made clear by the founders when the name AAPSE was formulated. At the same time in another November 5 letter, Warren Kaufman, who was then on sabbatical leave at Harvard, replied to an October 17 letter from Harvey Ludwig to Earnan Pearson. President Pearson replied in an October 20 letter with copy of the Ludwig letter forwarded to Warren Kaufman for response. Harvey Ludwig sent back to Warren Kaufman on November 8 his ideas (hand written on a sheet of yellow paper with blue grid) on the prize. His note, along with Warren Kaufman’s November 5 letter, is worthy of reproduction in their entirety (see copies in Appendix E.1, Letters 2 and 3, respectively). In this letter he reveals his insights into the profession, his vision for AAPSE, the role of the prize in identifying AAPSE with the idea of “excellence”, and some of his philosophy. Pertinent excerpts from this letter are:

(1) As is the case in virtually all fields of activity, most things are poorly handled. So it is with prizes, which have lost favor because of two reasons: (a) poor selection committees, so that the prize more often than not goes to the wrong person (not so much for political reasons as because of ignorance of members of the prize committee and

of those selecting said members - I’ve been on a couple of prize committees where the [other!] members knew zero of the subject), and (b) a plethora of prizes, without cash, so that, instead of advancing the professional stature, they lower it. The Nobel Prize, No. 1 symbol of stature, would have no stature if the cash with it had been nothing (or $50) instead of $50,000. We’ve got to hammer in the concept that professionalism aint professionalism without cash.

(2) A fundamental purpose of AAPSE is to show professional leadership, thus elevating the profession, not to act like other outfits. On the subject of prizes, AAPSE can do this by (a) making sound selections (especially by recognizing the real contributor), and (b) providing some significant cash. Hence I’m all in favor of the prize by AAPSE as one good means of demonstrating your superior status. I’m dead serious about this. AAPSE will succeed only to the extent it does act in a superior (and non-ordinary) way.

(3) I don’t think a prize every year will do any more than one every two years. Its like a newsletter. We put out our ES newsletter every four or five months. I doubt putting it out twice as often would help. However, I’m not unhappy with an annual prize.

(4) As to criteria, I’d suggest a point system as follows, with 100 points maximum score.

(a) 50 points for academic achievement (30 research and/or engineering, 20 teaching).

(b) 50 points for professional achievement, i.e., any acts serving to advance the status of sanitary engineering - for the whole profession, not just for the guy himself. Our field is sorely lacking in this kind of dedicated effort. We need (b) more than (a) from the professors who set the “pace” for the rest of us. My “analysis” for the reasons for the “decline” of sanitary engineering stature since World War II - in the period money came into the field is that the primary culprits have been the professors, who have not set the pace for the field. In my opinion, professional excellence begins with the academic set-up, and without this we’re licked. Thats why AAPSE is more important than ASEIB. AAPSE can make ASEIB work, but not vice versa. If AAPSE members are to “analyze” things in the traditional (mediocre) way, then AAPSE will be just another “no good” outfit (and not fit incidental to give out cash prizes).
In other words, Harvey Ludwig was identifying a point of leverage to help propel the profession as a whole toward providing the leadership needed to handle the national environmental challenges that were to come. This was the academic sector of the profession, and AAPSE was the vehicle. Then to insure that excellence was to be the guiding force within AAPSE a properly conceived prize would convey such values. His associations with Earman Pearson, Warren Kaufman and other Board members and persons in the academic profession exemplified the kind of leadership he had in mind.

Warren Kaufman responded to some of Harvey’s points and concerns in a November 5 letter. Of course, Warren Kaufman, as an articulate, systematic, and savvy researcher, teacher, and active professional, exemplified everything Harvey Ludwig thought needed from the academic sector. The dialog continued in the context of Warren Kaufman making consulting visits to Venezuela and Guatemala, and of Harvey Ludwig’s travels to Moscow and Rio. The dialog for the prize resulted in Board approval of “criteria”, however, given in Appendix E.1, Doc. 3. In the meantime, the new AAPSE president, Earnest Gloyna accepted the first $500 in prize money from Harvey Ludwig, with the first prize year beginning January 1, 1966. Also at the beginning of his tenure as President, Earnest Gloyna named additional members of the Awards Committee, and Professor Frank Agardy was named co-chair of the committee. In an April 5 letter to Warren Kaufman, Frank Agardy noted the difficulty of the assignment, particularly with respect to evaluating teaching.

The Committee generated a slate of outstanding candidates, which was no easy task based upon the documentation required and with the age limit of 37, those who stood out were limited. Warren Kaufman insisted also that the decision was to be based upon the recommendations and the documentation available to the Committee, to reduce the influences of bias from committee members. The culmination of this process was the recommendation to the Board, on September 27, 1966 at Kansas City, that Professor Perry McCarty receive the award.

While the Committee and the Board had intended that the award be made at the WPCF Annual Conference in Kansas City, Professor McCarty could not attend and so the presentation was made on May 9, 1967 at the Purdue Industrial Waste Conference, but with the inscription date, 1966. Although the award was established as the “Award for Excellence in Sanitary Engineering Education”, the inscription on the plaque was: “American Association of Professors in Sanitary Engineering - DISTINGUISHED FACULTY AWARD”. The award was to be biennial with specification that the sponsors were AAPSE and Engineering Science, Inc. Appendix E.1. Doc 3 contains the final criteria for the award as developed by the Committee. As a matter of interest, several of the letters have indicated the award as the “Ludwig Award” in handwritten notes for filing purpose.

In February, 1972, President John Austin appointed Professor Fred Pohland as Chair of the Awards Committee. In a June 29 letter to the Committee he queried the members’ opinions on: continuation or substitution, single source financial support, size of the award, selection procedure, purpose of award, etc. This was a charge from the Board that the premises of the award be reviewed. Earnest Pearson’s response, as a member of the Committee, favored a $5000 award and increasing the age to 40. On the difficulty of the selection process, he stated: “The problem of selection of the ‘winners’ will always be with us and will be difficult”. Dean Earnest Gloyna was another who gave strong support for the award, and queried whether it would continue to be supported by Engineering Science, since Harvey Ludwig was not associated with the company. Such assurance was given, however; by Robert L. White, President. Fred Pohland submitted his report on September 21, 1972. The Board continued debate and assigned the issue to the next Awards Committee.

On December 10, 1973, Robert L. White, President of Engineering Science, Inc., replied to Professor David Jenkins, University of California, on the status of the award. His recommendations were: (1) to make the award annually, (2) the award would be for the best doctorate thesis relevant to practice, and (3) the candidate and the
Awards for Excellence
Table 6-6 Awards for Excellence in Sanitary Engineering Education

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>Perry McCarty</td>
<td>Stanford University</td>
</tr>
<tr>
<td>1968</td>
<td>Walter J Weber, Jr</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>1970</td>
<td>Richard Speece</td>
<td>Univ. of Texas - Austin</td>
</tr>
<tr>
<td>1972</td>
<td>Charles O'Melia</td>
<td>Univ. of North Carolina</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Student</th>
<th>Professor</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>Douglas Merrill</td>
<td>Roger Jordan</td>
<td>Univ. Colorado</td>
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<tr>
<td>1975</td>
<td>William Snodgrass</td>
<td>Charles O'Melia</td>
<td>North Carolina</td>
</tr>
<tr>
<td>1976</td>
<td>Michael Stanstrom</td>
<td>John F. Andrews</td>
<td>Clemson</td>
</tr>
<tr>
<td>1977</td>
<td>Bill Batchelor</td>
<td>Alonzo Lawrence</td>
<td>Cornell</td>
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<td>1978</td>
<td>Mesut Sezgin</td>
<td>David Jenkins</td>
<td>U. California</td>
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<td>1979</td>
<td>Bruce Rittman</td>
<td>Perry McCarty</td>
<td>Stanford</td>
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<td>1981</td>
<td>Antonio O. Lan</td>
<td>David Jenkins</td>
<td>U. California</td>
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<td>1982</td>
<td>Chia-Hwa Yang</td>
<td>Richard Speece</td>
<td>Drexel</td>
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<td>1983</td>
<td>E. J. Bouwer</td>
<td>Perry McCarty</td>
<td>Stanford</td>
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<td>1985</td>
<td>Arthur Badhr</td>
<td>M. Corapcioglu</td>
<td>City College NY</td>
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<td>1986</td>
<td>W. Clarkson</td>
<td>W. J. Jewell</td>
<td>Cornell</td>
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<td>1987</td>
<td>David Dzombak</td>
<td>M. M. Morel</td>
<td>MIT</td>
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<td>1989</td>
<td>Cheng - Fang Lin</td>
<td>Mark M. Benjamin</td>
<td>U. Washington</td>
</tr>
</tbody>
</table>

advisor would share the award with $500 each. The Board at its December 13-14, 1973 meeting in Chicago, adopted the idea, with the judges to be Robert White, of Engineering Science and two AEEP members, David Jenkins and Vinton Bacon.

The first such award was given September, 1974. Table 6-7 is the list of awardees for the “best thesis” award. Getting this new award underway required time for coordination and to develop new rules and so 1973 was a void and the first award was in 1974. Although David Jenkins had tried to get the announcement in the newsletter, in a letter of December 19, 1973, there was evidently some lag in decision making or implementation, and so the first award was in 1974. The rules for the award were enumerated by David Jenkins in a February 3, 1975 letter to President Wesley O. Pipes [File 6.4(10)]. By 1982, the amount of the award was $1000 each for student and advisor. In 1986, Engineering Science changed the award to a biennial interval.

**Nalco Awards.** In 1978 Nalco indicated interest in celebration of its 50th year by establishing two research awards, one for chemical treatment of industrial wastes, and another for municipal water and wastewater treatment. The first award in the fall of 1978 was to Richard Luthy/ Robert Selleck, University of California. The award was $2500 to be divided between the student and advisor. The second award in 1979 was to Wei-Chi Ying/Walter J. Weber, Jr. of the University of Michigan. In 1980, the award was to R. Bruce Robinson/E. Robert Baumann of Iowa State University. In 1982 the award was to R. W. Walters/Richard Luthy of Carnegie-Mellon. The award was discussed several years but experienced difficulty in attracting sufficient entrants, attributed to the specialized scope of the award and was dropped.
**CH2M-HILL Award.** In 1988, CH2M-Hill joined in sponsoring another AEEP Best Doctoral Thesis Award equal in stature to the Engineering Science Award. Each award would be for $1000 to the student and $500 to the faculty advisor. The first awardees were J. Tobaison and C. O'Melia of Johns Hopkins University.

**Outstanding Paper Award.** In January 1982, President Fran DiGiano proposed an AEEP Outstanding Paper Award. Joe Sherrard headed a committee to set up guidelines. The paper was to be one that stood the test of time, interpreted to be more than five years since publication. It was perceived to become AEEP’s most prestigious award. The first in 1983 was for the Stumm and Morgan 1962 paper, Chemical Aspects of Coagulation. Table 6-8 lists the awards through 1988.

**Outstanding Service Award.** In a September 4, 1973 letter to President Richard Dick, Vice President Joe Middlebrooks proposed a Board of Director’s “Outstanding Service Award” to recognize the particularly outstanding contributions of members in service to AAPSE. The first was presented to Tom Keinath and

*Glen Daigger presenting 1989 CH2M-Hill Best Doctoral Thesis Award*
Table 6-8 AEEP Outstanding Paper Awards, 1983-88.

<table>
<thead>
<tr>
<th>Year</th>
<th>Recipients</th>
<th>Paper</th>
</tr>
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</table>

Marty Wanieli at the AEEP open meeting in Cleveland in October 1973, for their Nassau Workshop on Mathematical Modeling in Environmental Engineering. There has been no mention of this award being continued.

Testimonies.

Congressional testimonies have been continuous beginning with the statements of Warren Kaufman in 1963 on Senate Bill 649, continuing with Earman Pearson in 1964 on the pending legislation on pollution control, and in 1966 with Earnest Gloy on the reorganization of the USPHS. Then in the 1970's, Presidents Baumann Richard Dick, Wesley Pipes, and Bruce Hanes gave testimonies in 1969, 1970, 1972, 1973, and 1975, respectively, with the latter spending a year in Washington trying—all to try to arrest the phase-out of the training grant program. The October 3, 1976 Board Minutes give a report by Bruce Hanes that his testimony had resulted in $4 million for academic training for FY1977, funds that EPA wanted to divert from the program. Richard Dick (1989) indicated that the testimonies were successful in delaying, but not stopping the phase-out of the training grant program, which continued to about 1980, with reduced funding each year.

In the 1980's the testimonies, by Presidents Francis DiGiano in 1982 and Richard Luthy in 1988, supported increased funding for the EPA Exploratory Research Grants Program. These efforts, and communications with the agencies, have been successful as the budget was increased to $18 million in fiscal 1989 from an essentially "bankrupt" program of only two years earlier (Luthy, 1989a). By bankrupt Luthy explained (1989b) that the program had had no new starts and the projects that were continued from previous years had to be funded by borrowing from other funds and considerable effort was needed just to keep the program alive. The goal of both the Exploratory Research Program and AEEP is to see a budget of $50 million to support 500 additional research projects and 750 graduate students (Luthy, 1989b). Funding at this level has not been seen since the 1960's (considering inflation also). It has the potential to revitalize the academic research establishment so that it can help to support the continuing programs in pollution control and the new political initiatives in the environment.

As noted, the practice of the late 1970's and the 1980's was the research of the 1960's. Perhaps the billions spent in the hazardous wastes programs would have been spent more efficaciously if supported by a research foundation, vis a vis moving into action phases so quickly.
Bylaws.

The first bylaws were adopted on December 5, 1963, with amendments in 1967, 1968, 1972, 1977, and 1985. The name change from AAPSE to AEEP was August 1, 1972. The AEEP Bylaws, as amended through 1985, are in Appendix B.2.

Committees.

AAPSE started immediately with some fifteen committees. The committees disseminated participation to most of the membership and their enthusiastic taking charge and initiatives gave a great leverage in scope and effectiveness to AAPSE. Appendix A.3 lists the committees active in 1988. As noted, the standing committees were AAEE Liaison, AWWARF Liaison, Archives, Arrangements, Audit, Awards, Bylaws, Computer Software, Distinguished Lecturer, Education, 1990’s Education Planning Conference, Enrollment Survey, Legislative Analysis, Membership, Newsletter, Nominating, Publications, Register, Relations With USANC, Research, Sustaining Member Liaison, WPCF Liaison, Water Quality 2000 Liaison. Ad Hoc committees were: Hazardous Wastes and Curriculum Survey.

The effectiveness of AEEP over the years since 1964 has been due to the productivity of the committees. The publications tell part of the story, but the AEEP Chronicles Spreadsheet, gives a capsule summary of the organization’s productivity. The workshops, the Registers, the Distinguished Lecturers, the Awards, the liaisons with other organizations, the Education Conferences, the testimonies, etc, are outputs of the committees. The member involvement, the Board and the committees, gives AEEP its vitality and its viability.

Cross Currents With Other Organizations.

AEEP has had continuing formal liaisons and member involvement as individuals with a host of associated organizations and agencies. Associated organizations include: AWWA, WPCF, ASCE, USANC, IAWPRC, AAEE, with formal representation on USANC and the Board of AAEE. Agencies have included the USPHS, especially during the years when it was the primary funding agency in water supply and pollution control research, and then its successor agencies, FWPCA, FWQA, and EPA. In the 1970’s, as the EPA was channeling its funding to regulatory mandates, NSF developed an environmental engineering program, under Dr. Edward Bryan and Dr. Art Ezra, which has been of strategic importance in sponsoring a variety of activities. The role of the EPA Training Grants Program involved two directors who continued the tradition of the 1960’s, Robert Ruhl and Robert Snider, who are now Emeritus Members of AEEP (it may be that these memberships were awarded in recognition of the services of these gentlemen, but the Archives files have not given yet the documentation to this speculation).

As an example of involvements in other organizations, President Earman Pearson was one of the founders of the IAWPR. In addition to being president of AAPSE, he was chair of the American Committee and member of the Permanent Steering Committee for the International Conference on Water Pollution Research. It was his influence by which AAPSE became a sponsoring organization of the 1964 Tokyo Conference of IAWPR (now IAWPRC), involving some awkward moments with WPCF, as indicated in the letters of Appendix E.4.

The story is equally interesting with respect to AEEP becoming a sponsoring organization of AAEE. The early correspondence in Appendix E.3 reveal that the dissension with Professor McKee over whether AAPSE should exist extended to the question of its becoming a sponsoring organization of AAPSE. This had importance in giving AAPSE standing, which was critical during its first years.

An example of a more typical relationship is the relationship of AEEP to WPCF.

The sidebar expands on this, outlining also a brief recounting of the nature of WPCF. These illustrations confirm the contention of the founders that AAPSE was complementary to the existing organizations. Similar discussions could be developed with respect to AWWA and ASCE.
The organization we now call the Water Pollution Control Federation (WPCF) had its origin at a meeting of the Conference of State Sanitary Engineers in Buffalo, New York on October 14, 1926.

George W. Fuller, Willem Rudolfs, and Arthur Bedell were invited to sit in on the discussion, and Dr. Rudolfs argued for a better medium to publish research papers. The concept of the present organization was given by George Fuller, with the following points: (1) a national sewage organization is not feasible because few operators could obtain authorization to attend a convention located several hundred miles distant, (2) desired results could be obtained by strengthening existing state sewage works associations and formation of new ones as municipal officials would be inclined to support trips within one's own state, particularly if requested by the state health department, (3) a journal should be published and distributed to every member at a moderate price. Following this, the movement grew, using the platforms afforded at ASCE and AWWA meetings. In particular, Harrison P. Eddy used his ASCE Committee on Stream Pollution Matters, to discuss the concept. The idea of expanding AWWA was considered not feasible because of financial reasons, as outlined by Abel Wolman. While the deliberations showed prudence and hesitancy in starting another organization, the case in favor was overwhelming and the first meeting of the Board of Control was held in Chicago on October 16, 1928 in which a constitution and bylaws were developed. The organization had 411 members in 1928, 6,346 in 1954, and 16,573 in 1969, and 25,335 in 1976. Registration at the Annual Conferences has been 14,000 in recent years, growing from 4800 in 1968. The rapid growth from 1950 through the present reflected the increasing public awareness of pollution as a national problem, and the Federation became aware of the need for a public awareness program. Recalling the words, however, of Executive Secretary William Wisely, who stated, "the Federation will be wasting its money on a public relations program as long as the word sewage is in its name", the Board in 1960 changed the name from the Federation of Sewage and Industrial Wastes to the Water Pollution Control Federation. Its name from the founding to 1950 was "Federation of Sewage Works Associations".

The WPCF has always been, along with AWWA, an organization with evident vitality, related to its important roles in operator training, plant operations, research, legislative analysis, recommendations on national policies, publication of a needed journal, sponsoring of numerous technical manuals, providing a forum at conferences for discussion of regulatory issues, legislation, and technology transfer, etc. The committees of the organization have had an important role in articulating and advancing the state-of-the-art of practice in both design and operation. The academic community, joining colleagues in consulting, operation, manufacturing, regulation, and administration, has had continuing involvement in the organization in presenting papers, in committees, publishing, assisting in preparing manuals, etc. Several medals of the association, in fact reflect the role of various academics, e.g., Gordon M. Fair, Philip F. Morgan, Thomas R. Camp, Willem Rudolfs, George J. Schroepfer. Academics who have been president include: E. Boyce, Jack McKee, and AEEP members George Schroepfer (1942-43), Richard Engelbrecht (1977-78) and Earnest Gloyna (1983-84). AEEP has had membership meetings, Board meetings, and workshops in conjunction with the WPCF Annual Conference.
7. FUTURE

It is difficult to predict what we will be in the future. Perhaps we should look at and assess the direction we are headed. As to where we may be headed, several guideposts are in front of us.

First, the vision and the admonishment of Harvey Ludwig in his hand-written note of November 8, 1965 to Warren Kaufman (Appendix E.1, Letter 2) should continue to guide us. Perhaps AAPSE/AEEP has shown "professional leadership" as Harvey has said was its purpose. Perhaps we have a track record of "professional excellence", a quality which everyone proclaims to strive for (and have). Harvey admonishes that for the profession to have it, our academic "setup must have it". While we may feel such qualities exist within AEEP, usually they are a matter of judgement, and, perhaps, we can be sure they are present only if confirmed by others. Guideposts on whether this has occurred are in our track record. The professional leadership, if it has been achieved, is a quality intended to endure and to characterize AEEP for the future, as well as for the past. Certainly, there is little question that our founders epitomized these qualities.

Second, the remarks by Past-President Earnest Gloyna at the 1988 Annual Meeting on the vision of the founders are pertinent. Needed was a viable organization that could unify the academic segment of the profession and to speak with one voice on national policy issues.

Third, the Preface remarks by Past-President Richard G. Luthy on the Vision for the next twenty-five years are foresighted and timely. Here, he mentions the need for our students to have a strong foundation in engineering and science fundamentals as a basis for addressing the problems we can't yet identify. Having the skills for life-long learning is the goal of our education process. Self-education is imperative to avoid technological obsolescence. Whatever is learned needs to have the quality of being transferable to new problem areas. Then, the interdisciplinary educational tradition in which we have all been indoctrinated, e.g., chemistry, microbiology, ecology, etc., needs to be reinforced and expanded so that the new problem areas can be addressed. Concerning national policy, AEEP itself has to participate in establishing directions for national policies on environmental research priorities, and on the formulation of strategies for environmental regulation. AEEP has appreciable influence at this time and this needs to be built upon. And finally, AEEP needs to expand its membership charter. The environmental issues we face are diverse and range from global climate change to toxic wastes control. We need interdisciplinary and multimedia approaches, as delineated at the 1988 Research Needs Conference which implies getting involved with other disciplines beyond our traditional ones. The conventional wisdom needs to be challenged whenever creativity and innovation are stifled and the political processes need to be understood so that roadblocks can be overcome.
Fourth, the name of our profession is “environmental engineering”. The charter given us by this new name carries within it a scope which exceeds by far our roots in traditional sanitary engineering. We took the name but have yet to expand our vision and our agenda to fulfill the promise of this designation. Leadership is needed to set a course for solving the global problems which loom and threaten the planet as we know it and mankind.

Fifth, the environmental problems of today are global in character and global in pervasiveness. The global character of acid rain, the greenhouse effect, and ozone depletion affect all mankind uniformly. Then we have the pervasive problems of conventional pollution by organic matter, nutrients, toxic materials, ocean dumping, etc., which threaten our seas, our groundwater, our rivers and lakes, to varying extents in every country. These problems are with us and there is no professional unity with broad enough scope to guide our national and international policies concerning such issues.

All of the above add up to a mandate for the future. The social agenda today gives the laws of tomorrow and the needed practice. The mandate that professional leadership must come from the academic arena gives AEEP the natural charter. The need to expand our membership to fulfill this charter is the imperative of Past-President Luddy. The name we have taken as a profession in 1973 sets our destiny. And finally, the global catastrophes that loom to threaten the world community beg for leadership and policy direction.

Will AEEP expand its role to fulfill the promise of its name? Or do we need another Harvey Ludwig?
MILESTONES

Warren J. Kaufman died suddenly, on Nov. 10, 1973, while on a working visit in Berkeley, from sabbatical leave at the Polytechnic Institute of Milan, in Italy. The AEEP resolution on his contributions notes his vigor, service, and dedication to this Association and to his chosen profession. No one disagrees that he was considered one of the towering figures in the profession. His cool, systematic, and pragmatic demeanor was a vital complement to the styles of Harvey Ludwig and Earman Pearson.

Earman A. Pearson died August 31, 1985. Professor Pearson's resolve, along with his force of personality and vision, were essential traits for the beginning leadership. No one could be around Professor Pearson without feeling the "presence" of his forceful personality. Although he was large in size, for which he had not the slightest self-consciousness, he exuded a self-confidence which carried to students, colleagues, and in his positions of leadership. His accomplishments were many. He is a legend among former students and colleagues. In addition to being a founding member and first president of AAPSE, he was also a founding member and first president of IAWPRC.

Gerard A. Rohlich died on September 16, 1983. Although short in stature, Gerry was a giant among his peers. He started his career at Cooper Union and shortly after WWII, began his long tenure at the University of Wisconsin at Madison where he touched the lives of many engineering and science students. His legacy goes much beyond his personal accomplishments and continues in the achievements and contributions of his proteges who now hold leadership positions in academe, research, government, consulting engineering, and industry throughout the world. One of his favorite comments was, "All my students know more than I do. I teach them all that I know and then they go out and learn more on their own." This humility characterized Gerry Rohlich. Gerry was recognized as a leading authority on eutrophication of lakes and nutrient removal. As a member of the National Academy of Engineering, Gerry chaired the NAS-NAE committee and authored the introduction to the report on Water Quality Criteria. Gerry was an incisive person who could summarize in a few words the results of hours of discussion. Also he was adept at spanning the gulfs between engineering, science, and the public sector. This was recognized in his appointment as the first C.W. Cook Professor of Environmental Engineering at the University of Texas at Austin where, after leaving Wisconsin, he held a joint appointment in Civil Engineering and the Lyndon B. Johnson School of Public Affairs.
REFERENCES

1. Archive Files.


Anon. (probably Pearson and Kaufman), The Case for an American Association of Sanitary Engineering Professors, Nov. 15, 1963
This was a position paper for presentation at Dec. 5 meeting in Chicago. [File 2.1(1)]

Anon., Draft Statement of Objectives, Nov. 19, 1963 (this was a position paper for the Chicago meeting and was probably prepared by Pearson, Kaufman, or Ludwig. [File 2.1(1)]

Anon., Bylaws, American Association of Professors in Sanitary Engineering, Adopted December 5, 1963. [2.4(1)]


This document is worth reviewing as it shows how some of the present institutionalized activities were initiated by this date. Examples include: testimony, register of programs, education conference, interactions with federal agencies, newsletter, bringing in related disciplines, co-sponsor IAWPR conferences, distinguished lecturer program.

Anon., Certificate of Amendment of Articles of Incorporation, Association of Environmental Engineering Professors, State of California, filed by W. O. Pipes and M. P. Wanielista, filed on July 28, 1975. [2.5(2)]
The amendment was pursuant to the Board action on May 1, 1972, Lafayette, which changed the name of AAPSE to AEEP.


Butrico, F. A., Man's Changing Environment, presentation at Annual Meeting, Western Branch, American Public Health Association, Salt Lake City, May, 1964. [2.3(1)]


Eliassen, R., Letter to Warren Kaufman on AAPSE, Stanford, Dec., 19, 1963. [2.7(1)]

Pearson, E.A., Memo to Charter Members, AAPSE, March 6, 1964. [File 2.1(1)]

Kaufman, W. J., Minutes of the Seattle Meeting of AAPSE, Oct. 10, 1963, Seattle. [2.2(1)]

Kaufman, W. J., Testimony on S. 649 (Muskie Bill)


Ludwig, H. F., Memo to Members of ASEIB Subcommittee on Criteria for New Sponsoring Organizations, Arcadia, May 19, 1965. [2.6(1)]

Harvey Ludwig, one of the founding fathers of ASEIB (see Kiker letter of June 24, 1965 to McKee), developed this position paper for the Board, to support the proposal that AAPSE become one of the sponsoring organizations of ASEIB. The proposal was opposed by McKee and Eliassen (see letters of May 26, 1965, and June 10, 1965, to Ludwig from McKee and Eliassen, respectively).
Ludwig, H. F., Note to E. Pearson on approval of resolution at ASEIB board meeting to have AAPSE co-sponsor education conference with ASEIB, Washington, Feb. 6, 1966.

This memo is significant as it relates to the genesis of the 6-7 year education conferences which have since been institutionalized. It also illustrates Ludwig's interest in the success of AAPSE and his energy and influence.


Kaufman, W. J., First Meeting of the Board of Directors of the American Association of Professors in Sanitary Engineering, Chicago, Dec. 6, 1963. [2.2(1)]

McKee, J. E., Memo to Professors of Sanitary Engineering and Other Interested Parties on the topic of American Association of Professors in Sanitary Engineering, Dec., 30, 1963. [2.7(1)]

McKee reconsidered AAPSE after the Dec. 5-6 Chicago meeting and decided not to join it or support it. He is asking colleagues to consider the arguments and to open a larger forum for debate on courses of action to improve the standing of sanitary engineering education in ASEE and other organizations. AAPSE, he believes would supplant the activities of these other organizations. Pearson addressed McKee's concerns in his January 9, 1964 letter to him.


Pearson addressed the concern about proliferation, pointing to the success of UCOWR and the evident void that was filled and felt that the activities of AAPSE would be complementary to the established societies. He looked to the future concerning the changing federal role. His activities summary included meeting with ASCE-SED, a presentation by Pearson (March 17, 1964) at the House Committee on HEW appropriations, a presentation on S. 649 (Feb 18, 1964) by Kaufman before the House Committee on Public Works, a seminar at Cincinnati on "Needs in the Sanitary Engineering Field Over the Next Decade", letter to President Johnson on the need for engineer members on the President's Water Pollution Advisory Board, proposal to WPCF offering to serve as co-sponsors of the 3rd International Conference on Water Pollution Research, letter to WHO on delay in appointing a Director of the Environmental Health Division, filed incorporation papers on Aug. 7, 1964, sent letter to D. F. Peterson expressing interest in having water quality representation on the UCOWR board, first copy of AAPSE Legislative News was prepared on Nov. 1, 1964, and on Nov. 17, 1964, completed draft on Sanitary Engineering and Status Needs.

Also, the Cincinnati seminar, June 16-18, 1964, had 45 professors in attendance. The Bal Harbour membership meeting, with an attendance of 60, aired issues of accreditation and allocation of federal funds, manpower needs, role of NAS, ASEE, FHS in looking after needs of professors, and rebuttal of latter statement in that younger members would have a voice through AAPSE. Membership was 34, as of March 1, 1965.

Sylvester, R. O., Questionnaire on Graduate Education Programs in the Field of Sanitary Engineering, Seattle, September, 1965. [2.6(1)]

The questionnaire was a project to inventory graduate education programs in sanitary engineering. It seems to be the beginning of the register of graduate programs.

Wendt, K. F., Memo to Professors Lenz and Rohlich, ASEEE, Nov. 8, 1963. [2.2(1)]

Wendt was responding to a letter from Ross E. McKinney to Col. A. Higdon. McKinney felt there was no need for another splinter organization, and that ASEE should have a more active section for sanitary engineering. Wendt, Dean at Wisconsin was President of ASEE and shared McKinney's concerns, suggesting also that that ASEE could create a sanitary engineering division.
2. Published Sources.
Volume 1, Edited by B. A. Southgate.
Volume 2, Edited by W. W. Eckenfelder, Jr.
Volume 3, Edited by E. A. Pearson.


3. **Personal Communications.**

E. Robert Baumann, telephone conversation, September 11, 1989, and manuscript editing August 1988. (on charter member date being extended to October 1, 1964)

Gloyna, E. F., telephone conversation, August 18, 1988. (adding tone and tint to personalities and issues of mid 1960's)

Hanes, B., telephone conversation, August 18, 1989. (discussion of professors meeting at Northwestern and testimonies given in the 1970's)

Jones, Norman A., telephone conversation, September 22, 1989 (discussion that Charter Membership was extended by Earman Pearson)


King, P. H. telephone conversation on movement toward a more strictly academic organization, September 14, 1989


Tchobanoglous, G., telephone conversation, August 17, 1989 (discussing early and mid 1960's)

Weber, W. J., Jr., letter of December, 1988 (no date, corrections to manuscript).
APPENDICES
A. ORGANIZATION

A.1 OFFICERS AND DIRECTORS OF AAAPSE and AEEP FROM YEAR OF FOUNDING: 1963-1988

A.2 OFFICERS AND DIRECTORS, 1964-88

A.3 BOARD, COMMITTEES, MEMBERS, 1988-89
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<th>Year</th>
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A.2 OFFICERS AND DIRECTORS, 1964-88

OFFICERS AND DIRECTORS OF AAPSE AND AEEP
1964-1988

Alleman, J. E., Dir., 1985-1988
Amy, G. L., Dir., 1984-1987
Austin, I. H., Dir., 1970-1972; Pres., 1972; Past Pres., 1973
Bacon, V. W., Dir., 1974
Bloodgood, D. E., Dir., 1965-1967
Carlson, D., Dir., 1970
Clesceri, Dir., N. L. 1984-1987
Crittenden, J. C., Dir., 1983-1985
Dague, Dir., R. R., 1977-1979
Engelbrecht, R. S., Dir., 1964-1965
Ferguson, J. F., Dir., 1978-1980
Jewell, W. J., Dir., 1975-1977
King, Dir., P. H., 1974-1976; Pres., 1976; V. P., 1975; Past Pres., 1977
Kornegay, B. H., Dir., 1974
Krenkel, P. A., Dir., 1965-1966
Lauria, D. T., Dir., 1980-1982; Secy.-Treas., 1982
Liebman, J. C., Dir., 1980-1982
A.2 OFFICERS AND DIRECTORS, 1964-88 (cont.)

McLellan, W. M., Dir., 1971-1972
Novak, J. T., Dir., 1977-1979
O'Connor, J. T., Dir., 1973-1974
Patterson, J. W., Dir., 1979-1981
Roberts, P. V., Dir., 1982-1984
Skrinde, R. T., Dir., 1971
Speece, R. E., Dir., 1981-1983
Wanielista, M., Dir., 1975-1976; Secy.-Treas., 1975

Note: In 1985, officers were elected to serve a one-year term from October to October and Directors began a 3 year term in October of the year elected. In previous years, all appointments were on a calendar-year basis (i.e., January to January).
ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS
OFFICERS, DIRECTORS, COMMITTEES, MEMBERS
1988-89

OFFICERS - 1988-89

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University of California

VICE PRESIDENT: THOMAS M. KEINATH
Clemson University

SECRETARY: WILLIAM R. KNOCKE
Virginia Polytechnic Institute

TREASURER: H. DAVID STENSEL
University of Washington

PAST PRESIDENT: RICHARD G. LUTHY
Carnegie-Mellon University

BOARD OF DIRECTORS

James E. Alleman Thomas M. Keinath Brian A. Dempsey
H. David Stensel Charles R. O'Melia William R. Knocke
George Tchobanoglous W. J. Weber, Jr. Bruce E. Rittmann

AAEP DIRECTORY, 1989
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**Ad Hoc Committees**

- Hazardous Waste: Mark M. Benjamin, George Tchobanoglous
- Curriculum Survey: Richard G. Ludy, George Tchobanoglous
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McMaster University

Marvin E. Stephenson
Geneve, SWITZERLAND

Rudy J. Tekippe
James M. Montgomery, Pasadena

William E. Thacker
James River Corporation
Kalamazoo MI

Lawrence K. Wang
Lenox Institute for Research
Latham NY

Mu Hao Sung Wang
State of New York, Albany

Donald R. Washington
Kingston Jamaica
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<th>SUSTAINING MEMBERS - 1989</th>
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<td>Amoco Oil Company</td>
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<td>Colin G. Grieves</td>
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<td>Naperville IL</td>
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<td>Brown and Caldwell</td>
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<td>Eric F. Mische</td>
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<td>Walnut Creek CA</td>
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<td>Camp Dresser &amp; McKee</td>
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<td>Steven Medlar</td>
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<td>Edison, NJ</td>
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<td>CH2M-Hill</td>
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<td>Glen T. Daigger</td>
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<td>Denver, CO</td>
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<td>D.W. Ryckman &amp; Assoc. Inc.</td>
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<td>D. W. Ryckman</td>
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<td>St. Louis Mo</td>
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<td>Eastman Kodak Co.</td>
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<td>Richard Poduska</td>
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<td>Rochester NY</td>
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<td>Engineering-Science</td>
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<td>Nicholas Presecan</td>
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<td>Pasadena</td>
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<td>HDR Infrastructure, Inc.</td>
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<td>Omaha Nebraska</td>
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<td>James M. Montgomery</td>
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<td>Rudy J. Tekippe</td>
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<td>Pasadena</td>
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<td>Lewis Publisher Inc.</td>
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<td>Edward E. Lewis</td>
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<td>Foundation</td>
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<td>Nina L. McClelland</td>
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<td>Ann Arbor MI</td>
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<tr>
<td>C. Robert Morris</td>
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<td>King of Prussia, PA</td>
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<tr>
<td>The Procter &amp; Gamble</td>
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<tr>
<td>Company</td>
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<tr>
<td>Eun Namkung</td>
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<td>Cincinnati OH</td>
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B. CHARTER DOCUMENTS

B.1 ARTICLES OF INCORPORATION

B.2 BYLAWS - AS AMENDED
ARTICLES OF INCORPORATION OF
AMERICAN ASSOCIATION OF
PROFESSORS IN SANITARY
ENGINEERING

The undersigned officers of an unincorporated
association, having been heretofore duly authorized so
to do, desiring to form a corporation pursuant to the
General Nonprofit Corporation Law of the State of
California, hereby certify as follows:

ARTICLE I - NAME
The name of this corporation is: AMERICAN
ASSOCIATION OF PROFESSORS IN SANI-
TARY ENGINEERING.

ARTICLE II - PURPOSES
The purposes for which this corporation is formed
are:

(A) The specific and primary purpose is to strengthen
and advance the fields of sanitary engineering, water
and air resources, environmental health engineering,
and related fields through cooperation of academic
personnel associated with these fields, and to develop
long-range plans concerning education in the fields of
sanitary engineering, water and air resources,
environmental health engineering, and related fields,
and to implement these plans by working with
professional and scientific societies and state federal
agencies.
(B) To have all general purposes and powers
exercisable by a corporation organized and existing
under the Nonprofit Corporation Law of the State of
California which are necessary, desirable or
convenient to carry out the specific and primary
purpose above, including the power to act as trustee
under any trust incidental to the primary objects of the
corporation, and receive, hold, administer, and expend
funds and property subject to such trust.

ARTICLE III - STATUTORY AUTHORITY
This corporation is organized pursuant to the General
Nonprofit Corporation Law of the State of California.

ARTICLE IV - PRINCIPAL OFFICE
The County in this State where the principal office for
the transaction of business of this corporation is to be
located is Alameda County.

ARTICLE V - DIRECTORS
(A) The number of directors of this corporation shall
initially be nine.
(B) The names of addresses of the persons who are
appointed to act in the capacity of directors until the
appointment of their successors are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. A. Pearson</td>
<td>c/o University of California Berkeley, California</td>
</tr>
<tr>
<td>E. F. Gloyna</td>
<td>c/o University of Texas Austin, Texas</td>
</tr>
<tr>
<td>W. J. Kaufman</td>
<td>c/o University of California Berkeley, California</td>
</tr>
<tr>
<td>L. G. Rich</td>
<td>c/o Clemson College Clemson, South Carolina</td>
</tr>
<tr>
<td>G. A. Rohlich</td>
<td>c/o University of Wisconsin Madison, Wisconsin</td>
</tr>
<tr>
<td>J. A. Borchardt</td>
<td>c/o University of Michigan Ann Arbor, Michigan</td>
</tr>
<tr>
<td>R. S. Engelbrecht</td>
<td>c/o University of Illinois Urbana, Illinois</td>
</tr>
<tr>
<td>D. J. O'Connor</td>
<td>c/o Manhattan College New York, New York</td>
</tr>
<tr>
<td>R. O. Sylvester</td>
<td>c/o University of Washington Seattle, Washington</td>
</tr>
</tbody>
</table>

(C) The by-laws of this corporation shall provide for
the number and tenure of office of the directors, their
powers, duties, compensation, and the manner in
which they shall be chosen and removed from office.

ARTICLE VI - UNINCORPORATED
ASSOCIATION
The name of the existing unincorporated association
being incorporated is: AMERICAN ASSOCI-
ATION OF PROFESSORS IN SANITARY
ENGINEERING.
ARTICLE VII - MEMBERSHIP
The initial membership of this corporation shall be the members in good standing as of the date of incorporation of the unincorporated association here being incorporated unless such members file their dissent to such membership in writing with the Secretary of said unincorporated association.

Change in membership and membership rights, dues and assessments shall be as from time to time established by the by-laws of the incorporation.

ARTICLE VIII - BY-LAWS
(A) The initial by-laws of this corporation shall be adopted by a two-thirds vote of the initial directors but shall not be effective unless and until they are ratified by a two-thirds vote of the initial membership. Said ratification shall be by mail addressed to the corporation at its initial principal office which is here established as Room 111, Engineering Building, University of California, Berkeley 4, California.
(B) Subsequent by-laws: Amendments to the initial by-laws shall be adopted in the manner prescribed in the by-laws of the corporation as they are from time to time constituted.

IN WITNESS WHEREOF, for the purpose of forming this corporation under the laws of the State of California the undersigned have executed these Articles of Incorporation as of the date set opposite their name.

DATED: ______________________, 1964
DATED: ______________________, 1964

STATE OF CALIFORNIA
COUNTY OF ALAMEDA

On ______ August 7 ______ 1964,
before me, a Notary Public in and for said County and State, personally appeared E. A. PEARSON and W. J. KAUFMAN, known to me to be the persons whose names are subscribed to the foregoing articles of incorporation, and acknowledged to me that they executed the same.
WITNESS my hand and official seal.

______________________________
Notary Public in and for said
County and State

B-2
AFFIDAVIT

STATE OF CALIFORNIA
COUNTY OF ALAMEDA

E. A. PEARSON and W. J. PEARSON
Being first duly sworn, deposes, and says as follows:
I. That they are the president and secretary, respectively, of the unincorporated association being incorporated by the above articles of incorporation.
II. That said association has duly authorized its incorporation and has authorized the undersigned as its officers to execute the above articles of incorporation.

DATED: August 7, 1964

E. A. PEARSON
E. A. PEARSON

W. J. KAUFMAN
W. J. KAUFMAN

Subscribed and sworn to before me

this ______ day of August 1964

__________________________ Notary Public for said County and State

Amended July 25, 1975 by Professors W. O. Pipes and M. P. Wanielista pursuant to May 1, 1972 Board action changing the name of AAPSE to Association of Environmental Engineering Professors -AEEP.
BYLAWS OF THE ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS

Adopted December 5, 1963
First Amended October 9, 1967 (Terms of Office)
Second Amendment May 6, 1968 (Affiliate Membership)
Third Amendment May 2, 1972 (Adoption, Emeritus Membership, Board)
Fourth Amendment August 1, 1972 (Name Change)
Fifth Amendment February 8, 1977 (Members, Election, Terms of Office)
Sixth Amendment September, 1985 (Office of Past President, Sustaining Membership)

The name of this organization shall be the ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS, hereinafter referred to as the Association and abbreviated "AEEP."

ARTICLE II • OBJECTIVES

The objectives of Association shall be:

2.01 To strengthen and advance the field of environmental engineering and related fields through cooperation of academic personnel associated with these fields.

2.02 To present a unified position on questions concerned with natural resources on the local and national levels by the exchange of information and ideas among the membership.

2.03 To develop long-range plans concerning education in environmental engineering and related fields, and to implement these plans by working with professional and scientific societies and fellow professionals in the public and private sectors.

2.04 To assist federal and state agencies, through advisory and consultative services, in the development of programs related to the education of personnel in environmental engineering and related fields.

2.05 To establish policies for the guidance of its members and to assist its members in matters relating to the development of academic and research programs at individual institutions.

2.06 To assist its members in achieving their legitimate professional objectives in situations involving public agencies, professional societies, and other groups concerned with planning, development, and management of natural resources.

2.07 To establish policy on matters concerning the interest of the members and the functions of those pertinent professional and scientific societies in which have professional interests.

2.08 To examine the adequacy of graduate curricula, of entrance requirements and of physical facilities for the purposes of establishing criteria and of leading to the betterment of education in environmental engineering and related fields.

2.09 To provide assistance to state professional boards, civil service boards, and other groups charged with the licensing and regulation of the environmental engineering and related professions.

2.10 To establish an information service that keeps its members informed about developments in environmental engineering and related fields at the national and local levels.

2.11 To serve as a representative of the United States to international organizations interested in research and education in environmental engineering and related fields.

ARTICLE III • MEMBERSHIP

3.01 Member. Full Membership shall be restricted to persons of professorial rank in environmental engineering or related fields at academic institutions.

3.02 Emeritus Member. Upon retirement, a former AEEP member who has been active in the Association may be nominated by a Member for the grade of Emeritus Member. The nomination shall be forwarded to the Board of Directors who shall examine and vote on the merits of the case. Two-thirds of a quorum of the Board of Directors shall be required in support of the case to elect the nominee to the grade of Emeritus member. The Emeritus Membership shall continue for the life of the member and all dues will be waived. A suitable certificate shall be presented to the Emeritus Member by the Association.
3.03 Affiliate Member. Affiliate Membership in the Association shall be available to qualified persons who are ineligible for Membership as described in Article 3.01, but who are associated with an academic program in environmental engineering or related fields. Affiliate Members shall not have voting rights nor shall they be eligible to serve as members of the Board of Directors. Individuals included in any of the three following categories are eligible for Affiliate Membership:

(a) Individuals who hold or have held, as their principal employment, teaching or research positions associated with programs in environmental engineering or related fields in academic institutions.

(b) Individuals primarily employed outside academia who also hold academic appointments in an environmental engineering or related field program or who have made noteworthy contributions to education in environmental engineering or related fields.

(c) Professors in foreign universities who would qualify for Membership were it not for their geographical location. Professors from other North American countries, because of their unique opportunities to participate in AEEP activities, shall be eligible for either Affiliate Membership or Membership of AEEP. Except for professors from other North American countries, persons eligible for Membership are ineligible for Affiliate Membership.

3.04 Sustaining Member. Sustaining Membership shall be available to individuals and organizations whose concern for education in environmental engineering and related fields stimulates them to assist in strengthening university programs devoted to this area. Sustaining Members shall have rights and privileges of Members with the exception of the rights to vote and to serve as a member of the Board of Directors.

3.05 Election to Membership. Eligible individuals or organizations may join AEEP upon application to the Association and upon payment of the prescribed dues.

3.06 Duration of Membership: Membership shall be continuous unless terminated by nonpayment of dues, resignation, or change of occupational status.

ARTICLE IV • DUES AND FINANCES

4.01 Payment of dues. For each member, the annual dues to the Association shall be determined by the board of directors and shall be payable to the Secretary-Treasurer by 1 February of each year.

4.02 Any member whose dues have not been paid by 1 February shall be given notice of such default by the Secretary-Treasurer prior to 1 April. If the dues remain unpaid by the end of the calendar year, the defaulter shall be removed from membership. Membership may be reinstated by submitting a letter of application to the Association and upon payment of the prescribed dues for the current year.

4.03 Control of Funds. The Secretary-Treasurer shall be responsible for the receipt of dues and other income to the Association, the deposit and custody of such funds, and the payment of proper bills, subject to general fiscal policies prescribed by the board of Directors and subject also to the scrutiny of the Audit Committee.

ARTICLE V • ORGANIZATION

5.01 Board of Directors. The affairs of the Association shall be managed by a Board of Directors under such rules, policies, and procedures as the Board of Directors may determine, subject to the specific conditions of the Bylaws and actions of the Members at Annual or Special Meetings of the full membership.

5.02 Officers. The officers of the Association shall be the President, the Vice-President, the Secretary-Treasurer and the Past-President. All officers shall first be duly elected members of the Board of Directors except the Past-President who shall be an officer by virtue of previous office and may serve an additional year beyond the elected term.

5.03 Headquarters. The offices or headquarters of the Association shall be located at the discretion of the President and with the concurrence of the board.
ARTICLE VI - BOARD OF DIRECTORS

6.01 The Board of Directors shall consist of nine duly elected Directors, including the President, Vice-President, and the Secretary-Treasurer as prescribed in Article VII, plus the Past-President who shall serve as an ex-officio member if serving beyond the elected term.

6.02 Election. New Directors of the Board shall be elected by a secret ballot of the Members. Three Directors shall be elected each year and each Director shall serve for three years. If more than three candidates are nominated, the three receiving the most votes shall be declared elected.

6.03 Terms of Office. Each Director shall be expected to serve for three years and may be re-elected for a second three-year term. No Director shall serve more than six years, except for terms served as Past-President beyond elected terms.

6.04 Vacancies. In the event of the death or resignation of a Director, the President shall appoint a successor, to fill out the term, subject to confirmation by two-thirds of the Board of Directors.

6.05 Meetings. The Board of Directors shall hold its meetings at such times and places as it deems desirable and necessary, provided that a two-thirds majority of the Board of Directors concurs.

6.06 Quorum and Action. At all meetings of the Board of Directors, a majority of the Directors serving at that time shall constitute a quorum for the transaction of business. All action shall be by a majority vote of the Directors present and constituting a quorum.

6.07 Proxies. No Director shall be represented at a Board of Directors meeting or at any other time by a proxy.

6.08 Duties. It shall be the duty of the board of Directors to establish rules, policies, and procedures for the conduct of the affairs of the Association, subject to the bylaws and such action as may be taken by the Members at Annual or special Meetings.

ARTICLE VII - OFFICERS

7.01 Designation. The officers of the Association shall consist of a President, Vice-President, Secretary-Treasurer, and Past-President.

7.02 Election. The officers of the Association shall be elected annually from and by the serving and the newly elected members of the Board of Directors. Vacancies arising from death or resignation shall be filled in the same fashion.

7.03 Terms of Office. Terms of office shall be limited to two one-year terms in each office, with only one term in each office for each elected term on the board of Directors, except for the Secretary-Treasurer whose term shall be for two years.

7.04 Removal from Office. Any officer may be removed from office at any time by a two-thirds vote of a quorum at a meeting of the Board of Directors.

7.05 Duties of the President. The President shall have general supervision of the affairs of the Association. The President shall preside at all meetings of the Board of Directors; see that all orders and resolutions of the Board of Directors and the Association are executed; sign, execute, and deliver all contracts, policy statements, and other instruments authorized by the Board of Directors or the Association; countersign checks in the Secretary-Treasurer's stead; appoint all committees subject to confirmation by the Board of Directors; and perform all other duties normally incident to this office or specifically assigned by the Board of Directors.

7.06 Duties of the Vice-President. The Vice-President shall assist the President in the performance of duties and shall act for the President in the President's absence or incapacity. When so acting, the Vice-President shall have all the powers of, and be subject to all restriction upon, the President.

7.07 Duties of the Secretary-Treasurer. The Secretary-Treasurer shall:

(a) Keep the minutes of meetings of the Association and meetings of the Board of Directors,

(b) Be custodian of all contracts and documents of the Association and of its official records,

(c) Maintain membership records,
Handle all correspondence and affairs normally incident upon the Office of Secretary.

Perform such additional duties as may be assigned by the Board of Directors.

Have charge and custody of, and be responsible for all funds and effects of the Association; receive and give receipts for moneys due or receivable by the Association; deposit all such money to the credit of the Association, or otherwise dispose thereof as the Board of Directors or President shall direct; cause such funds to be disbursed by checks or draft signed by the Secretary-Treasurer or the President; and be responsible for the accuracy of the amounts and preserve proper vouchers for all moneys so disbursed.

Render accounts of the financial condition of the Association to meetings of the Board of Directors, or when otherwise requested to do so by the Board of Directors.

Submit all financial records annually to the Audit committee, and

In general, perform all duties normally incident to the offices of Secretary-Treasurer.

ARTICLE VIII - MEETINGS

8.01 Annual Meeting. An Annual Meeting of the members of the Association shall be held at a time and place designated by the Board of Directors.

8.02 Special Meetings. Upon a majority vote of the Board of Directors or upon petition by a least one-third of the Members of the Association, a Special Meeting of the full Association will be held.

8.03 Date and Place. The date and place of the Annual Meeting or any Special Meeting shall be announced to the entire membership at least 30 days in advance and any notice of change in the meeting time or location shall be given at least 30 days in advance.

8.04 Quorum. At all meetings of the full Association, a majority of the Board of Directors and at least one-third of the Members shall be required to constitute a quorum.

8.05 Proxy. No proxies for Directors or for Members shall be authorized.

ARTICLE IX - COMMITTEES

9.01 Appointment. All committees shall be appointed annually by the incoming President and approved by the Board of Directors. Each committee shall have a Chair and a Vice-Chair.

9.02 Nominating Committee. There shall be a Nominating Committee consisting of three Members and the Past-President. At least two of the members shall not be active Directors. The Past-President shall serve as Chair. The Nominating Committee shall report at a meeting of the membership and shall nominate at least six members for the vacancies on the Board of Directors. No person shall be nominated from an Institution that already has a Member who will serve concurrently with the nominee. There shall be no more than one nominee from an Institution.

9.03 Audit Committee. There shall be an Audit Committee consisting of three Members, none of whom may be active Directors. The Audit Committee shall be responsible for audits of the financial records of the Association.

9.04 Education Committee. There shall be an Education Committee consisting of five Members, of whom no more than two may be Directors. This committee shall consider all matters relating to academic affairs and make appropriate recommendations to the Board of Directors for action by the Association.

9.05 Research Committee. There shall be a Research Committee consisting of five Members, of whom no more than two may be Directors. This Committee shall consider all aspects of sponsored and non-sponsored research at academic institutions and make recommendations to the Board of Directors for appropriate action by the Association.

9.06 Legislative Analysis Committee. There shall be a legislative Analysis Committee consisting of five Members of whom no more than two may be Directors. This Committee shall review all federal legislation (and such state legislation as may be brought to its attention) that may have an impact on environmental engineering and related professions. It shall make prompt and frequent reports to the President and the
Board of Directors so that fast effective action may be taken to protect and support the interests and objectives of the Association.

9.07 Committee on Eligibility. There shall be a Committee on Eligibility consisting of five Members of whom no more than three may be Directors. This committee shall pass on the eligibility of applicants referred to it by the President or Secretary-Treasurer.

9.08 Other Committees. The Board of Directors may establish such other committees on a temporary or permanent basis, as it deems necessary for the effective conduct of the Association's affairs.

ARTICLE X - AMENDMENTS

10.01 Initiation. Proposed amendments to these Bylaws may be submitted by any Member to the Board of Directors.

10.02 Adoption. Proposed amendments to the Bylaws must be approved by a two-thirds vote of a quorum of the Board of Directors and this approval must be confirmed by a two-thirds vote of a quorum of the Membership at an Annual or Special Meeting or by mail ballot. Amendments shall take effect immediately upon adoption.
C. 1960 CONFERENCE ON GRADUATE EDUCATION

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C.2 INTRODUCTORY REMARKS - T. R. CAMP
C.3 LIST OF CONFERENCE PARTICIPANTS
REPORT OF STUDY CONFERENCE
ON THE
GRADUATE EDUCATION
OF SANITARY ENGINEERS

SPONSORED BY
THE AMERICAN SANITARY ENGINEERING INTERSOCIETY BOARD, INC.

CO-SPONSORS
NATIONAL SCIENCE FOUNDATION
HARVARD UNIVERSITY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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INTRODUCTION

Purpose of Conference
To bring together a group of about one hundred sanitary engineers and scientists from field of education, industry, consulting engineering, public health and public works agencies to discuss and study means for raising the educational standards of the sanitary engineering profession and of meeting the diverse requirements of the employers of sanitary engineers.

Sponsorship of Conference
A desire to hold a conference of this nature was expressed by many of the diplomates of the American Academy of Sanitary Engineers. The American Sanitary Engineering Intersociety Board, which is the certification board for the Academy, agreed to sponsor this conference and declared that it should be held at Cambridge, Mass., in June, 1960. It was voted that the National Science Foundation, Harvard University and the Massachusetts Institute of Technology should be co-sponsors. A three-man Steering Committee was designated to run the conference. Thomas R. Camp, Chairman of the Board of Trustees of A.S.E.I.B., was appointed conference chairman, with Professor Gordon M. Fair of Harvard designated as Chairman of the Program Committee and Professor Rolf Eliassen of M.I.T. as chairman of the Arrangements Committee.

Conference Arrangements
A grant from the National Science Foundation made it possible to pay the travel expenses of engineers and scientists from universities and public health agencies, as well as other expenses in running the study conference. Dunster House of Harvard University was selected as the meeting place and residential quarters for the conferees. Members of the Arrangements Committee were Professor James M. Symons and Mr. Irwin J. Kugelman of M.I.T. and Messrs. Robert S. Gemmel and Walter J. Weber of Harvard.

Conference Program
The steering Committee was assisted by the A.S.E.I.B. Committee on Education, under the chairmanship of Professor Harold B. Gotaas, in the selection of program objectives. The wide scope of responsibilities of the sanitary engineering profession was divided into three areas of educational curricula: water resources engineering, air resources engineering, and environmental health.

It was also agreed that committees should be established to lead discussion groups for Sanitary Science courses and for the accreditation of graduate curricula in sanitary engineering. Committee chairmen were selected for each of these areas of discussion. The Chairman of the Program Committee was directed to obtain working papers from each of the area chairmen and to have these papers available for distribution and study prior to the conference. These papers, which are appended to this report, served as the basis of discussion at the various conference sessions. Prior to the conference copies of the Sanitary Engineering Education Directory were also distributed to all conferees. This report was published in January 1960 by the A.S.E.I.B. and was prepared under the direction of Professor Gilbert H. Dunstan, former Chairman of A.S.E.I.B. Education Committee. It was also used as a working paper of the conference and is included in the Appendix of this report.

The program was as follows:

Monday, 27 June, 1960
10:00 a.m. Plenary Session - Purposes and Aims of Conference
2:00 p.m. Committee Meetings
1. Water Resources Engineering
2. Air Resources Engineering
3. Public Health Engineering
8:00 p.m. Committee on Accreditation

Tuesday, 28 June, 1960
9:00 a.m. Plenary Session - Discussion of Preliminary Reports
2:00 p.m. Committee Meetings
8:00 p.m. Committee on Basic Sciences

Wednesday, 29 June, 1960
9:00 a.m. Plenary Session - Discussion of Final Reports
2:00 p.m. Plenary Session - Resolutions
APPENDIX VI. INTRODUCTORY REMARKS AT OPENING OF CONFERENCE

Thomas R. Camp, Chairman, A.S.E.E.B.

On behalf of the American Sanitary Engineering Intersociety Board, the Massachusetts Institute of Technology, Harvard University, and the National Science Foundation I wish to extend to you a cordial welcome to this Study Conference. We are grateful that so many have found it possible to give freely of your time and efforts to this important project. I wish you every success in your endeavors.

The objectives of this conference are twofold: first, to study the present and future educational needs of sanitary engineers in order to develop graduate curricula and general course contents and objectives to meet these needs; and second, to explore the advisability, the feasibility, and methods of accrediting master's degree programs in sanitary engineering. In order to assist you in your deliberations I will endeavor to paint a general picture of the present status of recruitment and education of sanitary engineers and of what I believe will be required for the future.

During the decade from 1947 through 1956 baccalaureate degrees with specialties or options in sanitary engineering numbered 1995, or about 200 per year; master's degrees numbered 1327, or about 133 per year; and doctor's degrees numbered 63, or about 6 per year. Taking due account of graduates who went on to obtain master's degrees and went further to obtain doctor's degrees, the total production per year was about 300. The total number of sanitary engineers in the United States is about 6000 which requires annual recruiting at the rate of about 200 per year, assuming an average tenure in practice of 30 years. These figures tend to indicate that we are losing about one third of our trainees to other fields.

In a recent survey of Sanitary Engineering Manpower by Frank A. Butrico and Israel Light of the Public Health Service it was found that almost two thirds of the practicing sanitary engineers are concentrated in the water-related fields of water supply, waste treatment, and water pollution control. Most of the remainder are occupied in general sanitary engineering work, with the largest number in any single specialty, industrial hygiene and occupational health, amounting to only 4.5% of the total. As you well know, we have never had enough properly trained sanitary engineers in the water-related fields; and with the present population explosion, the shortage is becoming acute. The demand for properly trained engineers in the fields of air pollution control and radiological health is also growing very fast. In my judgment, we could use from 10,000 to 12,000 properly trained sanitary engineers at the present time, and more will be needed in the future.

The Public Health Service has estimated a need of about 22,000 by 1970.

For the past three years the number of engineering students enrolled in colleges and universities has decreased progressively. This is very unfortunate in that it occurs at a time when the need for engineers of all types is on the increase. In our recruitment of sanitary engineers we must, therefore, compete not only with other branches of engineering, but also with other disciplines, particularly science which seems to have considerable glamour to young people today.

In my opinion the best way for engineering schools to meet the competition with science is to modify undergraduate engineering curricula so as to devote more time to science and engineering science with professional and practice courses deferred in large measure to graduate years. This is in line with the objectives of A.S.E.E.'s Grimier Report. In this way the undergraduate scientific preparation will be broad enough for any type of engineering practice or for a scientific career. This method of attack should be especially fruitful for sanitary engineering because it will produce a very much larger reservoir of potential candidates for graduate training in sanitary engineering.

A major objective of this conference is to improve graduate curricula in sanitary engineering. This objective necessitates an improvement in undergraduate preparation for the graduate courses. The upgrading in the education of sanitary engineers may make recruitment more difficult in the immediate future. It is absolutely essential, however, to an improvement in the competence of sanitary engineering personnel and in the long run it should make the field more attractive to bright young men who are seeing a challenging career.

In your deliberations, you will consider the essential undergraduate prerequisites for graduate study in sanitary engineering. You have a vital interest therefore in the improvement of undergraduate curricula. As many of you know, there will be a conference on civil engineering education at the University of Michigan July 6-8. The conference on civil engineering education is sponsored by the Cooper Union, the A.S.C.E., the A.S.E.E., and the National Science Foundation. Its objective is to improve undergraduate civil engineering curricula. Doubtless many of you will attend the Ann Arbor conference. I hope you will press for adequate undergraduate preparation for advanced training in sanitary engineering.
In our recruitment of new personnel into sanitary engineering practice, we must compete with private industry or we will not get the best men or the numbers we require. We can offer interesting and challenging work; but so can many other fields of endeavor, some of which are highly remunerative. Although most of the vocational guidance literature on sanitary engineering is slanted in favor of careers in government, the best opportunities for creative endeavor and for advancement in the sanitary engineering field are in private engineering practice. The aforementioned report by Butrico and Light on Sanitary Engineering Manpower indicates a median income for self-employed sanitary engineers which is 60% higher than the median income for any other category. A review of the 1959 Roster of the American Academy of Sanitary Engineers shows that 22.6% of all the diplomates are principals engaged in the private practice of engineering, and 6.9% are employees of engineering firms. It is probable that there are many more young sanitary engineers employed by private engineering firms who have not yet qualified for certification by the A.S.E.I.B. According to the aforementioned survey of Sanitary Engineering Manpower, about 50% of the engineers who responded to the questionnaire are employed by government. The April 1960 "Scientific Manpower Bulletin" shows that about 45% of the sanitary engineers in the National Register of Scientific and Technical Personnel, 1956-1958, were listed as in industry, business or self-employed. In my judgment about 40% of all sanitary engineers are in private engineering practice, either self-employed or employed by engineering firms. This field of opportunity for future sanitary engineers is bound to expand not only in the water-related fields but even more rapidly in the air-related and radio logical health fields. These facts should be fully exploited in vocational guidance of high school and undergraduate engineering students.

The latest figures indicate that the number of candidates for the master's degrees in sanitary engineering has dropped to 120 or less. The Sanitary Engineering Education Directory, published in January 1960 by the A.S.E.I.B., reveals that there are 65 colleges and universities offering Master's degrees in sanitary engineering or in civil engineering with specialties in sanitary engineering. This indicates an average of less than two candidates for the master's degrees per institution. In my opinion this is academic freedom gone wild. At least four to six staff members should be required at any institution for adequate instruction in all of the disciplines required for any specialty in the field of sanitary engineering. With such a staff and the necessary laboratory equipment, it is hardly economical to have less than 20 to 30 students per year. If graduate curricula in sanitary engineering are to be accredited, perhaps one objective of such accreditation would be to correct the above described situation.

Further review of the Sanitary Engineering Education Directory reveals that approximately 290 professors and instructors in this country are engaged in teaching or research in some aspect of sanitary engineering. Since the total production of sanitary engineers from our colleges and universities in one year is about 300, including both baccalaureate and graduate degrees, there is an equivalent of about one professor or teacher working part time or full time for each recruit produced. This seems to me to be highly uneconomical, in view of the fact that substantially all of our colleges and universities are hard put to it these days to secure enough funds, and all of them are dependent in part upon the taxpayer or endowments, a general reorganization should be considered to reduce the number of persons teaching sanitary engineering.

The American Sanitary Engineering Inter-society Board is dedicated to the advancement of sanitary engineering. The Board is therefore interested in improvement in the training of sanitary engineers and improvement in the quality and number of recruits to the field. We ask your help in these endeavors.
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D. FOUNDING MEETINGS

D.1 MINUTES OF FOUNDER'S MEETING IN CINCINNATI, SEPTEMBER 6, 1963

D.2 MINUTES OF AD HOC GROUP MEETING IN SEATTLE, OCT. 10, 1963

D.3 MINUTES OF MEETING OF MEMBERS PRO TEM IN CHICAGO, DECEMBER 5, 1963

D.4 MINUTES OF FIRST MEETING OF THE AAPSE BOARD OF DIRECTORS, DECEMBER 5, 6, 1963
D.1 MINUTES OF FOUNDER'S MEETING IN CINCINNATI,
SEPTEMBER 6, 1963

TO: Persons Participating in Meeting in Cincinnati on 6
September 1963 for Formation of American Association of
Sanitary Engineering Professors (AASEP).

FROM: Harvey F. Ludwig

SUBJECT: Results of Meeting

Those present at the meeting were G. Rohlich (representing the University of Wisconsin), W. Kaufman (Univ. of California), E. Gloyna (Univ. of Texas), Chairman for the day and H. Ludwig as Secretary. The results of the meeting, all with unanimous agreement, are summarized as follows:

(1) A new organization, to be known as the "American Association of Sanitary Engineering Professors," was declared formed (with those present as the initial members to be included in the group of original Charter Members).

(2) The objective of the AASEP is the strengthening and advancement of the sanitary engineering profession throughout the United States, through exercise of proper influence and contributions with respect to any and all organizations and agencies having to do with sanitary engineering activities, through working with such organizations and agencies to assist them in solving critical national problems in conserving environmental resources (especially in the fields of water supply and pollution control, air pollution control, and radiological health), and through other proper measures, in recognition that the professors of sanitary engineering have a primary responsibility for exercising leadership in solving these problems.

(3) Membership in the AASEP is to be essentially on a "fraternal" basis, with membership by invitation only. Criteria for selection are dedication of the individual to advancement of the profession, his competence and ability to contribute to the group effort and also the factor of geographical representation.

(4) Pro-temp officers were selected as follows: E. A. Pearson as Chairman, W. Kaufman as Secretary-Treasurer, and E. Gloyna, L. G. Rich, and Fred Burgess as Vice-Chairman.

(5) A list of the suggested Charter Members, in addition to the five initial members, Pearson and Burgess, was drawn up as follows:
MINUTES OF THE SEATTLE MEETING OF AASEP  
October 10, 1963

The second meeting of the ad hoc AASEP group was held at 12:00, October 10, 1963, in the Olympic Hotel. The purpose of the meeting was to discuss the nature and objectives with potential members and to formulate plans for the development of a formal organization. E. A. Pearson served as Chairman pro tempore and W. J. Kaufman acted as secretary.

Those present were

Eckenfelder, Manhattan College
O'Connor, Manhattan College
Engelbrecht, University of Illinois
Sylvester, University of Washington
Borchardt, University of Michigan
McGauhey, University of California
Ludwig, California Institute of Technology
Pearson, University of California
Kaufman, University of California

Items of business conducted included the following:

1. E. A. Pearson read the minutes of the Cincinnati meeting, including a preliminary statement of the objectives of AASEP.

2. It was unanimously agreed by those present that a formal organizational meeting was to be held in Chicago on December 5 and 6, 1963. A list of individuals to be invited to the Chicago meeting was prepared and Engelbrecht agreed to look into the availability of University of Illinois facilities in Chicago for the meeting and notify Pearson accordingly. The list of invited participants for the Chicago meeting is appended.

3. The matter of dues was discussed and it was the consensus that the $100 initial fee (as previously agreed upon at the Cincinnati meeting) was reasonable.

4. It was agreed that personal contact about the forthcoming meeting would be made with the invited participants by the persons shown on the attached list.

5. Pearson and Kaufman are to prepare draft By-Laws to accompany the letters of invitation to invited participants for 5-6 December meeting. Information on meeting location and hotel accommodations will be included.

W. J. Kaufman
W. J. Kaufman
Secretary

WJK/32
AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING
Minutes of Meeting No. 3
La Salle Hotel, Chicago, Illinois, December 5, 1963

The third meeting of the American Association of Sanitary Engineering Professors was convened at 0820 in the Douglas Room of the La Salle Hotel in Chicago on December 5, 1963. Chairman Pro-Tem E. A. Pearson opened the meeting with a few welcoming comments. Those present were: Cleasby, Bloodgood, Borchardt, Eckenfelder, Eliassen, Engelbrocht, Gotaas, Gloya, Kaufman, Kiker, McGauhey, McKee, O'Connor, Pearson, Rich, Rohlich, Schroepfer, and Sylvester.

Professor Rohlich spoke on the general needs and possible functions of an organization of professors and noted that other groups, including the deans of the Schools of Public Health, were able to make excellent use of their organization in implementing their objectives. Professor Rohlich also mentioned the University Council on Hydrology as an organization that would serve objectives quite similar to that of AASEP. Professor Rohlich read portions of a letter from Dean Wendt of ASEE in which this organization offered its organization as a "home" to the Sanitary Engineering professors and indicated a willingness to work closely with us. Professor Rohlich also emphasized the point that some functions now carried out by ACSE and ASEE might well overlap with those proposed for the AASEP organization.

Professor Kaufman (serving as Secretary Pro-Tem) reviewed the history and organizational progress of AASEP, and commented briefly on the minutes of the September 9, 1963 meeting in Cincinnati and the October 10, 1963 meeting in Seattle. Professor Kaufman also reviewed the major provisions of the document "The Case for an American Association of Sanitary Engineering Professors" and read the statement of objectives as prepared by E. A. Pearson and W. J. Kaufman, dated December 3, 1963.

Chairman Pro-Tem Pearson then declared all those present members "Pro-Tem" and proposed that the group discuss the endorsement of the proposed AASEP and take formal action with regard to the formation of an Association. It was moved and seconded that an association be formed and the matter was opened for discussion. It was observed by several members that the proposed objectives and functions of AASEP overlapped to a considerable extent with those of several existing organizations, particularly ASEE, ASEIB, and ASCE. Professor Gotaas noted that accreditation was moving along rather satisfactorily, although schools are not requesting accreditation as rapidly as they should and special assistance was necessary in order to accredit radiological health and air pollution programs. Professor Gotaas also noted that there was an absence of money in ASEIB, and that if we would get behind this organization it would accomplish many of the stated objectives. He also noted that professors have constituted a majority on ASEIB, yet progress admittedly has been slow. He questioned whether another professors' organization would do better. Professor Eliassen observed that the Academy should be looked to as the working organization. Professor Gotaas also observed that ASEIB is our home and we all could be members of it.

Professor McKee discussed each of the objectives as previously presented by Professor Kaufman, noting that a majority of these could and should be handled by ASEIB. He also noted that certain of the objectives are currently the responsibility of ASEE, AWWA, and other organizations to which most of those present belonged. He observed that the present home for international conferences was the Water Pollution Control Federation. Professor McKee conducted a poll to determine the organizations to which those present belonged with the following results: ASCE-17; ASEIB-11; AEE-12; WPCF-18; AWWA-16; and APHA-9.

Professor McGauhey observed that objectives 7 and 9 of the "A Statement of Objectives" were generally good and logical objectives for any organization and should not be criticized simply because they were also objectives of organizations to which most of the group already belonged. He also observed that because we are currently members of any other organizations, and generally minorities in these organizations, our impact can be suppressed if it should develop to a point where it was bringing about significant changes in these organizations. Professor O'Connor asked whether an ad hoc committee could not function until it was clearly evident that an Association was necessary. There appeared to be relatively little interest in the ad hoc concept. Professor O'Connor raised this question a second time and Professor Rohlich and other indicated that the ad hoc committee would not give adequate support and continuity of effort to the needs of the Sanitary Engineering profession.
Professor Kiker, in answering the question raised by Professor O'Connor with regard to an ad hoc committee, commented that there was little interest in ASEIB until it was actually incorporated and had begun to function as a formal organization. He concluded that the same steps should be taken in the case of the Association.

Professor Sylvester proposed a twelfth objective as follows: The Association, in addition to speaking and working in its own interests, will endeavor to perform and cooperate with other professional and scientific organization on problems of mutual concern.

Professor Bloodgood stressed that an organization was needed to coordinate work among the existing organizations and Professor Sylvester noted that considering how busy all of us were, the Association might serve as a worthwhile prod to insure that the many organizations to which we belong perform their functions properly and in sufficient time to be effective. Professor Bloodgood also noted that the ASCE Board of Directors seldom had time to express our interests and concluded that ASCE cannot do for us what needs to be done.

Professor Gloyna emphasized that we have yet to make ourselves felt, but that if professors could speak as a single group they would be very effective in influencing the course of events. He also stressed the coordinating and prodding function that the Association might perform.

Professor Engelbrecht stressed the fact that ASEIB does not accept non-engineers and in this regard could not represent the entire profession as well as the proposed Association might. He emphasized the importance of not neglecting the non-engineering group which would include those from the biological sciences and from chemistry.

Professor Schroepfer called for the question. Of the 18 individuals present, 14 voted in favor, 1 voted against, and 2 abstained. Chairman Pro-Tern Pearson ruled that the Association was now established.

Chairman Pro-Tern Pearson proposed that the meeting continue by either: 1) electing officers or 2) by considering the Bylaws. Professor Schroepfer moved and it was seconded, that the group consider the Bylaws as revised by Professor McKee. Professor McKee then moved that we consider the Bylaws the first order of business. This motion was seconded and passed unanimously. The McKee motion was actually an amendment to the motion by Professor Schroepfer and the question was then raised with regard to the Schroepfer motion (consideration of the adoption of the Bylaws was modified by McKee). The motion was passed with one dissenting vote.

Professor McKee then moved the adoption of the revised set of ByLaws indicating that we could then consider each article of the Bylaws and revise them by amendments to his basic motion. His motion was seconded and the group proceeded to examine the Bylaws. A recess was called until 10:20.

On reconvening some discussion was devoted to whether we should consider Article I and Article II or whether the group should proceed to a discussion to Article III concerned with membership. The Chairman Pro-Tern ruled that we would consider Articles I and II at a later time and proceeded to appoint a committee to review and prepare a revised Statement of Objectives to appear as Article II of the Bylaws. Professor Rohlich was chairman of the committee and its members included Professors Gloyna, Borchardt, Eliassen, Kaufman, Engelbrecht, and Sylvester.

The members then proceeded to consider Article III, "Membership." Professor Kaufman raised a question with regard to the desirability of the several classes of members and proposed that there be only one category, that of full regular members. A motion was made to amend Articles 3.03 and 3.04 so as to delete reference to associate and affiliate members. The motion was duly seconded and after a brief discussion received a passing vote of 13 with no dissenting votes.

Professor Rohlich made a motion to delete Articles 3.01, 3.02 and to introduce a 3.01 in which references to associate and affiliate members would be deleted. The motion was seconded and passed. The motion and revised 3.01 was as follows:

"Members shall be reserved to those of professorial rank in the fields of sanitary engineering, air and water resources, environmental health engineering, or related programs at educational institutions." This motion served to replace the above provision with regard to membership instead of that appearing as 3.01 and 3.02 in the original text.
A motion was then made and seconded to accept the full Article III as amended. The motion was seconded and passed with one dissenting vote. The revised Article III appears in the Bylaws as approved and dated Dec. 5, 1963. Professor McKee moved the approval of corrected Article IV. This motion was seconded and was passed unanimously.

Professor Eliassen proposed that Article V be changed such that the Chairman and vice-Chairman be referred to as President and Vice-President, respectively and moved that the article, as amended, be approved by the membership. The motion was seconded and was passed unanimously.

Article VI was then considered. It was moved by Professor McKee that a letter ballot be employed and that Article 6.02 be changed accordingly. The motion was seconded and passed with one dissenting vote. Professor Eliassen then moved that Article VI be approved as amended. The motion was seconded and passed unanimously.

Article VII was then considered. Professor Eliassen moved to amend the terms of office of the officers be limited one two-year period in any six-year period. The motion was seconded and was passed with two dissenting votes. Professor McKee then moved the approval of Article VII as amended. The motion was seconded and was passed unanimously.

Article VIII was then considered by the membership. After proposing minor modifications as shown in the final text of the Bylaws, it was moved by Professor McKee that the Article VIII be approved. The motion was seconded and carried unanimously.

At this time Chairman Pro-Tem Pearson appointed a nominating committee, the members of which were: Professor Kiker, Chairman; and Professors McGauhey, McKee, Eliassen, and Bloodgood. Article IX was then considered by the membership. Professor Bloodgood moved to delete the last line in Article 9.04 and to delete the phrase "including accreditation" in Article 9.04. The motion was seconded and 8 voted in favor, while 6 voted against the motion. The motion carried.

Professor Kiker proposed that Articles 9.04, 9.05, and 9.06 be revised so as to allow two Directors to be members of the Education, Research, and Legislative Analysis Committees. The motion was seconded and 8 members voted for the motion, while 4 voted against. The motion carried.

Professor McKee moved that a new Article 9.07 be included that would establish a Committee on Eligibility of five members of which not more than three may be Directors. The functions of this committee would be to pass on the eligibility of applicants that would be referred to it by the President or the Secretary-Treasurer. The motion was seconded and passed unanimously. Professor McKee then moved that Article IX be approved. The motion was seconded and passed unanimously. Article X was then considered. Professor McGauhey moved the approval of Article X. The motion was seconded and passed unanimously.

The attention of the meeting was then turned to Article II Objectives. Professor Rohlich, Chairman of the Committee on Objectives, read the statement prepared by his committee and appended hereto as Article II of the Bylaws. Professor Rohlich moved that the objectives be adopted as read. The motion was seconded and was passed unanimously.

The meeting then turned its attention to Article I which stipulated the name of the Association. After some discussion Professor Bloodgood moved that the name be changed to the American Association of Professors in Sanitary Engineering (AAPSE). The motion was seconded and it was pointed out in discussion that this name served to recognize in a more satisfactory manner the non-engineers present in the profession of Sanitary Engineering. The motion was paused unanimously.

It was then moved and seconded that the Bylaws, as amended, be approved by the membership. The motion was passed unanimously.
Chairman Pro-Tem Pearson asked for a report of the Nominating committee. The names placed in nomination for Directors by the Committee were Gloyna, Kaufman, O'Connor, Schroepfer, Engelbrecht, Cleasby, Eliassen, Sylvester, McKinney, Pearson and Rich. Professor Cleasby asked that his name be removed from the nominations so that his associate, Professor Baumann, could be placed in nomination. Professor McKee nominated Professor Burgess. Professor Kaufman nominated Professor Rohlich. Professor McKee then moved the nominations be closed. The motion was seconded and passed unanimously. Professor Kiker, Chairman of the nominating committee, recommended that the voting procedure required that each member vote for 10 Directors by listing ten names in order of preference. The first name on the list would receive 10 points, the second 9 points, and so on. The three members receiving the most votes would be elected 3-year Directors; the second group of three, 2-year Directors; and the last three, 1-year Directors. Following voting and tabulation of the results, Professors Pearson, Kaufman, and Gloyna were elected 3-year Directors, Professors Rich Engelbrecht and O'Connor 2-year Directors, Professors Sylvester, Rohlich and Borchardt 1-year Directors. The Chairman Pro-Tem declared the Directors elected. Professor McKee moved that the Pro-Tem group adjourn. The motion was seconded and the Chairman Pro-Tem declared the meeting adjourned.

W. J. Kaufman
Secretary Pro-Tem
FIRST MEETING OF THE BOARD OF DIRECTORS OF THE AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

At 16:00, December 5th, 1963 in the La Salle Hotel, Chicago, Professor E. A. Pearson, Chairman Pro-Tem of the Board of Directors, called the meeting to order and declared the first item of business should be the election of officers. The election was conducted by secret ballot in which three officers, president, Vice-President, and Secretary-Treasurer, were listed. All members of the board participated in the election. The three officers elected were: Pearson: President, Gloyna: Vice-President and Kaufman: Secretary-Treasurer.

Professor Pearson, now President of the Association, took over the chairmanship of the board and declared that the first item of business would be the appointment of committees.

President Pearson suggested that the membership of the Audit Committee includes Professors Dunstan, Mees and Burgess. No action was taken to formalize the appointment of this committee.

President Pearson appointed the Education Committee in which Professor Rich was to serve as Chairman; Professor McKee, Vice-chairman; and Professors Sylvester, McKinney and Morris members. President Pearson asked that the Board approve the membership of this committee. The motion was moved, seconded and passed unanimously by the Board.

President Pearson then asked the Board that the individuals listed below comprise the legislative Analysis Committee: Professor Gloyna: Chairman; Professor Eliassen: Vice-Chairman; and Professor Reid, Schroepfer, and Geyer: members. The motion was moved, seconded and unanimously approved by the board. It was agreed that if a necessity should arise for making a substitution, in the event that one of the appointed members should choose not to serve, that the President should exercise his discretion in making the necessary substitution.

The President suggested that the following individuals should be considered for the Research Committee: Professors McKinney, O'Connor, Engelbrecht, Thomas and Baumann. No action was taken by the Board on this proposal.

The board discussed the matter of initiation fees and dues but no action was taken. The board also discussed what action might be taken in the matter of the Muskie Bill. The counsel of Professor McKee was sought with regard to this question and it was his view that the position of the Association should be against the Muskie Bill. He noted that this Bill could take water pollution control out of the Public Health Service and form a new agency in which engineers would function only at a technical level.

The motion was made that the Board adjourn the meeting. The motion was seconded and adjournment ordered by the President. It was agreed that the Board would reconvene at 08:00 the following day.
CONTINUATION OF FIRST MEETING OF THE BOARD OF DIRECTORS OF THE AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

Meeting called to order at 08:50, December 6, 1963. Those present were President Pearson, Vice-President Gloyna, Secretary-Treasurer Kaufman, and Directors Borchardt and Engelbrecht.

The first item of business was a matter of fees and dues. It was moved to establish a $100.00 initiation fee that would cover the first year of dues and a $50.00 per year dues thereafter. The motion was seconded and passed unanimously by the Board. It was moved to declare charter membership open until February 15, 1964. The motion was seconded and passed unanimously by the Board.

It was agreed that in soliciting membership to the Association that each member of the Board would receive ten copies of the material to be sent to each potential member, together with a mailing list prepared by the Secretary-Treasurer.

The steps necessary to incorporate the Association were then considered. A motion was made and seconded authorizing the officers to take those steps necessary to incorporate the Association. The motion was passed unanimously.

The fiscal policy of the Association was then considered by the Board. It was moved and seconded that expenditures may be made up to $1,000.00 on the joint authorization of the Secretary-Treasurer and President, and that this policy would be followed until the Board of Directors meets and approves a budget. The motion was unanimously passed by the Board.

The matter of eligibility and the appointment of the Eligibility Committee was then considered by the Board. The President recommended that Professor Borchardt serve as Chairman of the Committee, Professor Engelbrecht as Vice-Chairman, and Professors Thomas, Bogan, and Kiker as members. The motion was passed unanimously by the Board.

The appointment of the Research Committee was discussed by member of the Board and it was noted that the membership of this committee would take into account the present membership of the Environmental Science and Engineering Study Section of NIH, the membership of the Research Advisory Committee of the Division of Water Supply and Pollution Control of PHS, and the membership in other committees, including that of the National Science Foundation, and that concerned with training and demonstration grants. It was noted that the Education Committee membership should include those concerned with the training grant program of the Public Health Service.

It was moved and seconded that the President of the Association send a telegram concerning the Muskie Bill if he deemed it appropriate. The position that the Association would take on the Bill was that of opposing it. The motion was seconded and passed unanimously by the Board.

It was moved and seconded that the first meeting of the Board of Directors of the Association of the American Association of Professors in Sanitary Engineering stand adjourned. The President so ordered.

Warren I. Kaufman
Secretary-Treasurer
December 6, 1963
E. HISTORICAL AAPSE DIALOGS

APPENDIX E.1 AWARD FOR EXCELLENCE DIALOG
LETTER 1: Warren Kaufman to Harvey Ludwig
LETTER 2: Harvey Ludwig to Warren Kaufman
DOCUMENT 3: Board Action Establishes Award

APPENDIX E.2 AAPSE STRUGGLE
LETTER 1: Pearson’s Invitation to Professors, p1 of 3
LETTER 2: McKee to Professors
LETTER 3: Pearson’s Rebuttal, p1 of 3
LETTER 4: McKee to Pearson on Distribution
LETTER 5: Gloyna to McKee on Problems of Profession
LETTER 6: Bloodgood Reply to McKee
LETTER 7: ASCE Concern over AAPSE
LETTER 8: Gloyna to ASCE - Rebuttal
LETTER 9: McKee to Professors - Followup
LETTER 10: Gloyna to McKee

APPENDIX E.3 AAPSE AND AAEE
LETTER 1: McKee to Ludwig
LETTER 2: J. M. McKEE ON LUDWIG INITIATIVE FOR AAPSE SPONSERSHIP OF ASEIB
LETTER 3: Kiker to McKee on Origin of ASEIB
LETTER 4: Ludwig to Purdom on Sponsorship Criteria, p1 of 2
LETTER 5: Ludwig to Pearson on AAPSE Sponsorship of ASEIB

APPENDIX E.4 AAPSE AND IAWPR
LETTER 1: Eckenfelder to Pearson on Sponsorship of IAWPR Conferences
LETTER 2: Pearson Position Paper on AAPSE Sponsorship
LETTER 3: Pearson to IAWPR Board on AAPSE Sponsorship, p1of 2
Dear Harvey:

Erm sent me a copy of your letter to him of 17 October. You mentioned the lack of response of AAPSE regarding your generous offer of support for a prize, and expressed wonder as to whether the board had taken any action. As Erm has undoubtedly told you, the Board did vote to accept the funds, but the idea of a prize need not meet with unanimous enthusiasm. Erm appointed three of us to serve as a "prize" committee (Gloyna, Krenkel, and myself). In a letter to the committee I (as chairman) suggested the following:

1. That the prize be awarded annually in the amount of $1,000, with AAPSE matching the E-S offer.

2. That it be awarded to an instructor or professor in sanitary engineering under age 35. This means engineer, chemist, or biologist.

3. That the basis of the award be:
   - 15 points based on published works, either research or professional. This would include engineering reports, designs, as well as the more conventional research paper.
   - 5 points for teaching
   - 5 points for public service

You may recognize that the criteria are similar to those used to appoint and promote staff at Berkeley, but with the admission that published works are more easily evaluated than teaching and public service and thus might just as well be weighted more

4. That the nominations for the award be made by a three-man Prize Committee or any three-member group of AAPSE members. The final decision will be made by the AAPSE Board.

5. The title of the prize would be "Award for Excellence in Sanitary Engineering."

I don't really like this, but it is the best I can do at the moment.

I am sure that all of us appreciated your offer and the spirit in which it was made. The main question of contention was how it could be awarded without creating more disfavor than credit to the sponsors (E-S and AAPSE). Most of us recognize that a majority of the prizes are political rather than meritorious. They are also more paper than the long green kind, as you have pointed out.

As it was agreed that you probably won more prizes than most everyone else, you are without question more expert than we in the details of making such awards. Hence we may expect your indulgence in asking your counsel regarding the nature of the prize. What do you think of the above?

Sincerely,

Warren Kaufman

P.S. Sorry I never made it to your room in AC to pick up those cigars.
Dear Warren:

Thanks for your letter of 5 November, on the subject of the AAPSE prize, and, incidentally, for your new address (which will enable my wife to mail you your cigars - she's had them ready for weeks, but I didn't know where to send them - wasn't quite sure where you were).

My (initial) comments on the prize program (as outlined by you) are as follows:

1. As is the case in virtually all fields of activity, mostly things are poorly handled, so it is with prizes, which have lost favor because of two reasons: (a) Poor selection committees, so that the prize more often than not goes to the wrong person (not so much for political reasons as because of ignorance of members of the prize committee and of those selecting said members) (I've been on a couple of prize committees where the [other] members knew "0" of the subject), and (2) a plethora of prizes, without cash, so that, instead of advancing the professional stature, they lower it. The Nobel Prize, the "No. 1" symbol of stature, would have no stature if the cash with it had been nothing (or $50) instead of $50,000. We've got to hammer in the concept that professionalism ain't professional without cash.

2. A fundamental purpose of AAPSE is to show professional leadership, thus elevating the profession, not to act like other outfits. On the subject of prizes, AAPSE can do this by (a) making sound selections (especially by recognizing the real contributor), and (b) providing some significant cash. Hence, I'm all in favor of the prize by AAPSE as one good means of demonstrating your superior status. I'm dead serious about this, AAPSE will succeed only to the extent it does act in a superior (and non-ordinary) way!!

3. I don't think a prize every year will do any more than one every two years. It's like newsletter. We put out our ES newsletter every 4-5 months. I doubt putting it out twice as often would help. However, I'm not unhappy with an annual prize.

4. As to criteria, I'd suggest a point system as follows:

   100 points = maximum score
   (a) 50 points for academic achievement (30 research and/or engineering, 20 teaching).
   (b) 50 points for professional achievement = any acts serving to advance the status of sanitary engineering, for the whole profession, not just for the guy himself. Our field is sorely lacking in this kind of dedicated effort. We need (b) more than (a) form the professors, who set the "pace" for the rest of us. See over.

5. I concur in your Items (2) and (4).

6. Regarding the name (your Item (5)), at first I didn't like the name you suggest, but it looks better and better so now I like it.

7. My "analysis" of the reasons for the "decline" of sanitary engineering stature since World War II in the period when the money came into the field is that the primary "culprits" have been the profs, who have not set the pace for the field. In my opinion, professional excellence begins with the academic set-up, and without this we're licked. That's why AAPSE is more important than ASEIB. AAPSE can make ASEIB work, but not vice versa. If AAPSE members are to "analyze" things in the traditional (mediocre) way, then AAPSE will be just another "no-good" outfit (and not fit, incidentally to give out cash prizes).

Hope this means something to you!

Harvey
But Harvey:

Why should a few professors be expected to provide the messiah-like leadership that you imply that we need. Not Erm and certainly not any that I know of. It has to be the young men and there is where our real hope of excellence lies.

Dear Warren

Just one more comment on "grading" for the AAPSE prize. What I'd suggest is a system whereby a candidate can win either as a research or as a professional contributor or even as a combination of both; in other words have 3 different grading systems, so a man can win on either route. This is the method used by the Cosmos Club, about 90% get in as scientists, the other 10% as "distinguished in the arts."

Hope this helps-

Harvey

Editors note: originals of above were hand-written; layout was approximately as typed.
E.1 CRITERIA FOR AWARD FOR EXCELLENCE

(DEC 3: Board Action Establishes Award)

c. January 25, 1966

AAPSE AWARD FOR EXCELLENCE IN SANITARY ENGINEERING EDUCATION

On January 25, 1966 the Board of Directors of the American Association of Professors in Sanitary Engineering formally established an "Award for Excellence in Sanitary Engineering Education." The award is to be made biennially in the amount of $1000, the cost to be borne equally by Engineering-Science, Inc. and AAPSE.

The conditions for making the award are as follows:

A. Eligibility for the award shall be limited to instructors and professors principally engaged in teaching in water science and engineering who are age thirty-seven or under and who have published as senior or sole author at least one professional or scientific paper in a recognized journal.

B. Selection of the recipient of the Award shall be based on

1) an outstanding scientific contribution in the field of water research and development, or

2) demonstrated outstanding professional works and leadership, or

3) a combination of 1) and 2) in which equal weight shall be given to academic (research and teaching) and professional achievements.

C. The nomination of an individual for the award shall be made by five members of the teaching profession principally concerned with water engineering and science. In preparing the case in support of the nomination, supporting letters should be included from the nominating committee as well as from other scientists and engineers familiar with the nominee's work. The case should also be supported by reprints of published scientific and professional papers, engineering reports, text and reference books, and any other written material attesting to the professional and scientific competence of the nominee. The nominating committee should indicate in which of the three categories (cf., B) the individual is being placed in nomination.

D. The Award shall be administered by a three-member "Awards Committee" nominated by the President and including one member of the Board of Directors and two members of the Association. The decision as to the recipient of the Award shall be made by a simple majority of the Board convened in formal session.

E. The Award shall be made each two years at the regular annual meeting of the Association. The initial award shall be made not later than November 1, 1966.

Nominations for the Award should be submitted to the Chairman of the awards Committee. Nominations should preferable be submitted in the form of a complete "case" in which the principal nominator assembles the various letters of recommendation and other documentation into a single dossier.
AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

OFFICERS
President E. A. Pearson
Vice-President E. F. Gloyna
Secr.-Treasurer W. J. Kaufman
Rm. 111 Engineering Bldg.
University of California
Berkeley 4, California

DIRECTORS
J. A. Borchardt
R. S. Engelbrecht
D. J. O'Connor
L. G. Rich
G. A. Rohlch
R. O. Sylvester

Dear Professor:

In recognition of your responsible professorial position in the field of education and research in sanitary engineering, and the related environmental sciences, you are most cordially invited to apply for membership in the newly formed American Association of Professors in Sanitary Engineering.

Enclosed are copies of a membership application form and a general information summary which outlines in detail the specific objectives, membership dues and requirements, and current officers and Board of Directors of the Association.

In brief, the obvious objective of the Association is to improve and advance education and research in the fields of sanitary engineering, air and water resources, environmental health engineering, and related environmental sciences. We believe that you too are dedicated to this effort and hope that you will be willing to join us in membership to contribute with us in presenting a reasonably united effort in steps leading to the advancement of education and research that will benefit all of us as well as the profession. Moreover, we need your membership and your positive contributions in work and counsel so that this Association will truly contribute effectively to its stated objectives.

If you have any questions or would like to obtain a copy of the Bylaws of the Association, please let me know.

Can we count on you, your cooperation and active participation and membership in your Association?

Sincerely yours,

Erman A. Pearson
President

Enclosures
APPENDIX E.2 AAPSE STRUGGLE

(LETTER 1: Pearson’s Invitation to Professors, p2 of 2)

Information Bulletin

THE AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

December 18, 1963

An association of professors in the fields of sanitary engineering, environmental health engineering, air and water resources and related environmental sciences was formally organized at a meeting in Chicago on December 5, 1963. The Chicago meeting represented the culmination of several years of discussion among sanitary engineering professors regarding the need for an organization that expresses and responds to their interests and aspirations in a manner that has not been possible through the many existing organizations to which they belong.

The idea of a formal Association had its conception at the 1961 annual meeting of the Water Pollution Control Federation in Milwaukee. At that time Dean G. A. Rohlich of the University of Wisconsin was asked to serve as chairman of an ad hoc group whose charge was to explore the feasibility of an association of professors. Discussion continued on an informal basis until last September when the ad hoc group elected in absentia Professor E. A. Pearson as chairman pro tempore with the expressed instructions of proceeding to develop a formal organization. A second meeting was held in Seattle at the time of the September Federation meeting at which Professor Pearson presided and with those in attendance including several individuals beyond the initial ad hoc group. At this time the date was fixed for the organizational meeting in Chicago.

The initial AAPSE members present in Chicago elected nine Directors who then elected Professor E. A. Pearson of the University of California, Berkeley, as President, Professor E. F. Gloyne of the University of Texas as Vice-President and Professor W. J. Kaufman, also of Berkeley, as Secretary-Treasurer. The Directors include Dean L. G. Rich of Clemson College, Dean G. A. Rohlich of the University of Wisconsin, Professor J. A. Borchart of the University of Michigan, Professor R. S. Engelbrecht of the University of Illinois, Professor D. J. O’CONNOR OF Manhattan College, and Professor R. O. Sylvester of the University of Washington. The Board of Directors met on December 6th and determined that charter membership would be available through February 15, 1964. The Board also established the initiation fee and first-year dues at $100, with the continuing annual dues at $50 per member. Membership in AAPSE is available to all of professorial rank (assistant through full) in the fields of sanitary engineering, air and water resources, environmental health engineering, and related areas at educational institutions.

What is the need for AAPSE and what are its objectives? It became amply evident at the several organizational meetings that the typical professor in sanitary engineering is overburdened with society affiliations that he does not wish to sever, even though he is unable to participate effectively in all of them. It also became evident that all of these societies have chartered responsibilities to numerous segments of the engineering and health professions beyond those encompassed by the sanitary or environmental health engineering designations. Thus, none can properly give the degree of attention and support to the sanitary and environmental group that the current state of their professional affairs demands. This is especially true for the academic segment of the profession.

The general objective of AAPSE is to strengthen and advance the fields of its membership through cooperation among members of the academic profession. It is expected that the Association will be capable of taking a unified position on questions concerned with natural resources, both local and national, through the exchange of information and ideas among its membership. This objective will be enhanced through an information service concerned with matters of local and national policy and especially directed at the air-water resources situation. The Association will assist its members in developing sound academic and research programs on their individual campuses and will endeavor to assist various granting agencies in evolving complementary programs of financial support. In attempting to achieve these many objectives, the Association is dedicated to working within the existing framework of societies and it should not be looked upon as a competing or detracting group. Its functions will be clearly supplemental and coordinate
MEMORANDUM

TO: Professors in Sanitary Engineering and Other Interested Parties

RE: American Association of Professors in Sanitary Engineering

Many of you have been, or soon will be, invited to join the American Association of Professors in Sanitary Engineering (AAPSE). The decision to join or not to join must rest with you. It should be based on as much background as possible. Your collective action may turn out to be a force for good in engineering education; or it may have serious repercussions. As a consequence, I suggest that you weigh all factors carefully before reaching a decision.

The organization of sanitary engineering professors into some sort of a cohesive group had been discussed for several years. It was not until 6 September 1963, however, that definitive action was taken. On that date five engineers met in Cincinnati and declared the American Association of Sanitary Engineering Professors to be formed. Professor Pearson was selected as Chairman pro-tem, Professors Gloyna, Rich, and Burgess as Vice Chairman pro-tem, and Professor Kaufman as Sec.-Treas. pro-tem. A second preliminary meeting involving nine sanitary engineers was held in Seattle on 10 October 1963. At that time, plans were made for a formal organizational meeting to be held in Chicago on 5 & 6 December 1963, with a selected list of 26 invitees. Several leaders in the field were conspicuously omitted from the list of invitees.

In the meantime, Dr. Kurt Wendt, President of the American Society for Engineering Education (ASEE) and Dean of Engineering at Wisconsin, learned of the proposed organization and wrote a fine letter to professor Rohlich and others imploring the sanitary engineering professors not to establish a separate association apart from ASEE. He suggested the formation of a special committee on sanitary engineering within ASEE, with considerable latitude of action and expression. He offered the full support and cooperation of ASEE for such a committee.

Although I did not participate in the preliminary meetings at Cincinnati and Seattle, I was one of 18 professors present at the formal organizational meeting in Chicago on 5 December 1963. Chairman Pearson declared all of us "members pro-tem" so that action could be taken to adopt Bylaws, elect Directors, and conduct other business. Formal membership, quite obviously, had to await adoption of the Bylaws and establishment of criteria for eligibility.

Dr. Kurt Wendt's letter was read and discussed briefly, but it wasn't given much support. Professors Pearson and Kaufman presented a proposed "Statement of Objectives" containing eleven specific items. I discussed these objectives one by one and pointed out that each in turn was a logical function of ASEE, ASEIB, ECPD, ASCE, AWWA, and/or WPCF. On that basis, I maintained that there should be no need for AAPSE, especially if each professor would join and support existing societies and work for these objectives through the committee structure of such organizations. Only 12 of the 18 participating professors, for example, were members of ASEE. Finally, Professor Pearson asked for a motion to endorse the formation of AAPSE. It received 15 affirmative votes and one negative vote while two of us abstained. Thereafter, Bylaws were adopted and the way was cleared for formal organization.

A nine-man Board of Directors was elected from among those present (namely, Gloyna, Kaufman, Pearson, Engelbrecht, O'Connor, Rich Borchardt, Rohlich, and Sylvester). I declined to be nominated. The Board then met and elected Pearson as President, Gloyna as V.P., and Kaufman as Sec.-Treas. The board continued to meet while the rest of us went home.
E.2 AAPSE STRUGGLE

(LETTER 2: McKee to Professors, p2 of 2)

After returning to Pasadena, I gave a lot of thought to this organization and decided not to join it. I agree with Kurt Wendt that if the professors of sanitary engineering feel a need to organize, they should do it within ASEE. If every specialty follows the same pattern, we’ll end up with American Associations of Professors in (a) Structural Engineering, (b) Transportation Engineering (c) Space Engineering, and ad infinitum. What would then become of ASEE?

I am fearful that AAPSE, with a large income from high annual dues, will become a "pressure group" and that it will do more harm than good to the academic side of sanitary engineering. Furthermore, I anticipate that the formation of AAPSE will create adverse reactions among professors in other branches of engineering as well as opposition from academic administrators. Finally, I suspect that sanitary engineers in private firms and public agencies, who normally function professionally through ASEIB, ASCE, AWWA, APHA, APWA, WPCF, NSPE, ECPD, etc, will view this new organization with considerable suspicion and apprehension.

What should be done about the situation? The following courses of action are indicated:

1. Professors of ranks in sanitary engineering should think seriously and clearly before joining AAPSE. Once an organization is established, it becomes difficult to disband.

2. Sanitary engineers not in academic work should express publicly their reactions to the formation of AAPSE.

3. Officers of existing societies in which sanitary engineers participate should study the implications of AAPSE and take action, independently or collectively, to condone or condemn the new association.

4. The President of ASEE might well wish to renew his invitation to AAPSE to disband as an independent society and become a special committee of ASEE.

In my opinion, these matters should be discussed widely, frankly, and openly, not just by a small selected group but by all professors and other interested parties. It is hoped that this letter will stimulate such discussion and possible action.

Sincerely yours,

J. E. McKee
Professor of Environmental Health Engineering

JEM:jk
January 9, 1964

Dear Professor:

I am enclosing a copy of my reply to Professors McKee's letter which you may have received recently. If you did not, please feel free to contact me and a copy will be mailed to you.

I hope this letter answers the significant points raised in the McKee letter and that this will be our only letter of rebuttal. I am also hopeful that Jack will join AAPSE in the near future.

Best regards,

Erman A. Pearson
President

P.S. For your information, Harvey Ludwig part-time lecturer at Cal Tech and close associate of Professor McKee's, is very enthusiastic about AAPSE and its possibilities - although he is not eligible for membership.
AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

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Vice-President E. F. Glynn
Secr.-Treasurer W. J. Kaufman
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D. J. O'Connor
L. G. Rich
G. A. Rohrich
R. O. Sylvester

AIR MAIL
Professor Jack E. McKee
Department of Engineering
California Institute of Technology
Pasadena, California

Dear Jack:

I was very disappointed to learn of your current negative attitude regarding the need for and legitimate activities of the American Association of Professors in Sanitary Engineering (AAPSE) when Professor McGauhey showed me a copy of your letter of 30 December, sent to him and to selected "Professors in Sanitary Engineering and other Interested Parties." I am certain that you also appreciate my personal regrets, especially after having gratefully received your generous and competent assistance in developing the By-Laws of the Association at our meeting on 5 December 1963.

I certainly agree that professors should weigh carefully all factors before making a decision to join AAPSE. Those of us who have been active in its formation have given it much consideration and have near-unanimously decided that the action taken was in the best interests of the profession. You will recall that the 15 professors voting in the affirmative in December were supported by formal expressions or proxies from 6 invited professors who were unable to be present. Considering that there was only one negative vote, two abstentions (including yourself), and two persons who did not respond by the date of the meeting, there is a gratifying degree of support for the general concept of an association. I can assure you that the most optimistic prognostication was never the unanimous support from our group of individualistic professors.

Obviously, any organizational meeting such as this one could not include everyone. The list of 26 invited participants at the Chicago meeting was developed by those present at the Seattle meeting, a meeting to which you were invited. Moreover, additional individuals were added to the list at the request of various participants, including yourself. It was believed by all concerned that the invited participants to the Chicago meeting certainly represented an extremely broad spectrum of viewpoint and interest.

As to concern about multiplicity of organization or associations, I cannot but agree with your general feeling. Possibly the reason is that our profession is already fractured by more associations or societies than any other area I know. One of the prominent objectives of AAPSE is to strengthen and coordinate the participation of sanitary engineering professors in all of the societies to which they may choose to belong, including ASEE. However, Jack, I think you would be one of the first to agree that every one of us should not have to belong to each of the 12 to 15 associations and societies in our field to assure that such organizations do not act against our best interests, either as individuals or as a segment of the sanitary engineering profession.

January 9, 1964
As to the likelihood of the Association doing more harm than good to the academic side of sanitary engineering, I do not share your concern or suspicion. Obviously, what is done by the Association will depend upon the will of its members as expressed through an elected Board of Directors. I am idealistic enough to believe that action, taken in a completely democratic manner and as precisely spelled out in the By-Laws, by people of the caliber of the elected Board and the members of the Association to date will be of great benefit to the profession. Certainly, I as an individual would prefer to rely on the influence and collective judgment of a prominent group of educators in our field than on the occasional personal pressure by one or two individuals.

I sincerely hope that you will consider the Association in a fair and open fashion and that we soon shall have the benefit of both the pleasure and leadership that your association with AAPSE can provide. I can assure you that my efforts are directed in a singular fashion to do all I can to benefit the sanitary engineering education profession. Moreover, I know of no one in the organization to date who does not also have this fundamental objective.

With best personal regards, I am

Sincerely,

Earman A. Pearson
E.2 AAPSE STRUGGLE

(LETTER 4: McKee to Pearson on Distribution)

CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA 91109

W. M. Keck Laboratory of
Environmental Health Engineering

15 January 1964

Dr. Erman A. Pearson
Professor of Sanitary Engineering
Department of Civil Engineering
University of California
Berkeley 4, California

Dear Ern:

This is to acknowledge and thank you for your letter of 9 January 1964. We seem to be in agreement on one point, namely that Professors should weight carefully all factors before making a decision to join AAPSE.

Inasmuch as copies of your letter to me were distributed, presumable to everyone who received an invitation to join AAPSE, you may be interested to know the distribution given to my letter of 30 December 1963. I sent one copy to the senior man in sanitary engineering at most of the leading schools, but I did not send copies to the other staff members. Instead, I asked the senior man to circulate the letter among his staff. For example, a copy went to Eliassen at Stanford, but not to the other faculty members. Similarly, a copy went to Gotaas, Okun, Gloyna, etc., but not the other members of their staffs. In a few instances, where the senior member of the faculty is likely to be traveling (e.g. Abel Wolman) a second copy was sent to another staff member at the same school. Owing to my limited distribution, therefore, quite a few people may have received your letter of 9 January who did not receive my original mailing. It was very kind of you to offer to send copies of my letter to anyone who so requested it.

Sincerely yours,

J. E. McKee
Professor of Environmental
Health Engineering
E.2 AAPSE STRUGGLE

(LETTER 5: Glynna to McKee on Problems of Profession, p1 of 2)

THE UNIVERSITY OF TEXAS
AUSTIN, TX

DEPARTMENT OF CIVIL ENGINEERING
ENVIRONMENTAL HEALTH ENGINEERING
ENGINEERING LABORATORIES BUILDING 305

January 17, 1964

Dr. Jack McKee
Professor of Sanitary Engineering
California Institute of Technology
Pasadena, California

Dear Jack:

I am disappointed that you have decided not to participate in AAPSE, and I am deeply concerned about your action. I know how much time and effort you have personally put into the betterment of the sanitary engineering profession. Without your energies and guidance, I feel that sanitary engineering might even be in worse trouble. You took the lead at the Harvard Conference, but now you seem to be satisfied with the status quo. Surely you must see the sanitary engineering profession going off on a number of tangents, all supported by a variety of separate motivations.

Organizationally, the sanitary engineering teaching profession has no guidance. I don't think that ASEIB has been a very strong factor in helping to provide the needed guidance. It might have helped some governmental personnel offices to categorize people but other than that we haven't accomplished very much. ASCE is a very fine technical organization, and this is certainly one of the strong arms of sanitary engineering. Yet, I must ask the same underlying question that is posed for ASEIB. ASCE has not been willing to support our academic requirements before the Federal government. Similarly, the ASEE is our accrediting organization. We need this organization and certainly we must continue to give ASEE our strong support. Surely you must have felt as I have felt when making a site inspection for ASEE that there was very little established policy on which to operate. As you well know, we have gone our own ways in many respects and have judged others accordingly.

I certainly have no desires to father a new organization, but I won't hesitate to rebuke an organization that is ineffective. If we want to maintain this profession or ours, we had better get together and hash this thing out collectively. I mean this in all sincerity and with no disrespect to the tremendous amount of hard work that has been put into the development of our profession by such illustrious men as Abel Wolman, Gordon Pia, Thomas Camp, yourself and others.

In my opinion, if this new organization of ours can bring some direction and re-establish objectives for a number of the existing professional organizations, it will have served its purpose and possibly need not even exist in its present form after a few years. This direction can be accelerated if we get the full support of such experienced leaders as yourself. Surely you are not so organizationally bound as to let the profession's problems go unattended. Just stop and look at what has happened.

ASEIB, ASCE and ASEE, as organizations, are having considerable difficulty in accepting the rapid changes that are taking place in Sanitary Engineering. Sometimes I get the feeling that many members in the above three organizations stubbornly continue to think of Sanitary Engineering as a small subsidiary operation of civil engineering design. Unless a broader concept is accepted, many aspects of Environmental Health or Sanitary Engineering, such as water resources, will be absorbed into a number of other areas; air pollution will go its way; radiological health will become affiliated with other groups.
I hope that you will reconsider your action.

Sincerely,

Earnest F. Gloyna
Professor,
Environmental Health Engineering
(LETTER 6: Bloodgood Reply to McKee)

PURDUE UNIVERSITY
SCHOOL OF CIVIL ENGINEERING
LAFAYETTE, INDIANA

January 23, 1964

Professor J. E. McKee
Environmental Health Engineering
W. M. Keck Engineering Labs.
California Institute of Technology
Pasadena, California

Dear Jack:

Your letter discussing your views on the American Association of Professors in Sanitary Engineering has been received and read.

I am aware of your views and respect your right to them. I do believe that your loyalties to other groups biases your opinion. Your letter was read by all members of our staff, and so they too have the benefit of your thinking.

There is an urgent need for the AAPSE, and the young men who will guide it in the future have the opportunity to bring into focus the scattered activities and uncoordinated thinking of organizations and individuals who have been assigned the responsibilities of serving the profession and representing the thoughts of the professors.

Sincerely,

Don E. Bloodgood
Professor of
Sanitary Engineering

DEB:3b
E.2 AAPSE STRUGGLE

(LETTER 7: ASCE Concern over AAPSE)

AMERICAN SOCIETY OF CIVIL ENGINEERS
SANITARY ENGINEERING DIVISION
Atlanta, Georgia 30332

March 3, 1964

To the Officers and Directors
American Association of Professors in Sanitary Engineering

Gentlemen:

The Executive Committee of the Sanitary Engineering Division of ASCE is much interested in AAPSE, and the
individual members of the Committee as well as other members of ASCE have expressed concern over its formation.

Our Committee is meeting in Chicago on March 17 and 18, 1964. There will be further discussion of AAPSE at that
time. Because it would be helpful to have opinions from each of you, I am taking the liberty, as Chairman of SED, to
ask you to send me your thoughts. Enclosed, for your information and review, is a copy of a letter I wrote to Pete
Wisely, dated January 16. I think it is very important to our profession that our committee have your comments. We
don't want to take action which will not be in the best overall interest.

Sincerely yours,

Robert E. Stiemke, Chairman
Executive Committee, SED, ASCE

RES:ae
Enclosure (1)

cc: Executive Committee, SED
    Mr. Samuel I. Zack
    Mr. Don Reynolds
    Mr. W. M. Wisely
March 11, 1964

Professor Robert E. Stiemke, Chairman
Executive Committee, SED, ASCE
Georgia Tech
Atlanta, Georgia

Dear Bob:

Reference is made to your letter of January 16 which was addressed to Pete Wisely.

I am in favor of AAPSE and so are many other professors. University professors in sanitary engineering are faced with many problems that are unique. I see no reason why professors in sanitary engineering as a body cannot discuss mutual problems and act on these problems. Professors are responsible for research monies, training funds, facility grants, academic instruction, program orientation, etc.

I seriously doubt whether practicing engineers are as "concerned" about AAPSE as you indicate. We are providing competent graduates. Don't you agree that it is better to discuss and reach some degree of uniformity before "popping off" individually?

The covering umbrella of a technical society hardly provides a rapid mechanism for discussing urgent and pressing problems. Just as an example the letter that was written by ASCE stating the organization's views for Senate Bill 2 was not even read at a recent Congressional Hearing. Yet this Bill represented vital legislation which directly affected many sanitary engineering professors.

I note in your letter the word "concerned" keeps coming up repeatedly. The word is misused. AAPSE is not in competition with ASCE, ASEE, ASEIB, or any of the valid professional organizations. Present members of AAPSE have not dropped membership in the above organizations. If an existing technical organization has real concern about sanitary engineering, attention should be directed toward the profitable use of the combined talents found in AAPSE. The ASCE should be proud of the fact that some of its members are competent, enthusiastic, and willing enough to work on some major problems that may even strengthen the parent organization.

If I can be of further help, please do not hesitate to write or call.

Sincerely yours,

Earnest F. Gloyna
Vice-Chairman,
AAPSE

cc: Erman Pearson
    William H. Wisely, Executive Secretary, ASCE
E.2 AAPSE STRUGGLE

(LETTER 9: McKee to Professors - Followup)

CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA  91109

W. M. Keck Laboratory of
Environmental Health Engineering

MEMORANDUM

TO: Professors in Sanitary Engineering and
Other Interested Parties

RE: American Association of Professors in Sanitary Engineering

19 March 1964

Reference is made to my memorandum of 30 December 1963 on this subject. Although that communication did not request or suggest a reply, a great many prominent professors and practicing sanitary engineers wrote to me, or telephoned, to express their reactions to the formation of AAPSE. Indeed, the number of responses has been so great that I have not attempted to answer each one personally. This second memorandum is intended to be a joint acknowledgement and expression of appreciation for these letters.

To describe the various reactions and points raised by the responses would require a lengthy report. The following tabulation summarizes the expressions of opinion of those who communicated with me. I recognize, of course, that this may not be a true cross-section of the profession because my first memorandum did not request a poll. Nevertheless, the figures are interesting:

<table>
<thead>
<tr>
<th></th>
<th>Professors</th>
<th>Practicing Engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opposed to the formation of AAPSE</td>
<td>41</td>
<td>16</td>
</tr>
<tr>
<td>In favor of the formation of AAPSE</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Neutral</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

There appears to be some apprehension among a few professors that failure to join AAPSE or expressions of opposition to it might result in discriminations against the individual or the school by professors on committees that recommend the award of grants or contracts by governmental agencies. In my opinion, it is highly unlikely that such discrimination will occur. Indeed, any evidence of it would be a sad reflection on the profession. I am confident that all recommendations on grants and contracts will continue to be based on merit.

Again, I wish to thank all of you who wrote to me on this subject.

Sincerely yours,

J. E. McKee
Professor of Environmental
Health Engineering
THE UNIVERSITY OF TEXAS  
AUSTIN 12, TEXAS  

DEPARTMENT OF CIVIL ENGINEERING  
ENVIRONMENTAL HEALTH ENGINEERING  
ENGINEERING LABORATORIES BUILDING 305  

April 16, 1964  

Professor Jack McKee  
The W. M. Keck Laboratory  
California Institute of Technology  

Dear Jack:  

I somehow admire the audacity with which you express yourself at times and the manner in which you broadcast your letters. However, it appears to me that you have exhibited a considerable degree of inconsistency. First, you demonstrated considerable interest in the preparation of the by-laws or constitution of AAPSE, although you abstained from voting for the organization's formation. The latter is your prerogative, and I certainly pick no bones with you about this. Second, instead of working with this new organization and helping us to strengthen the existing parent or professional organizations through the transfer of ideas which have received the benefit of collective discussions, you selected to broadcast a "blast." Since you directed this epistle to people who may not as yet have heard about the formation of AAPSE, non-educators, and in some cases people who really do not contribute a great deal to the teaching of sanitary engineering, one would think that you intended to use political-type tactics to raise unfounded fears. You, above everyone, should know that the ones who had the desire to create AAPSE have done so because they wish to talk things out as a body before suggesting action by various organizations. This is in contrast to your unilateral action.  

Perhaps we do not deserve the right to look into our own problems as a group. Perhaps we should continue to let consulting engineers, government employees, and some of the retired people in the field set educational policies. Today we are living in a fast-moving world, and a group needs to keep on top of things as they occur.  

As far as I am concerned, the AAPSE did not choose to ignore Dr. Wendt's offer to set up a special committee on sanitary engineering within ASEE. As you well know, the function of AAPSE is not to replace any of the functions of ASEE but to give ASEE guidance and support. However, AAPSE most assuredly should, through ASEE representation, offer the collective thinking. The mere fact that ASEE with its long years of record can only show a membership of 11 out of the 18 AAPSE members present at the Chicago meeting indicates a certain degree of weakness itself. The professional contributions of those who are not members of ASEE certainly cannot be discounted!  

If everyone would settle down and get to work, including people you have excited and fence-straddlers, a great deal of good could come out of this flap. I am convinced in my own heart that all of the existing organizations would have been strengthened if the functional groups within the sanitary engineering teaching profession could have joined hands. Instead of helping to coalesce the attitudes and opinions of the engineers and scientists in the sanitary engineering teaching profession, you seemingly have fostered the fragmentation of the profession.
At a later date, there certainly is nothing that would prohibit AAPSE from becoming a loosely-attached organization to one or more of the major groups which proposes to speak for all of the sanitary engineering professors. As an example, such an organization was recently formed when the radiological health group established themselves as a Conference in the American Public Health Association. In this way they do not have to wait on full-fledged board approval, adoption, and action by APHA before they can call meetings to discuss various problems of mutual interest and actually take action. Of course, many possibilities existed initially, and I hope that your actions have not caused a division between North and South, East and West, or the haves and have nots. I took your comment regarding pressure groups as unprofessional and certainly political.

At least I admire you for being frank enough to write what you think. Even this type of castigation may have some beneficial result in that it may cause many of our people to do some serious thinking. I am still hoping that you will see the need for a sanitary engineering professors' organization. The next time you are in Texas, why don't you give me a ring and I will meet you half way. Best wishes and good shooting.

Sincerely,

Earnest F. Gloya
Professor
Environmental Health Engineering

EFG:as
blind cc: Dr. Erman Pearson
Mr. Harvey Ludwig
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA 91106

W. M. KECK LABORATORY OF
ENVIRONMENTAL HEALTH

26 May 1965

Dr. Harvey F. Ludwig, Chairman
ASEIB Subcommittee on Criteria for
New Sponsoring Organizations
c/o Engineering-Science, Inc.
150 East Foothill Blvd.
Arcadia, Calif. 91006

Dear Ludwig:

Your letter of 19 May 1965 was addressed to members of your Subcommittee, with copies to all members of the Ad Hoc Reorganization Committee of ASEIB. The comments of both groups were solicited. The following suggestions are offered to improve the first draft of your proposed report, which for the most part I find to be excellent.

1. Under A(1) in addition to the dates, I suggest that you tabulate the total membership of each organization and the approximate number who are, or could reasonably be assumed to be, sanitary engineers. You can get these figures from the secretaries of the various associations. For example, in ASCE we know the total membership and the number registered in the Sanitary Engineering division. When you get these figures, I'm sure you'll find that each organization has at least 500 sanitary engineers (except for AIChE).

2. Under A(2), part (a) should read .... "national or international in scope."

3. Under A(2), part (d) should read .... "of which a significant percentage" etc. instead of "only a small percentage" etc.

4. Under B(1)(e) change "not even bothered" to "failed."

5. Under B(2) some mention should be made of the fact that ECPD (itself an umbrella organization) has indicated a great deal of interest in ASEIB and in fact has listed ASEIB among a select group of organizations that are privileged to recommend members for ad hoc visiting teams for accreditation. In this respect ASEIB has achieved a notable standing among professional organizations.

6. Under B(1)(e), C(3)(b), and D(2) please spell likelihood correctly. After all, anyone with an honorary doctorate should be expected to spell correctly.
7. Under C(3) the following qualifications should be added:
   
   (c) The organization should have at least 500 members of whom over 250 should be bona fide sanitary engineers or scientists.
   
   (d) The organization should be representative of the entire sanitary engineering profession and not a narrow segment thereof, e.g. it should not be restricted to federal, state, or local employees, to consulting engineers, to teaching or research personnel, to equipment promotion operation, etc.

8. Under D., have you considered:
   
   1. The American Industrial Hygiene Association
   2. The Conference of State Sanitary Engineers
   3. The Conference of Water Pollution Control Administrators
   4. The Consulting Engineers Association
   5. The Water and Sewage Works Manufacturers' Association

Quite obviously, few of the associations listed under item 8 qualify under item 7. Neither does the American Association of Professors in Sanitary Engineering.

I trust that these suggestions will be of some value to you and your subcommittee.

Sincerely yours,

Jack

J. E. McKee
Professor of
Environmental Health Engineering

JEM:j s
cc: Subcommittee Members
    Ad Hoc Reorganization Comm. Members
E.3 AAPSE AND AAEE

(letter 2: J. M. McKee on Ludwig initiative for AAPSE Sponsorship of ASEIB)

(this was a ditto copy of a one page typed document with no title or reference as to distribution)

The American Association of Professors in Sanitary Engineering (AAPSE) is struggling desperately for members and for recognition—especially for recognition. It must establish a raison d'être or otherwise it will perish.

AAPSE is the brainchild of Harvey Ludwig. He strived for years to create it. Finally, in December 1963, a small hand-picked group of professors voted to establish the organization (despite the protestations of Professors Eliassen, Gottaas, and McKee). The organization has been strikingly unsuccessful. Out of 500 or more potential candidates, the membership on 7 May 1965 was only 35 (as stated by the secretary). Most of the leading professors in sanitary engineering have refused to join.

AAPSE will die a well-deserved death if it fails to be recognized or to produce any beneficial action. To date its accomplishments are close to nil. Harvey Ludwig and the officers of AAPSE are striving desperately to justify its existence and to get some recognition for the organization.

With respect to new sponsoring organizations of ASEIB, please consider that:

1. AAPSE has only 35 members. It is not representative of the sanitary engineering teaching profession because over 90 percent of the professors in sanitary engineering have been reluctant to join.

2. Professors are already well represented on ASEIB. Of the present 24 board members, 8 are professors. One of the sponsoring organizations is the American Society for Engineering Education, which is the logical organization to represent all professors in sanitary engineering. If AAPSE should become a sponsoring organization of ASEIB there would be even more professors on the Board. Already they represent far more than their percentage in the sanitary engineering profession.

To summarize, I urge you to support my suggested amendments to the first draft of the report of the ASEIB Subcommittee on Criteria for New Sponsoring Organizations

J. E. McKee
(LETTER 3: Kiker to McKee on Origin of ASEIB)

COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING
EXTENSION 2121

Dr. J. E. McKee
Professor of Environmental Health Engineering
California Institute of Technology
Pasadena, California

24 June 1965

Dear Jack:

I am an acknowledged coward who tries to stay out of controversies. As one who contributed initially to the formation of ASEIB, and participated actively in most deliberations concerning it from 1952 to 1961, the last thing I would want to do is to become involved in possible differences between ASEIB and AAPSE. However, I do not like to see anyone criticized unjustifiably and having had an occasion to see a copy of a recent communication from you to Paul Purdom, I feel that I should put in my two cents worth.

Reference is made to the statement that "AAPSE is the brainchild of Harvey Ludwig." I was not aware of that, but was not at all surprised either. Equally as significant, however, is the point that Harvey probably contributed more than any other individual to the creation of ASEIB. I believe Rolf Eliassen will agree with this statement and by means of a copy of this letter I am asking him to correct me if I am wrong. Although Rolf was the first one to contact me about a new sanitary engineering organization in 1952, my file on the subject (which is 16 inches thick) indicates that Harvey did most of the spadework in the preparation of no less than four drafts of material that culminated in the formation of ASEIB. This does not detract one iota from Rolf's function as the front-man, and he and Harvey together were one of the most effective teams I have ever seen. Other details of the early history, including Al Meyer's contributions, are given in an article starting on page 191 of the February 1957 AWWA Journal.

As regards the statement that most leading professors in sanitary engineering have refused to joining AAPSE, I have found that the main deterrent is simply that of the relatively high membership dues. These remarks are offered only with the view of being helpful and of setting part of the record straight. I hope you will accept them in that light.

Cordially yours,

John E. Kiker, Jr.
Professor of Civil Engineering

Copies to: Dr. Rolf Eliassen
Dr. Harvey Ludwig
Dr. E. Pearson
Dr. Paul W. Purdom, Sr
E.3 AAPSE and AAEE

(LETTER 4: Ludwig to Purdom on Sponsorship Criteria, p1 of 2)

ENGINEERING-SCIENCE, INC.

Harvey F. Ludwig, President
Russell G. Ludwig
Joseph L. Feeney
Leonard Melberg

150 East Foothill Boulevard
Arcadia, California 91006
Cable Address ENGSCI
Area 213 - 389-9381

1 July 1965

Professor P. W. Purdom
Chairman, Ad Hoc Committee on Reorganization, ASEIB
c/o Drexel Institute of Technology
College of Engineering and Science
Philadelphia, Pennsylvania 19104

Dear Walt:

This will transmit for your consideration the report of the ASEIB Reorganization Committee's Subcommittee on Criteria for Sponsoring Organizations.

The report is based on the draft originally sent out by me to the various members of the Subcommittee. Modifications were made in the draft as suggested by several members, and I believe the final document is a good consensus. It is worth mentioning that Jack McKee promptly distributed his own comments on my draft, so the Subcommittee members had the benefit of his views (as well as my own) in drafting their suggestions.

The only "strong" comments on the original draft were made by Jack McKee and Rolf Eliassen (neither of whom is on the Subcommittee), and the "force" of their comments was essentially to object to any favorable reference to AAPSE -- both, of course, have a record of strong opposition to AAPSE (as I have for it). As you know, I invited comments from all members of the Ad Hoc Reorganization Committee not on the Subcommittee -- of a total of 15 of these, only McKee and Eliassen responded.

Jack McKee, in one of his comments, suggested that one qualification be that the organization have not less than 500 engineer members nor less than 250 sanitary engineer members. Using these criteria, ASEE probably would not qualify. Also, McKee and some others suggest that a sponsoring organization be representative of the entire sanitary engineering profession and not just a segment of the profession -- Again, ASEIB would not qualify.

Ray Lawrence suggested a qualification for a sponsoring organization be that the organization be "well established and able and willing to finance the expenses of its representatives in connection with ASEIB activities." Although the record is poor with respect to financing, certainly this could well be a point for the board to consider in evaluating proposed new sponsors.

Jack McKee also asked why, in the original draft, consideration was not given to organizations other than NSPE and AAPSE. The reason, of course, is, to the knowledge of the Subcommittee, no other organizations have indicated interest in becoming sponsors. At the meeting of the Reorganization Committee on 10 May it was stated that NSPE and AAPSE expressed such interest.

For the record here I would like to record my personal situation with respect to AAPSE. I am not a member, and since the formal organization of AAPSE at Chicago I have not even received (nor seen) the organization's releases. I am strongly in favor of AAPSE simply because of my devotion to ASEIB. My own appraisal is that performance of ASEIB over the past decade has been less than satisfactory, that this has been due, more than to any other
single factor, to lack of any systematic support from the sanitary engineering professors, the ASEIB cannot hope to succeed in the future without such support from the professors, and that AAPSE is a long-needed progressive step in this direction. I believe the professors will be around ten years hence, and organized. My concern is whether there will be an ASEIB.

Sincerely,

Harvey F. Ludwig

Distribution


E.3 AAPSE AND AAEE

(LETTER 5: Ludwig to Pearson on AAPSE Sponsorship of ASEIB)

(this was a note hand-written on the backside of four coasters from Trader Vic's, one of Harvey Ludwig's favorite restaurants)

p1: 6 Feb., 66, Washington

Ermun:
At the ASEIB Board Meeting yesterday, I got through a resolution inviting AAPSE to co-sponsor the education conference with ASEIB, and except that some guys had left so that there were <16 there, I'd have got through a resolution inviting AAPSE to become a sponsoring organization for ASEIB. I feel we can do this in Sept., at the next Board

p2: meeting, provided enough guys show up = so I want you, personally, to write on this score, to every member of the Board you know, and have other AAPSE Bd. members do the same, so we'll not lose this opportunity in Sept. (The meeting will be held ______, presumably together with the Federation meeting). Please don't "mail me" on this. Make it a main issue with the Exec. Comm. of AAPSE, beginning immediately. And keep me tuned in. This very important for future of both ASEIB & AAPSE.

p3: So all out effort is indicated and the time is now. I got the Board (with Bro. Joe McCabe's help) softened up and the strategic time will be the Sept. meeting. Thanks to McCabe, by the way, for giving me strong support when I brought up AAPSE matters. You should write time a note of thanks and ask him to do what he can to make sure we've got 16 present in Sept. ready to vote yes on AAPSE. The Board at its meeting authorized formation of the AAEE (American Academy of Environmental Engineers) as a self-sustaining organization which here after will elect 1/2 the members of the Board of ASEIB (to be the Environmental Engineering Intersociety Board). Initial officers of the A²E² are to be named by the Board in Sept. Please give some thought to this as to "good nominees". This, too, should be a priority item for AAPSE's current business.

Harvey
February 6, 66
Washington

Dear [Name],

At the ASEIB Board Meeting yesterday, I got through a resolution inviting AAPSE to co-sponsor the education conference with ASEIB. And, except that some guys had left so that there were 1/6 there, I'd have got through a resolution inviting AAPSE to become a sponsoring organization for ASEIB. I feel we can do this in Sept., at the next Board meeting, provided enough guys show up. I want you, personally, to work on this since, of every member of the Board you know, all have other AAPSE Bd. members do the same, so we'll not lose this opportunity in Sept. (The meeting will be held [presumably together with the Federation meeting]. Please don't "fail me" on this. Make it a main item with the Exec. Comm. of AAPSE beginning immediately. Can keep in touch on this. This is very important for future of both ASEIB, AAPSE.

All out effort is indicated and the time is now. I got the Board (with Bro. Joe McCabe's help) softened up and the strategic time will be for Sept. meeting. Thanks to McCabe, by the way, for giving me strong support when I brought up AAPSE matters. You should write him a note of thanks and ask him to do what he can to make sure we get 16 present in Sept, ready to vote yes on AAPSE. The Board at its meeting authorized formation of the AAE (American Academy of Environmental Engineers) as a self-sustaining organization which hereafter will elect 1/6 of the members of the Board of ASEIB (to be the Environmental Engineering Inter-society Board). Initial officers of AAE are to be named by the Board in Sept. Please give some thought to this as to "good nominees." This, too, should be a priority item for AAPSE's current business.

[Signature]

P.S.
SECOND INTERNATIONAL CONFERENCE ON WATER POLLUTION RESEARCH
TOKYO, JAPAN
AUGUST 24-28, 1964

W. Wesley Eckenfelder, Jr.
International Steering Committee
P.O. Box 1023
Englewood Cliffs, N.J., USA

January 13th, 1964

Professor E. A. Pearson
Department of Civil Engineering
University of California
Berkeley 4, California

Dear Earnan:

At the last meeting of the International Conference Steering Committee the question was raised about sponsorship of future conferences. As you know, sponsorship in the United States and administration of our grant from the U.S. Public Health Service aiding in the support of this conference has been administered by the Water Pollution Control Federation. Member associations of the Federation have also served as sponsors in several other countries. At the annual meeting in Seattle the Board of Control of the Federation took action to invite the International Conference Steering Committee to become a permanent committee of the Federation. In this case the Federation would assume both financial and operating responsibility for future conferences. The Federation would further serve as a publication media for the Conference Proceedings.

I am enclosing a copy of a letter from Harris Seidel, President of the Water Pollution Control Federation. The contents of this letter are self-explanatory.

We have scheduled a meeting of the International Conference Steering Committee for Sunday afternoon, August 23rd, 1964. Since one of the issues to be discussed and agreed upon at this meeting is future conference sponsorship, I would appreciate your giving thought and consideration to the enclosed letter. It is hoped that opinions can be obtained by return mail on this very important issue prior to the Conference in Tokyo. Final action could then be taken in Tokyo.

Kindest personal regards,

W. Wesley Eckenfelder, Jr.
Chairman, International Steering Committee

Attachment

cc: Harris Seidel, Ralph Fuhrman March 13, 1964
May 12, 1964

PROPOSED ROLE OF AAPSE IN THE INTERNATIONAL CONFERENCE ON WATER POLLUTION RESEARCH SPONSORSHIP

After extensive discussions with many interested individuals, the following specific action is recommended for Board approval relative to the proper role of AAPSE in the future (3rd) International Conference on Water Pollution Research.

1. That AAPSE seek official recognition as one of two Co-Sponsors of the International Conference on Water Pollution Research (following the Tokyo meeting). The Co-sponsor is the Water Pollution Control Federation (WPCF).

2. The Co-Sponsor relationship for the International Conference shall recognize the areas of responsibility and authority as listed below. All policy decisions relating to primary roles of the Co-Sponsors shall be developed by representatives (one or two from each Co-Sponsor) designated by the Boards of AAPSE and WPCF and shall be submitted for official approval by the respective Boards.

These decisions shall be limited to the following specific items and such others as may be determined by mutual agreement:

a. Date and location of Conference meeting.
c. Need for an appropriate level of financial support for future International Conference.
d. Management of Conference budget.
e. Selection of other cooperating or sponsoring organizations.
f. Action to be taken relative to seeking recognition for the International Conference on Water Pollution Research as an independent international organization with membership in either the International Council of Scientific Unions or the International Union of Engineering Organizations.

3. The AAPSE shall be responsible for the development of the Conference Technical Program, selection of participants and general academic and research functions related thereto.

4. The AAPSE shall be responsible for the development of applications for supplemental financial support to augment a "core" International Conference budget

5. The WPCF shall be responsible for publication of Conference Proceedings preprints and general conference publicity.

6. The WPCF shall be responsible for general Conference arrangements including travel, local arrangement details etc.

Erman A. Pearson
MEMO: Board of Directors

FROM: Erman A. Pearson, President

RE: Proposed Role of AAPSE as Sponsor of the International Conference Water Pollution Research (Effective for 3rd Conference, 1966)

I am writing to solicit your official endorsement of my suggestion that I, as President of AAPSE, as well as Chairman of the American Committee and member of the Permanent Steering Committee for the International Conference on Water Pollution Research, take the necessary steps on behalf of the Association for assuming the American sponsorship function for the future conferences in collaboration with the International Conference Steering Committee.

As you may know, the International Water Research Conference Steering Committee has been approached by the Water Pollution Control Federation in a letter from the President, Mr. Seidel, a copy of which is enclosed, suggesting that the Federation take over the American sponsorship function for the International Conference and that this Conference function become a committee activity within the Federation. In other words, American leadership for the International Conference would be determined by the Federation President and would become a Committee activity within the Water Pollution Control Federation, provided the American representatives and the International Steering Committee accept the Federation's request. Along with the request for sponsorship are the rights (and responsibility) for publication of the conference Proceedings, as well as the handling of all details and program planning for the Conference.

Some of you have served on the American program planning committee for the International Conference and are aware of how that organization has functioned, at least in a general fashion. In summary, the American Committee has acted more or less as a solicitation and review committee for technical papers, forwarding to the three Section Chairmen the Committee's recommendations as to papers that should be accepted for presentation at the Conference, as well as suggestions for discussers. I don't know how each of you evaluate the performance of the American Committee, but speaking as its Chairman (although I was in Norway last year and was not intimately in contact with the actual workings of the Committee), my impression has been that beyond solicitation and recommendations for papers, the American Committee had relatively little responsibility for Conference planning. Part of this was due to my absence and shortcomings as Chairman. However, most of the actual organization and decision making was left to the general Conference chairmen (which for this conference is Professor Eckenfelder), Mr. Berger, the permanent Secretary, and the various Section Chairmen who made the final selection of papers. These individuals subsequently met with the executive committee of the Conference Steering Committee to select discussers from recommendations of various individuals and groups.

As an active participant in the first two Conferences, I believe that both the organization and handling of the Conferences can be improved; however, I have serious reservations as to how it might be handled if the Federation were to take over this function. Obviously, what happens to the International Conference will depend on the people participating in its development. Since this is strictly a research conference, the people who control it should be logically the active researchers in the field. If there is any group that the American Association of Professors in Sanitary Engineering truly represent it is essentially the academic community that is responsible for the bulk of the research conducted in this country and I will say that this is true the world over. There are a large number of reasons why AAPSE should be the American sponsor, a few can be indicated as follows:

1. The Association represents the largest group of active research workers who play the dominant role in the Conferences.

2. AAPSE sponsorship (professorial vs. sewage works) has a high prestige value which may be extremely important in obtaining future financial support from organizations such as NSF, NIH, etc. (Note that Wave Council has obtained significant NSF support for a conference in Japan this year)

3. The professorial prestige factor is even more important relative to foreign support for such conferences
4. Sponsorship of a going international conference would put AAPSE in active positive work in a significant fashion.

5. By proper management of the Conference and publication of first class Conference Proceedings, it may be possible to provide some financial income to the Association treasury.

6. In my judgment the International Conference Steering Committee needs a drastic shakeup - most of the foreign members taking little active interest in developing support for the Conference. This is because most of them were captive members because of their position - not interest or willingness to do any work on behalf of the Conference. Selection of appropriate academic members in foreign institutions may be an answer because they, by virtue of their position, have an active interest in developing research and research participation.

7. I honestly believe that AAPSE sponsorship would be much more active and would produce a high caliber research conference than if it was left in the hands of the Federation, recognizing at the same time the great value of the Federation in the water area generally.

I, as well as Professors Gloyns and Kaufman, recommend that the Board authorize me to take such action that may be necessary to bring about a formal agreement with the American Subcommittee and/or the International Steering Committees for AAPSE to become the American sponsoring group for the International Conference. Under this agreement the AAPSE Board would select the American representatives on the Steering Committee.

I hope I can have your early approval of this proposal so that I can actively pursue official endorsement of AAPSE as the American sponsoring group for the International Conference on Water Pollution Research.

Earman

EAP/eh
APPENDIX F.1 STEADY STATE AAPSE/AEEP
   DOC 1: AAPSE Objectives
   DOC 2: Scope of AAPSE Agenda
   DOC 3: Policy Development in 1970

APPENDIX F.2 STEADY STATE NEWSLETTER ARTICLES
   DOC 1: The Education Conferences - 1960 AND 1980
   DOC 2: Congressional Testimony on Exploratory Research Budget
   DOC 3: Description of AEEP
THE SCOPE, OBJECTIVES AND ACTIVITIES OF THE
AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING
(AAPSE)

DECEMBER 2, 1966

The general objective of the American Association of Professors in Sanitary Engineering is the strengthening and advancement of the sanitary engineering profession. It is believed that the advancement of this profession will lead to better solutions of the nation's problems in the utilization of its natural resources. It is also believed that a profession advances by the services it gives its members and by the professional contribution they in turn make to society. The specific objectives of the Association are set forth below in sufficient detail to identify clearly the role and function of AAPSE. Along with each objective is a capsule description of the program activities under way associated with or directed toward each objective.

1. AAPSE presents a unified position in support of sound sanitary engineering policies that bear on questions concerned with natural resources at the local and national level.

AAPSE has appeared officially before several committees of congress on behalf of legislation and appropriations serving the objectives of sound water quality management.

2. The association is developing long-range plans concerning sanitary engineering education and has been working with state and federal agencies and professional and scientific societies concerned with engineering education to implement these plans.

As an initial step in this area AAPSE, in cooperation with EEB, has developed a register of academic education and research programs in the field of water quality management. The register includes statements of academic objectives as well as the production of graduate degrees during the past 15 years.

A second step in educational planning is the organization of a national sanitary engineering conference for all institutions with graduate academic programs in water quality management for the purpose of delineating the most appropriate educational objectives and establishing research goals. This conference is scheduled for August of 1967.

3. The Association assists federal and state agencies through advisory and consultative groups in the development of programs related to the education of sanitary engineers and scientists in water quality management.

AAPSE has met with various federal agencies to delimit the areas of mutual support, educational development and research potential and application. The meeting today is an example of our interests in this direction. Moreover, AAPSE and its members have been working in cooperation with international agencies (UN, UNESCO, WHO, PAHO, IAWPR, and others) in the developments in this area.

4. The Association assists its members as well as all members of the water quality teaching profession in improving their academic programs, both with respect to teaching and research.

A recent example of activity in this area is the development and staging of an educational workshop held for young professors at the University of Texas. The response to this workshop was exceedingly favorable and a second workshop is being planned.

As another example of AAPSE activity in encouraging outstanding teachers, it recently awarded its biennial Distinguished Faculty Award of $1000 to a young professor at Stanford University.
5. The Association provides an information service that keeps its membership informed on developments in the field of natural resources at the national and local levels.

AAPSE is producing currently two regular publications to keep its members and interested parties informed on the activities of the academic community. This is accomplished by regular publication of the AAPSE Newsletter. Members are kept informed about the activity in government at both the federal and state level by regular publications of the AAPSE LEGISLATIVE NEWS. A related publication activity of AAPSE will be maintaining current the Register of Academic Programs in Sanitary Engineering which has just been released.

6. The Association will establish policies on matters involving the interests of the sanitary engineering profession and the functions of those pertinent professional and scientific societies in which the water quality management is of a significant concern.

AAPSE has been active and influential in focusing the academic community's attention at each of its member's institutions, and in fact in all institutions participating in the Register of Sanitary Engineering Programs, on the educational and research programs in water quality management. AAPSE has also been active in increasing participation of biologists and chemists in the traditional engineer-dominated field of waste disposal and water quality management.

7. The association serves at the U.S. base for international research and educational interests directly related to sanitary engineering education and research.

As of January 1967, AAPSE will be one of the official sponsors of the USA National Committee for the International Association on Water Pollution Research. Professor Eckenfelder (AAPSE Board Member) was the first President of IAWPR and Professor Pearson (AAPSE's first President) is currently President of IAWPR. It is hoped that individual members of AAPSE will play a prominent role in the editorial review and referee process for the new International Journal on Water Research.

AAPSE is currently an agent in developing academic visitation programs for distinguished foreign engineers and scientists in water quality management.
MINUTES OF BOARD MEETING
AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

December 14-15, 1970
at
New York, N.Y.

The AAPSE Board of Directors met from 1:45 PM to 10:00 PM on Monday, December 14, 1970 and from 8:00 AM to 11:05 AM on Tuesday, December 15, 1970 at the Sheraton Inn, LaGuardia Airport, New York, N.Y. Board members present were: Rustin, Baumann, Echelberger, Jenkins, Leehr, O'Connor, Pipes, Pohland, Skrinde and Weber.

December 14, 1970

President Baumann welcomed Echelberger, Jenkins and Pipes as new board members and charged them with the challenges of AAPSE and its commitment to the profession. Minutes of the Open Membership Meeting and Board Meeting held at Boston, Mass. in October, 1970 were approved as written. The previously distributed financial statement of September 1, 1970 was updated and will be finalized and sent to the board in preparation for inspection by the Audit Committee. The loss of membership by delinquent members will be reflected by the new membership roster to be distributed to the membership in January, 1971. The treasurers report was accepted as modified.

Election of 1971 Officers

Prior to requesting nominations for officers for 1971, President Baumann reviewed some of the decisions reached at the previous annual board meeting relative to a desire for continuity of succession of the Vice President to the presidency of AAPSE. Although it was not the intention for such a procedure to become binding on other board decisions in the future, its desirability was particularly apparent for the coming year. Accordingly, Ray Leehr, was nominated and unanimously elected President for 1971. Upon election, Ray Leehr indicated his concern for maintaining flexibility of election of officers and reaffirmed the responsibilities of other board members in aiding the president in the conduct of his duties to AAPSE.

Walter Weber was subsequently elected Vice President and Fred Pohland was re-elected Secretary-Treasurer. Both Walt Weber and Fred Pohland indicated their desire for the Board's re-consideration of other candidates for these offices with Walt being concerned about his impending leave of absence to Australia and Fred because of his already completed term in the office of Secretary-Treasurer. After some discussion both were persuaded by the Board to accept their respective nominations. Bob Baumann then charged the new officers with their responsibilities and emphasized the need for active participation by other board members in the affairs of AAPSE.

Preliminary Discussions of 1971 Program - AAPSE Policy Meeting

Ray Leehr reviewed the activities and report of the AAPSE Policy Meeting held in Washington, D.C. on November 19, 1970 with Drs. O'Connor, Skrinde, Weber and Leehr participating. After considerable discussion, the minutes of the Policy Meeting were accepted as an appropriate reflection of the Board's policy toward its responsibility to the AAPSE membership and the profession and would thereby serve as a basis for future action and committee organization for the coming year. Accordingly, committee appointments will reflect Board action on the recommendations of the Policy Meeting report.

Coupled with the discussion on the 1971 program, John Austin reviewed present trends in operator training as per his memorandum of April 27, 1970 and more recent information made available to the Board. It was agreed that operator training should be an AAPSE concern and be included as a committee activity during 1971.
Final 1970 Committee Reports and Discussion

Awards Committee - R. O. Sylvester
President Baumann indicated that Dick Speece had been selected to receive the 1970 AAPSE outstanding young educator award to be presented at the 1971 Industrial Waste Conference at Purdue University. Publicity for the event will be handled by Ernie Gloyna via the awards committee.

Education Committee - D. A. Carlson
No report was available and concern was expressed regarding the precise function of this committee. The President elect was to consider this problem in his 1971 committee assignments.

Educational Resources - Register Committee - R. W. Christman
The make-up of the register and appropriate charges for being included in the register were discussed and considered in need of review by the committee as a 1971 task.

Eligibility Committee - B. H. Kornegay
The activities of the eligibility committee were reviewed with respect to new member to be reflected by the new AAPSE membership roster. The desirability of combining eligibility and membership responsibilities under the same chairman was discussed and recommended by the Board for 1971.

Legislative Analysis Committee - W. Kaufman
The valuable services of the chairman and his committee to AAPSE in the past were recognized. However, due to the effort involved and a need for better and more rapid coordination of events, activities previously ascribed to this committee were considered to be more of a responsibility of the AAPSE officers and Board of Directors. Committee and Board activities for 1971 were to reflect this position.

Membership Committee - J. T. Pfeffer
The Secretary-Treasurer announced the resignation of the committee chairman (Pfeffer) from AAPSE and requested the appointment of the Eligibility Committee Chairman (Kornegay) to serve in this capacity in 1971. Members delinquent for non-payment of dues were identified and the new membership roster would reflect the removal of these individuals from AAPSE membership rolls. After considerable discussion concerning proper representation of AAPSE or the U.S.A. National Committee, the previous services of Ernie Gloyna were recognized with appreciation together with the appointment of the following individuals as AAPSE committee representatives:

D. J. O'Connor - Chairman (1971-72)
W. J. Weber, Jr. - Vice Chairman (1971-72)
R. O. Sylvester - Alternate (1971-72), member (1973-74)
W. J. Kaufman - Alternate (1971-72), member (1973-74)

All committee terms were set for January 1 to December 31 of the indicated periods.

Visiting Lecturer Committee - J. Malina
It was announced that Ken Ives, University College, London was selected as the AAPSE Visiting Lecturer for 1971. Requests for expressions of interest by programs throughout the country have been distributed. It was also considered appropriate for the committee to review the benefits of the programs and to consider the advisability of continuation in the future.
Newsletter Committee - B. Dysart
The Board recognized the excellent services of the editor of the Newsletter. Titles of theses were considered as desirable for publication as was Bob Snider's Boston presentation to the membership. It was also considered desirable to send the Newsletter to all departmental chairman, to directors of water resources centers and to as many key governmental official in the field of Environmental Engineering as could be identified. The topic of news releases to appropriate journals, universities and related agencies was also considered an appropriate new activity to be conducted by the Newsletter editor.

Nominating Committee - B. Kaufman
The vital function of the nominating committee was reviewed in light of recent AAPSE elections. Strengthening of this committee for 1971 was considered desirable.

Research Committee - W. J. Weber, Jr.
The previous activities of the Research Committee and its efforts to establish an AAPSE policy toward research in the field were discussed. In light of the report of the Policy Meeting of November, 1970, further activity of this committee was deferred pending reconsideration by the Board at a later date.

Relations with the U.S.A National Committee - P. A. Krenkel
The minutes of the U.S.A. National Committee of the International Association on Water Pollution Research were introduced by President Baumann as written by Robert Canham, Secretary-Treasurer. These minutes indicated that Krenkel (USANC Technical Program Coordinator), Weber, Echenfelder and Baumann were present to represent AAPSE interests. In these minutes, Chairman Berger recognized Bob Baumann who questioned the ambiguity of tenures of USANC officers and the uncertainties associated with organization representation to USANC.

Seminar Committee - L. Canter
The lack of participation of the membership and guests at the AAPSE seminar in Boston as compared to the successful endeavor at Purdue was discussed. In consideration for future programs, the committee was to be instructed to review present procedures of selecting topics and speakers and providing necessary planning and publicity. It was considered mandatory to select timely topics of concern primarily to sanitary engineering education. Minutes of the 1970 Seminar Committee have been distributed to the Board.

Workshop Committee - W. O. Pipes, J. Scherfig
The 1971 AAPSE Workshop will be held at Newport Beach, California, June 21-23, 1971 on "Treatment Plant Instrumentation and Automation." Attendance at the previous workshop was 22 professors and 19 speakers. Some concern was expressed over the decrease in attendance and the committee was to be instructed to consider this in future deliberations. An appropriate site and topic for the succeeding workshop were to be announced at a later date.

Publication Committee - J. Malina
Special recognition of the service provided by the University of Texas with respect to establishing a central depository for AAPSE records and publications was to be extended to the chairman of the publications committee. It was anticipated that transfer of pertinent publications and records would be completed during 1971.

Laboratory Manual Committee - J. O'Connor
A special report of the Laboratory Manual Committee has been distributed to the AAPSE membership which included a report of the meeting at Boston in October, 1970, a listing of committee representation and a finalized Table of Contents for the manual and an identification of committee members to whom experiments should be sent. Specific assignments have been made and more evidence of committee activities should be available in early 1971.
Special Reports

President Baumann read letters from Rayne Placement Organization and Roy F. Weston concerning job opportunities and aerospace retraining respectively. Recent FWQA interests and developments in the latter were discussed but action was deferred pending receipt of additional information.

Don O'Connor delivered his "farewell address" to the Board, exhorting its members to respond responsibly to the opportunities and challenges of the time and to carry forth the tradition of AAPSE with dispatch.

December 15, 1970

Ray Loehr opened the meeting with a brief review of his philosophy concerning AAPSE and its responsibilities to the profession and his intention to promote the board as the action arm of the organization with direct responsibilities and by liaison to the various committees. He further announced that Dale Carlson had chosen to resign from the Board due to other pressing responsibilities after which Waldron McClellon was duly elected to complete his term of office in consideration of the report of the AAPSE Policy Committee and subsequent correspondence from the President elect, the following committees were appointed as working committees for 1971:

Education ("blue-ribbon") Committee

D. J. O'Connor, Chairman
R. C. Loehr, Board Contact Member

A special committee formulated to suggest a policy that AAPSE should follow over the next few years concerning environmental engineering education. Items for consideration will include:

- an undergraduate degree in environmental engineering
- better ways to meet manpower needs of the future
- guidelines for input to the "environmental generalist" area
- guidelines for continuing education activities
- integration and training of professionals of other disciplines in environmental engineering

Expenditures of funds for an action meeting by the committee was authorized and a report was to be made available to the board by the May, 1971 meeting at Purdue.

Operation Committee

Raymond Kipp, Chairman
F. G. Pohland, Board Contact Member

A committee developed to coordinate the activities of the following three committees:

Publications Committee - Joe Malina, Chairman
Audit Committee - Ed Thackston, Chairman
Arrangements Committee - (chairman to be named)

The committee will be composed of the chairman and the chairman of the three component committees which will continue to function as before.

Visiting Lecturer Committee

Joe Malina, Chairman
Wayne Echelberger, Jr., Board Contact Member

A committee responsible for consideration and selection of one or two AAPSE visiting lecturers each year, solicitation of participation by interested institutions, and arrangement of associated travel and itinerary.
Operator Training and Continuing Education Committee
Kenneth D. Kerri, Chairman
Waldron McEllon, Board Contact Member
A new committee appointed to develop guidelines for educational activities in environmental engineering continuing education and operator training including such activities as to:

- suggest types of institutions, i.e., professional or non-professional, private or public, that should be involved.
- suggest typical curricula and level of courses
- comment on the personnel who should be involved in training, i.e., course instructors
- suggest how AAPSE may best function in this education arena, i.e., what activities should it undertake, actual courses, seminars, workshops, conferences.

Newsletter Committee
Benjamin C. Dysart, III, Chairman
John Austin, Board Contact Member
A committee responsible for publication and distribution of the AAPSE Newsletter and soliciting and preparation of special news releases concerning AAPSE activities.

Awards Committee
Peter A. Krekel, Chairman
Rolf Srinde, Board Contact Member
A committee appointed to review and establish selection criteria and to solicit nominations and select the recipient of the AAPSE biennial award for Outstanding Contributions to Teaching Sanitary Engineering Theory and Practice.

Register Committee (Education Resources Committee)
Russel F. Chriestmann, Chairman
Rolf Srinde, Board Contact Member
A committee appointed to advise the Board of Directors on needed action concerning the AAPSE Register, to handle requests and inquiries regarding inclusion in the Register, to advise on possibilities of a supplemental section of the Register for any changes or new programs, and to suggest appropriate timing for a new edition of the register.

Undergraduate Environmental Education Committee
James E. Foxworthy, Chairman
David Jenkins, Board Contact Member
A committee appointed to develop guidelines for educational activities in the environmental generalist and engineering areas at the undergraduate level including such activities as to suggest:

- the role of engineering in the training of environmental generalists
- methods to increase the environmental engineering content of undergraduate engineering programs
- institutional arrangements to train environmental engineers at the undergraduate level
- typical curricula and level of courses for both of these areas
- how AAPSE may best function in these educational areas

Manpower Needs Committee
Eddie J. Middlebrooks, Chairman
Wesley O. Pipes, Board Contact Member
A new committee appointed to delineate manpower needs of the profession and develop suggestions to meet these needs including such activities as:

- to provide a profile of practicing environmental engineers
- to determine the needs for environmental engineers in education, private practice, government and private research organizations
Seminar Committee
George P. Hanna, Chairman
Wesley O. Pipes, Board Contact Member
A committee appointed to arrange programs for seminars at meetings attended by AAPSE members.

Ad Hoc Laboratory Manual Committee
J. T. O'Connor, Chairman
W. M. McLellon, Board Contact Member
A committee appointed to prepare a laboratory Unit Operations and Processes manual for water and wastewater treatment.

Ray Loehr announced that the final composition of the various committees for 1971 will be announced at a later date and after consultation with the selected chairmen of the respective committees.

The Secretary-Treasurer was requested to consider possible changes in the AAPSE Constitution and ByLaws for consideration by the Board at the Board meeting in May, 1971.

There being no further business, the meeting was adjourned at 11:05 AM.

Respectfully submitted,

Frederick G. Pohland
Secretary-Treasurer

FGP:jw
MINUTES OF THE AAPSE INTERIM POLICY MEETING

A meeting was held on November 19, 1970 in Washington, D.C. to discuss a number of policy items pertinent to AAPSE activities. The participants at the meeting were: R. C. Loehr, D. J. O'Connor, R. Srinde, W. J. Weber. This summary of the discussions at that meeting is intended to serve as items for discussion at the next Board of Directors meeting.

1. Initial discussion focused on factors affecting AAPSE policy decisions. These were:
   a) A change in the complexion of the leadership in the profession and in AAPSE
   b) A dilution of classical sanitary engineering and the need to interact with other disciplines
   c) Current needs of the profession

2. The continuing discussion focused on how AAPSE could be of service to its members and to the profession. These activities were seen as different but overlapping. AAPSE should emphasize these service activities to its members and to other groups.

3. The principal functions of AAPSE were agreed to be:
   a) To provide leadership and guidance in environmental engineering education. AAPSE can work quickly and effectively in response to changing educational opportunities as well as working on long range educational policy and planning needs of the profession. An illustration of the quick response is the recent activity involving the conversion of excess aerospace and nuclear engineers to environmental engineering.
   b) A voice from the educational area to agencies and organizations involved in policy decisions affecting environmental engineering education. The changing nature of environmental engineering education and the pressures for such education at all levels will increase. There is a strong need to provide a forum for discussions of these changes and needs. AAPSE can be the source of leadership in this area and its activities can be a forum for the discussions.

4. There is a need to avoid any inhibitions on participation with other organizations. AAPSE needs to keep its engineering identity and philosophy but should be more aggressive and positive in improving its leadership in the profession.

5. AAPSE could develop guidelines to advise curriculum changes for programs in the environmental generalist area and in the environmental engineering area. The evolutionary nature of environmental engineering education should be kept in mind in developing such guidelines.

   These activities would express AAPSE opinion of the needs of the future with suggestions for changes of curriculum in these areas. Similar activities would be needed in the para-professional and continuing education areas of environmental engineering as well as in graduate and undergraduate education.

   These guidelines would be made available to university administrators and other interested organizations. In this manner, AAPSE would be of service to the profession and assist its members at their institutions in their leadership role.

6. The role of AAPSE as participating in research policy decisions was not able to be well-defined. AAPSE research objectives were unclear.
It was suggested that an AAPSE committee be formed to consider how AAPSE should provide the necessary leadership in this area, and how it could implement the aims that are developed. It was felt that AAPSE should play a role in advising on the necessary research policies for environmental engineering research in the nation including suggesting areas of short and long term support and levels of support or priorities for basic, developmental, and full scale research activities.

This was felt to be too large for the existing AAPSE structure. AAPSE could take a leadership role in working with other groups to define these policies.

7. AAPSE should take a more positive role in delineating the manpower needs of environmental engineering education and in suggesting approaches to meet these needs.

8. AAPSE should re-establish ties, preferably at the working committee level, with other organizations interested in similar activities. Suggested organizations were AAEIB, ASEE, AAAS and NAE. Lay groups such as the Sierra Club and the League of Women Voters also should be continually made aware of AAPSE suggested policy in the environmental engineering and research areas.

9. AAPSE Board members should be used more effectively to carry out AAPSE activities, especially as liaison to AAPSE committees, but should have committee chairmanships only in unusual cases. Board members would have responsibility for seeing that specific committees functioned as needed.

More AAPSE members should be involved in AAPSE committees with the chairmen carefully picked to assure that the committee charges are fulfilled. The number and type of committees should be changed to reflect the above suggestions.

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Specific policy action items suggested for Board action are:

A. The following committees should be instituted:

a) A "blue ribbon" committee to suggest suitable policy that AAPSE should follow over the next few years concerning environmental engineering education. This committee would be made up of past Board members and other AAPSE members and would consider items mentioned in paragraphs 1 through 5 above. The committee would be requested to have initial suggestions by December 1971. Funds would be made available to hold a meeting of this group.

b) An ad hoc committee to delineate the research objectives and policies for the profession and for AAPSE. The committee would be small but comprised of a mixture of younger as well as more experienced AAPSE members. Its charge would be to consider the items mentioned in paragraph 6 above as well as the following items:

- to determine and define what would constitute a reasonable national research program that benefits both the research and educational needs

- methods for agencies to evaluate and make decisions concerning priorities and funding of needed research

This committee would be charged to report their initial suggestions in six months. Funds would be provided for a meeting of the committee. It was suggested that the committee consider the possibility of a larger meeting or a conference of knowledgeable individuals throughout the profession to prepare more detailed guidelines for the profession. Outside funding would be required for this purpose.
c) A working committee to prepare guidelines for undergraduate and graduate environmental engineering education for both generalists and engineers (See paragraph 5).

d) A working committee to prepare guidelines for environmental engineering education for para-professional and continuing education activities (See paragraph 5).

e) A working committee to delineate the manpower needs of the profession and to develop suggestions to meet these needs.

B. The existing committees should be dropped or combined for better organization if the above committees are instituted.

Dropped - Education Committee, Educational Resources Committee, Legislative analysis Committee, Research Committee, and Governmental Agency Liaison Committee

Combined - the Publications, Audit, and Arrangement Committee into a new Operations Committee

C. The Seminar Committee activities should be critically reviewed by the Board to determine how to make the committee more effective.

D. Each Board member should have specific responsibility for the activities of certain AAPSE committees to see that the committee functions as desired. A Board member would be an ex-officio member of these committees.

E. AAPSE should continue to have meetings devoted solely to policy matters, preferably at least once a year, but as necessary to crystallize policy or action. Committee chairmen may be asked to join with members of the board at these meetings to stimulate their action and to obtain their thinking.

F. Meetings of small groups of the AAPSE Board with selected agencies and organizations should be an operational policy, especially when specific policy terms are to be discussed and also in response to changing needs. The winter Board meeting need not be the only meeting of this type. Authorization should be given to the President to have such meetings as required.
PRESIDENT'S CORNER

One of the most important responsibilities of the Association of Environmental Engineering Professors is the educational programs devoted to protecting the environment of our nation. Article 2.03 of our bylaws state:

"The objectives of the Association shall be to develop long-range plans concerning education in the fields of sanitary engineering, water and air resources, environmental health engineering and related fields, and to implement these plans by working with professional and scientific societies and state and federal agencies."

In keeping with our goals, the Board of Directors of AEEP authorized the fourth National Conference on Environmental Engineering Education and assigned responsibility for this conference to the Education Committee. It is planned that the conference will be held during Spring or Summer of 1980 at the University of Texas Austin.

To provide perspective for the Fourth Conference let us make a brief visit to Cambridge, Massachusetts during the summer of 1960. We should note that twenty years will have passed since the first National Meeting held at Harvard University. Thomas R. Camp on June 27, 1960, stated in his introductory remarks at that meeting:

"The objectives of this conference are twofold: first, to study the present and future educational needs of sanitary engineers in order to develop graduate curricula and general course contents and objectives to meet these needs; and second, to explore the advisability, the feasibility, and methods of accrediting master's degree programs in sanitary engineering."

The 1960 conference closed with a series of resolutions with the following being directly concerned with education programs:

Resolution on Accreditation

The following resolutions were approved unanimously by the conference:

1. A.S.E.I.B. should endorse the accreditation by E.C.P.D. of graduate programs in sanitary engineering, including other engineering programs in sanitary engineering related to environmental health, beginning with Master's programs.

2. To be accredited in sanitary engineering, including other engineering programs related to environmental health at the graduate level, shall not have to offer instruction in more than one of the fields considered by the conference.

3. A resolution favoring these positions should be transmitted to E.C.P.D.

4. The resolutions and recommendations of this conference should be submitted to E.C.P.D. as guidelines or general criteria for the accreditation of suitable programs.
Resolution on length of Study for M.S. Degree
It was resolved that the time length of graduate instruction or continuation study for the first degree in sanitary engineering and environmental health be one calendar year rather than academic year.

Resolution on Thesis Requirement for M.S. Degree
It was resolved that each institution shall be free to require the preparation of a thesis for the first degree in sanitary engineering and environmental health.

Resolution on Common Core Courses
It was resolved that for the graduate program in Water Resources Engineering, Air Resources Engineering and Environmental Health, the following courses would constitute a common core for each program: Chemistry, Microbiology, Radiological Hygiene, Statistics & Epidemiology.

There is no doubt that this conference and the following two at Northwestern and Drexel Universities were important in the development of long range educational policy and programs in our field. The influence of some of the 1960 resolutions are apparent today in our educational programs. These programs, however, are and must be dynamic in nature, ever-changing to meet the needs and challenges of the future. The purpose of the proposed 1980 Conference will be to provide guidance for the educational programs of the future.

The AEEP Meeting on Tuesday evening at Purdue this year will be devoted to the 1980 Conference on Environmental Engineering Education. I hope to see you all there so that we can begin to plan our future together.

Bruce Hanes
Tufts University
F.2 NEWSLETTER ARTICLES

(NEG 2: Congressional Testimony on Exploratory Research Budget, p1 of 2)

AEEP NEWSLETTER

PUBLISHED THREE TIMES YEARLY BY AEEP

VOLUME 17, NO. 3  SEPTEMBER, 1982

PRESIDENT'S CORNER

AEEP Testimony President Francis A. DiGiano before the Subcommittee on HUD and Independent Agencies Committee on Appropriations of the United States Senate May 25, 1982

(Following are Selected Excerpts from Newsletter)

Our members are engaged in both short-term and long-term research related to EPA's Congressionally mandated mission. Short-term research focuses on narrowly defined, regulatory problems and is closely directed by EPA. Long-term research, on the other hand, is more exploratory in nature and anticipates problems which will be of concern to EPA in the future. These research efforts have always been vital to EPA and its predecessors in accomplishing their goals. Over the past 20 years, the educational programs I refer to have produced most of the environmental engineers who now work in industry, state and federal agencies, and consulting engineering firms.

AEEP is deeply concerned about the lack of direction in EPA's Office of Research and Development as evidenced by the lack of the EPA Administrator to nominate a new Assistant Administrator to fill the vacancy created over a year ago. Undoubtedly, these conditions have not only contributed to a lack of direction, but also to a FY 83 budget for R&D which is totally inadequate to meet the Agency's and the nation's needs.

The mandate of Congress, as set forth in several excellent pieces of legislation, emphasizes the need for research to solve the problems which stand in the way of achieving a clean and safe environment for the people. However, the signal being sent by EPA contradicts this mandate. AEEP deplores the continued weakening of EPA's extramural research program which has been reduced from 199 million in FY 81 to 189 mil in FY 82, and is now proposed to be cut to just 133 million in FY 83. Unfortunately, this comes at a time of great need for a sound scientific base for federal and state regulations.

A severe blow is being dealt to water quality research. It is our understanding that the 50 percent reduction in funding (13.3 mil, down from 28.5 million) includes elimination of all extramural research in such areas as the ecological effects of effluent discharges and the development of site specific water quality criteria for toxic pollutants. With regard to toxic pollutants, research on biological monitoring, standardization of toxicity tests, validation of predictive strategies, and establishment of safe concentrations are all needed for development of a sound policy which is neither overprotective nor underprotective of aquatic life. There is clearly an urgent need for scientific data to support EPA-developed water quality criteria, state water quality standards and the regulatory effort in general.

In order to provide the nation with a substantial base of fundamental research knowledge, Congress mandated that 15 percent of R&D funds be designated for this effort. EPA responded by establishing the Exploratory Research Program. Unfortunately, the best the Exploratory Research Program ever managed to get was 11 percent of the R&D budget. With the large R&D cuts proposed for FY 83, the most optimistic budget for this program is just 12.4 million. The University Grants Program component has been reduced from 26 million in FY 81 to 16 million in FY 82 and is now projected to be just 9 million in FY 83. This is a cumulative reduction of 75 percent and places it in a phase out mode according to some EPA program managers.

Also in jeopardy in FY 84 are the eight newly established, Exploratory Research Centers of Excellence located at universities. While these are to be funded in FY 83 (4 million), they remain vulnerable if the Office of Exploratory Research continues to suffer severe budget cuts. An important scientific resource, which can support EPA's mission, will be lost if this trend continues.
Drinking water research is being reduced from 21 million in FY 82 to 15 million in FY 83. Yet, at the same time, the GAO reports that 13,600 community water systems cannot meet any federal water quality standards unless these facilities are improved. It is especially discouraging that little of the extramural drinking water research in FY 82 was done by universities and much less is likely in FY 83. Yet, university research has been shown to be important. For example, leading university researchers were able to help establish scientific data on inadvertent production of trihalomethanes (a group of suspected cancer causing chemicals) in water treatment and methods of control, and this contributed to EPA's regulatory effort.

Despite recession and inflation, the public assigns a high priority to environmental protection. This is evident by the editorials and feature articles appearing in national magazines and leading newspapers. The need for improved scientific knowledge and for training of environmental engineers will continue regardless of the avowed shift of regulatory responsibility back to the states. The information is essential regardless of the regulatory agency.

University graduate programs in environmental engineering have much to offer in assuring progress in environmental protection. There are currently 1500 students being trained in water and wastewater engineering and another 1000 in air pollution control and environmental sciences. However, further reductions in R&D, especially in wastewater treatment technology and water quality effects, will erode administrative support for such graduate programs at many universities, dull student interest in environmental engineering and science careers, and threaten to re-direct the research interests of highly competent faculty away from environmental protection. A valuable national resource for scientific discovery and development of future leaders will be lost.

Protection of the environment is a national responsibility. We must maintain a viable, high quality base of external research and training as well as exploratory, long-term research even though the results may not be directly related to an immediate regulatory effort. In fact, it is likely that regulatory decisions reached on the basis of short-term research, which ignore examining all implications, could waste capital investments for pollution control equipment. For example, fine particles emitted into the atmosphere are not removed by in-place, electrostatic precipitators, yet these devices were required of industry before the recent results of exploratory research showed that fine particles are a health hazard. Now, new investments will be required to remove these particles.

Given the assumption that budget cuts are inevitable, the concerns expressed by AEEP can be lessened by:

- providing a better balance between internal and external R&D
- continuing fundamental, exploratory research.

Thank you.

Francis A. DiGiano, Ph.D.
President, AEEP
ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS
NEWSLETTER
PUBLISHED THREE TIMES YEARLY BY AEEP

VOLUME 20, NO. 1                      MARCH 1985

AEEP: A Brief Description

AEEP is an all-volunteer organization which works to effectively represent Environmental Engineering academic programs and faculty and provide some activities and services to its 300-plus members. These include:

- Policy statements to the U.S. Congress on legislation affecting environmental engineering programs
- Register of Graduate Programs providing a comprehensive listing of Environmental Engineering graduate programs and their faculties
- Workshops and seminars on important new technology or teaching approaches and research needs
- Enrollment survey which includes numerical data on graduate enrollment trends in the profession
- Teaching materials such as the "Water Chemistry Laboratory Manual," "Environmental Engineering Unit Operations and Unit Processes Laboratory Manual," and "Aquatic Microbiology Laboratory Manual"
- Membership Meetings held at the annual WPCF Conference and the Purdue Industrial Waste Conference, as well as special sessions at the Annual AWWA Conference
- Input to other organizations including an AEEP delegation on the USANC for representation of the United States to the IAWPRC and an elected member on the board of directors of the AAEE
- Research Awards for doctoral dissertations in cooperation with Engineering Science Inc. and for outstanding research publications
- Newsletter published three times per year, and
- Member involvement in committee work.
G. AEEP PUBLICATIONS
AEEP PUBLICATIONS - 1964-1988

Cooper, R. C., Aquatic Microbiology Laboratory Manual, AEEP, c/o Desmond F. Lawler, Dept. of Civil Engineering, ECV 8.6, The University of Texas at Austin, Austin, TX 78712, 1978.


Dunstan, G. H., et al, Register of Graduate Programs in the Field of Sanitary Engineering Education, EEIB and AAPSE, June 1966 (359 pp.)


Klosky, J. D. (ed), Register of Environmental Engineering Graduate Programs, AAEE and AEEP, July, 1974 (511 pp).

Middlebrooks, E. J. (ch), Trends and Professional Manpower Production Capabilities in USA Educational Institutions, OWP-EPA and AAPSE, June 1972 (27 pp).


O'Connor, J. T., Environmental Engineering Unit Operations and Unit Processes Laboratory Manual, AEEP, c/o Desmond F. Lawler, Dept. of Civil Engineering, ECV 8.6, The University of Texas at Austin, Austin, TX 78712, Third Ed., 1984.


Pipes, W. O., National Policy Issues on Water Pollution Control, AEEP Papers from the ASCE Specialty Conference, Pennsylvania State University, July 8-11, 1974 (30 pp).


**AEEP PUBLICATIONS**  (Author not Listed)


National Policy Issue (Water Pollution Control), AEEP/ASCE Specialty Conference, July 8-11, 1974.


Proceedings) Interdisciplinary Education Programmes for Environmental Engineers, AEEP & AAPSE, Univ. of Toronto, August 8-10, 1972.

Register of Graduate Programs in the Field of Sanitary Engineering Education, AAPSE & EEID, June 1966.


So you want to be an Environmental Engineer, AEEP. No date.

Trends and Professional Manpower Production Capabilities in USA Educational Institutions, AAPSE & EPA, June 1972. 2 Copies.


H. ARCHIVES STRUCTURE
1. ARCHIVES (red)

1. QUICK REFERENCE GUIDE
   (1) Ringbook of Archives Committee Chairman

2. GUIDELINES FOR FILING
   (1) General Guidelines on How to File AEEP Material
   (2) Reference Literature on How to File

3. REVISIONS
   (1) Prepared by Kurt Keeley, Director of Information Services, AWWA, 9/80
   (2) First Revision by David W. Hendricks, Chairman of AEEP Archives Committee, 7/81.
   (3) Second Revision by David W. Hendricks 2/19/85.

4. FILE GROUPINGS
   (1) File Categories
   (2) Topic Files (Hanging Files, Colorado)
   (3) Content Folders

5. HOW TO USE THE FILING SYSTEM
   Each file is given a number according to:
   (1) File category, e.g. "2. HISTORY" (group of hanging files, all yellow in color).
   (2) Topic files, e.g. "2.2 ORGANIZATIONAL MEETING" (this is a single yellow hanging file in the group).
   (3) Content folders, e.g. manila folder (1) in the above hanging file 2.2 is: "(1) 1963 AAPSE Organizational Meeting, December 5-6, LaSalle Hotel, Chicago.
   (4) Example: Find the Board Minutes for May 4, 1966.

2. HISTORY (yellow)

1. CHARTER MEMBERS
   (1) 1964 AAPSE Charter Members

2. ORGANIZATIONAL MEETING
   (1) 1963 AAPSE Organizational Meeting, December 5-6, LaSalle Hotel, Chicago

3. OBJECTIVES OF AAPSE
   (1) 1963 AAPSE Objectives

4. ANNUAL REPORT - 1965
   (1) 1965 AAPSE First Annual Report to Members—December 31, 1965

5. INCORPORATION
   (1) 1964 Articles of Incorporation
   (2) 1964-1965 AAPSE Incorporation Information
   (3) 1974 AEEP Incorporation Information for California
   (4) 1974 AEEP Incorporation and Refiling of Corporate Tax Forms in California

6. CORRESPONDENCE, EARLY
   (1) 1964-1965 AAPSE Early Correspondence

7. CORRESPONDENCE, McKee
   (1) 1963-1966 AAPSE and McKee Correspondence, re: Need for AAPSE
   (2) 1963-1964 AAPSE Early Correspondence re: Organization and McKee Controversy
8. CORRESPONDENCE
   (1) 1963-1967 Membership Correspondence and Committee
   (2) 1964-1966 AAPSE General Correspondence

9. KAUFMAN FILE
   (1) 1973 AEEP, re: Kaufman Death, November 10, 1973

10. AAPSE TO AEEP
    (1) 1973 AAPSE/AEEP Name Change Legal

11. PRESIDENT'S MESSAGES

12. COMMITTEES
    (1) 1963-1975 AAPSE/AEEP Committee Structure and Members
    (2) 1976-1980 AEEP Committee Structure and Members

3. BOARD MINUTES (blue)

1. 1963-1966 BOARD MEETINGS
   (1) AAPSE Board Minutes (1 set) - Meeting from September 6, 1963 through January 1966
   (2) AAPSE Board Minutes (duplicate set) - Meetings #1-10, December 5, 1963 - September 27, 1966

2. 1964 BOARD MEETINGS
   (1) AAPSE Board Meeting: Salt Lake City, Utah, May 12, 1964
   (2) AAPSE Board Meeting: Tokyo, Japan, August 25-26, 1964
   (3) AAPSE Board Meeting: Bal Harbour, Florida, September 29, 1964

3. 1965 BOARD MEETINGS
   (1) AAPSE Board Meeting: Chicago, Illinois, February 18-19, 1965

(2) AAPSE Provisional Board Meeting; O'Hare, Chicago, Illinois, May 22, 1965
(3) AAPSE Board Meeting; Atlantic City, New Jersey, October 12-13, 1965

4. 1966 BOARD MEETINGS
   (1) AAPSE Board Meeting; Washington, D.C., January 1, 1966
   (2) AAPSE Agenda Items; January 19, 1966 for January 24-26, 1966
   (3) AAPSE Board Meeting; Washington, D.C., January 25-26, 1966
   (4) AAPSE Board Meeting; Lafayette, Indiana, May 4, 1966
   (5) AAPSE Board Meeting; Munich, Germany, September 6, 1966
   (6) AAPSE Board Meeting; Kansas City, Missouri, September 77, 1966
   (7) AAPSE Agenda; Washington, D.C., December 1, 1966

5. 1967 BOARD MEETINGS
   (1) AAPSE Board Meeting; Purdue University, May 2, 1967
   (2) AAPSE Minutes; Atlantic City, New Jersey, June 7, 1967
   (3) AAPSE Board Meeting; Evanston, Illinois, August 27, 1967
   (4) AAPSE Board Meeting; Washington, D.C., November 1967

6. 1968 BOARD MEETINGS
   (1) AAPSE Board Meeting; Purdue University, May 6, 1968
   (2) AAPSE Board Meeting; September 1968
   (3) AAPSE Board Meeting; Washington, D.C., December 15, 1968

7. 1969 BOARD MEETINGS
   (1) AAPSE Board Meeting; Purdue University, May 5, 1969
   (2) AAPSE Board Meeting; Dallas, Texas, October 6, 1969
(3) AAPSE Board Meeting; Washington, D.C., December 2, 1969

8. 1970 BOARD MEETINGS

(1) AAPSE Board Meeting/Membership Meeting; Boston, Massachusetts, October 4, 1970

(2) AAPSE Board Meeting; New York, New York, December 14-15, 1970

9. 1971 BOARD MEETINGS

(1) AAPSE Board Meeting; Washington, D.C., December 16-17, 1971

10. 1972 BOARD MEETINGS

(1) AEEP Board Meeting; Purdue University, May 1972

(2) AEEP Board Meeting; Atlanta, Georgia, October 1972

(3) AEEP Board Meeting; Miami, Florida, December 2, 1972

11. 1973 BOARD MEETINGS

(1) AEEP Board Meeting; Purdue University, April 20, 1973

(2) AEEP Board Meeting; Des Plaines, Illinois, December 13-14, 1973

12. 1974 BOARD MEETINGS

(1) AEEP Board Meeting; Denver, Colorado, October 6, 1974

(2) AEEP Board Meeting; Charleston, South Carolina, December 20, 1974

13. 1975 BOARD MEETINGS

(1) AEEP Board Meeting; West Lafayette, Indiana (Purdue), May 5, 1975

(2) AEEP Board Meeting; Miami, Florida, October 5, 1975

(3) AEEP Board Meeting; Washington, D.C., December 15, 1975

14. 1976 BOARD MEETINGS

(1) AEEP Board Meeting; Lafayette, Indiana, May 3, 1976

(2) AEEP Board Meeting; Minneapolis, Minnesota, October 3, 1976

(3) AEEP Board Meeting; Washington, D.C., December 16, 1976

15. 1977 BOARD MEETINGS

(1) AEEP Board Meeting; West Lafayette, Indiana, May 8, 1977

(2) AEEP Board Meeting; Philadelphia, Pennsylvania, October 2, 1977

(3) AEEP Board Meeting; Arlington, Virginia, December 16, 1977

16. 1978 BOARD MEETINGS

(1) AEEP Board Meeting; West Lafayette, Indiana, May 7, 1978

(2) AEEP Board Meeting; Anaheim, California, October 1, 1978

(3) AEEP Board Meeting; Washington, D.C., December 15, 1978

17. 1979 BOARD MEETINGS

(1) AEEP Board Meeting; West Lafayette, Indiana, May 6, 1979

(2) AEEP Board Meeting; Houston, Texas, October 7, 1979

(3) AEEP Board Meeting; Washington, D.C., December 17, 1979

18. 1980 BOARD MEETINGS

(1) AEEP Board Meeting; West Lafayette, Indiana, May 11, 1980

(2) AEEP Board Meeting; Las Vegas, Nevada, October 1980

19. 1981 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January 11, 1981

(2) AEEP Board Meeting; Purdue University, May 10, 1981

(3) AEEP Board Meeting; Detroit, October 5, 1981

20. 1982 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January 11, 1982

(2) AEEP Board Meeting; West Lafayette, Indiana, May 11, 1982
(3) AEEP Board Meeting; St. Louis, Missouri, October 4, 1982

21. 1983 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January 14, 1983

(2) AEEP Board Meeting; West Lafayette, Indiana, May 10, 1983

(3) AEEP Board Meeting; Atlanta, Georgia, October 3, 1983

22. 1984 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January 13, 1984

(2) AEEP Board Meeting; West Lafayette, Indiana, May 8, 1984

(3) AEEP Board Meeting; New Orleans, Louisiana, October 1, 1984

23. 1985 BOARD MEETINGS

(1) AEEP Board Meeting; Arlington, Virginia, January 7, 1985

(2) AEEP Board Meeting; West Lafayette, Indiana, May 14, 1985

(3) AEEP Board Meeting; Kansas City, Missouri, October 7, 1985

24. 1986 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January 13, 1986

(2) AEEP Board Meeting; West Lafayette, Indiana, May 13, 1986

(4) AEEP Board Meeting; Los Angeles, California, ??

25. 1987 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., January ___, 1987

(2) AEEP Board Meeting; West Lafayette, Indiana, May ___, 1987

(3) AEEP Board Meeting; Philadelphia, October ___, 1987

26. 1988 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., ___, 1988

(2) AEEP Board Meeting; West Lafayette, Indiana, May ___, 1988

(3) AEEP Board Meeting; Dallas, October 3, 1988

27. 1989 BOARD MEETINGS

(1) AEEP Board Meeting; Washington, D.C., February __, 1989

(2) AEEP Board Meeting; West Lafayette, Indiana, May ___, 1989

(3) AEEP Board Meeting; San Francisco, October16, 1989

4. OPEN MEETINGS (green)

1. 1963 ORGANIZATION MEETING

(1) AAPSE Organization Meeting (Meeting #3), LaSalle Hotel, Chicago, Illinois, December 5-6, 1963

(2) Objectives and Information Bulletins, December 17-18, 1963

(3) General Correspondence and Organizational Memos, 1963-1964

2. 1965-1967 OPEN MEETINGS

(1) AAPSE Open Meeting; Atlantic City, New Jersey, October 12, 1965

(2) AAPSE Annual Meeting; New York, New York, October 1967

3. 1968-1969 OPEN MEETINGS

(1) AAPSE Annual Meeting; Chicago, Illinois, September 1968

(2) AAPSE Open Meeting; Atlantic City, New Jersey, October 12, 1968

4. 1970-1971 OPEN MEETINGS

(1) AAPSE Open Meeting; Boston Massachusetts, October 6, 1970

(2) AAPSE Meeting; Purdue University, May 4-6, 1970

(3) AAPSE Open Meeting; Purdue University, May 4, 1971
5. OFFICERS AND COMMITTEE MEMBERSHIPS (red)

1. 1963-65 OFFICERS AND COMMITTEE MEMBERSHIPS

2. 1965-67 OFFICERS AND COMMITTEE MEMBERSHIPS

3. 1968-69 OFFICERS AND COMMITTEE MEMBERSHIPS

4. 1970-71 OFFICERS AND COMMITTEE MEMBERSHIPS

5. 1972-73 OFFICERS AND COMMITTEE MEMBERSHIPS

6. 1974-75 OFFICERS AND COMMITTEE MEMBERSHIPS

7. 1976-77 OFFICERS AND COMMITTEE MEMBERSHIPS

8. 1978-79 OFFICERS AND COMMITTEE MEMBERSHIPS

9. 1980-81 OFFICERS AND COMMITTEE MEMBERSHIPS

10. 1982-83 OFFICERS AND COMMITTEE MEMBERSHIPS

11. 1984-85 OFFICERS AND COMMITTEE MEMBERSHIPS

(1) Nominees for AEEP Board of Directors, October 1985 to October 1988

12. 1985-86 OFFICERS AND COMMITTEE MEMBERSHIPS

(1) Correspondence

6. COMMITTEES (yellow)

1. ADVISORY

(1) 1973 Advisory Committee to the Board of Directors (established January 4, 1973)

2. ARCHIVES

(1) 1966-1977 AEEP Archives—Officers and Board of Directors (1963-1974)

(2) 1967-1977 AEEP Archives Correspondence

(3) 1971 AEEP Archives—1971 AAPSE Progress Report by E. R. Baumann

(4) 1972-1982 AEEP Correspondence and Reports

(5) 1983-1990 AEEP Correspondence and Reports

3. AUDIT


(2) 1975 AEEP Audit Committee, 1975

4. AWARDS

(1) 1965-1966 AAPSE Awards Committee, also called "AAPSE Prize Committee"

(2) 1965-1966 AAPSE Prize (Engineering Science, Inc.)

(3) 1965 AAPSE Awards Committee, also called "AAPSE Prizes"

(4) 1966 AAPSE Awards Committee, also called "Ludwig Award"

(5) 1968 AAPSE Awards Committee
(7) 1972 AAPSE Awards Committee, 1972
(8) 1973 Engineering Science Award
(9) 1973 AEEP Awards Committee, 1973
(10) 1975 AEEP Awards Committee

5. BYLAWS

(1) 1966 AAPSE Bylaws Review Committee
(2) 1976 Bylaws and Organization Ad Hoc Committee
(3) 1981 Revision Proposed

6. EDUCATION

(1) 1965 AAPSE Education Questionnaire (Sylvester Committee)
(2) 1966-1967 AAPSE Education Committee
(3) 1967 AAPSE Task Committee "Role of Sanitary Engineering in Environmental Engineering"
(4) 1968 AAPSE Educational Resources Committee
(5) 1970 AAPSE Ad Hoc Committee "Role of AAPSE in Training Operators/Technicians for Environmental Work"
(6) 1970 AAPSE Education Committee Report
(7) 1971-1972 AAPSE Ad Hoc Educational Policy Committee
(8) 1971 AAPSE Ad Hoc Educational Policy Committee Report
(9) 1972 Education Committee on Accreditation Policy
(10) 1973-1974 AEEP Graduate Training Support Committee
(11) 1973 AEEP Education Committee Correspondence
(12) 1974 AEEP Education Committee
(13) 1974 AEEP Undergraduate Environmental Engineering Committee
(14) 1975 AEEP Education Committee
(15) 1975 AEEP Committee on Teaching Methodology
(16) 1975 AEEP Committee for Educational Aids
(17) 1975-1976 AEEP Undergraduate Environmental Engineering Committee
(18) 1976 AEEP Education Committee Report
(19) 1977 AEEP Undergraduate Environmental Engineering Committee

7. ELIGIBILITY

(1) 1976 AAPSE Eligibility Committee
(2) 1968 AAPSE Eligibility Committee
(3) 1973 AAPSE Eligibility Committee

8. LABORATORY MANUALS

(1) 1969-197 Laboratory Chemistry Committee (Unit Processes and Unit Operation Lab Manual)
(2) 1974 Chemistry Manual

9. LEGISLATIVE ANALYSIS

(1) 1964-1965 AAPSE Legislative News
(2) 1964-1966 AAPSE Legislative Action
(3) 1964-1966 Legislative Analysis Committee
(4) 1964-1966 AAPSE Legislative News and Legislative Analysis Committee
(5) 1965-1966 AAPSE "Legislative News"/"Legislative Analysis Bulletin"
(6) 1965-1966 AAPSE Legislative Analysis Committee
(7) 1968 AAPSE Government Agency Liaison Committee
(8) 1968 AAPSE Legislative Analysis Committee
(9) 1969 AAPSE Legislative Analysis Committee, re: National Water Resources Objectives
(10) 1970-1971 AAPSE Legislative Analysis
13. NEWSLETTER

(1) 1965-1966 AAPSE Newsletter Correspondence

(2) 1965 AAPSE Newsletter Committee

(3) 1966-1971 Newsletter Correspondence Committee

(4) 1975 AEEP Newsletter Committee

(5) 1977 AEEP Newsletter Correspondence

14. NOMINATING

(1) 1966-1967 AAPSE Nominating Committee

(2) 1971 AAPSE Nominating Committee

(3) 1974 AAPSE Nominating Committee

(4) 1976 AAPSE Nominating Committee

(5) 1977 AAPSE Nominating Committee

15. PUBLIC INFORMATION

(1) 1970-1972 AAPSE Public Information Committee

16. PUBLICATIONS

(1) 1968 AAPSE Publications Committee

(2) 1970 AAPSE Publications Committee

(3) 1975 AAPSE Publications Committee, Pricing Policy for AEEP Publications

(4) 1975 AAPSE Publications Committee

17. REGISTER

(1) 1965-1967 AAPSE Educational Resources Register

(2) 1966 AAPSE Register (Sylvester Committee)

(3) 1966-1967 AAPSE Educational Programs

(4) 1967 AAPSE Educational Programs

(5) 1967-1968 AAPSE Register of Graduate Programs and Educational Resources Committee

(6) 1971-1972 AAPSE Register Committee
18. RESEARCH
(1) 1968 AAPSE Research Committee
(2) 1975 AEEP Research Committee

19. SEMINAR
(1) 1968 AAPSE Seminar Committee

20. TREASURERS
(1) 1964-1976 AAPSE/AEEP Treasurer's Report or Financial Statement (broken)

21. VISITING FOREIGN LECTURER
(1) 1968-1969 AAPSE Visiting Lecturer Committee
(2) 1970 1971, 1972--AAPSE Visiting Lecturer Committee
(3) 1973 AEEP Visiting Lecturer Committee
(4) 1974 Distinguished Foreign Lecturer; Shuval/Israel Visit Cancelled
(5) 1975-1976 AEEP Visiting Lecturer Committee

22. DISTINGUISHED LECTURER PROGRAM

7. REPORTS (blue)

1. 1963-1966 REPORTS
(2) 1966 AAPSE FWPCA

2. 1967-1969 REPORTS
(1) 1967 AAPSE FWPCA Training Grant Correspondence
(2) 1967 AAPSE DHEW Manpower Study, October 27, 1967
(3) AAPSE Meetings Manpower Study
(4) 1968-1969 AAPSE FWPCA (Interior) Correspondence, re: Education and Research Requirements
(5) 1969 Membership List

3. 1970-1971 REPORTS
(1) 1970 AAPSE EPA's Comments by Snider, re: Professional Training for Water Quality Control
(2) 1970 Membership List
(3) 1971 AEEP's Posture with Industry Recommendations
(4) 1971-1972 AAPSE EPA Grant "Scientific Evaluation of Professional and Technical Training Grants"

4. 1972-1973 REPORTS
(1) 1972 AAPSE January EPA Training Budget (letters from members)
(2) 1972-1973 AAPSE/AEEP EPA's Training and Development Program Statement, April 11, 1973
(3) 1972 AAPSE Congressional Correspondence, re: 1972 EPA Training Grant Cutbacks
(4) 1972 "EPA Manpower Activities" Issue Paper January 1972 (author?)
(6) 1973-1974 AEEP Position Papers on Research in Water Pollution Control
(7) 1973-1974 AEEP Policy Papers on Water Pollution Control
  - 1973 AEEP Administration and Implementation of Pollution Control Policy - Bacon
  - 1973 AEEP Financing Wastewater Treatment Plants - Malina
  - 1974 AEEP Research Policy Paper "Research in Water Pollution Control" - Dick
  - 1974 Manpower Needs and Training Support Water Pollution Control - Middlebrooks
5. **1974-1975 REPORTS**

(1) 1974-1975 AEEP Graduate Enrollment Survey

(2) 1975-1976 AEEP Federal Graduate Training Support

(3) 1975 AEEP “Evaluation of Environmental Engineering Education” by Middlebrooks

(4) 1975 March-December Correspondence, re: Training Grants Support - Congressional Correspondence

(5) 1975 Memberships List

(6) 1975 Statements on EPA Training Grants Program--Correspondence with Dale Moeller (Environmental Health)

(7) 1975-1976 Correspondence, re: EPA Training Grants

(8) 1976 AEEP FY '77 Training Grant Support--EPA Correspondence

6. **1976-1977 REPORTS**

(1) EPA Training Grant Support--Correspondence

(2) Trends in Enrollment in Environmental Engineering and Related Areas - 1975-76 Survey, by W. J. Jerwell and N. S. Switchenbaum

7. **1978-1979 REPORTS**


9. **1982-1983 REPORTS**

10. **1983-1984 REPORTS**

11. **1985-1986 REPORTS**

Membership Roster 1985
Membership Roster 1986
Division Newsletter April 1986

12. **1987-1988 REPORTS**

8. **LIAISONS (green)**

1. **1963-1966 LIAISONS**

(1) 1964 AAPSE/ASCE Sanitary Engineering Division; Chicago Meeting

(2) 1964 AAPSE PAHO WHO Cooperation

(3) 1964 AAPSE and ASEIB (American Sanitary Engineering Intersociety Board)

(4) 1964-1966 AAPSE and University Council on Water Resources

(5) 1967-1965? AAPSE and Association of State and Interstate Water Pollution Control Administration

(6) 1966 AAPSE-ASEE Committee

(7) 1966 AAPSE Correspondence with ASEE (American Society for Engineering Education)

(8) 1966 Correspondence, re: ASTM D-19 and Max Katz (University of Washington, Seattle)

(9) 1966-1967 AAPSE EEIB

2. **1967-1969 LIAISONS**

(1) 1968-1972 AAPSE Relations with USANC for IWPCA

(2) 1968 AAPSE USANC TWAPR; 5th International

3. **1970-1972 LIAISONS**

(1) 1971-1972 AAPSE EEIB (Environmental Engineering Intersociety Board)

(2) 1971-1973 Sponsorship of EEIB (Environmental Engineering Intersociety Board)

(3) 1971 AAOSSE AUA (Argonne Univ. Association) and Issue “Regional Approach to Environmental Problems”

(4) 1972 AAPSE NAEE (National Association Environmental Education)

(5) 1972 AAPSE April 28, 1972 Meeting with Sanitary Engineering Division /Executive Committee and EPA et al.

(6) 1972 AAPSE Proposed Project with EPA, re: Education Materials for Technology Transfer Program

4. **1973-1974 LIAISONS**

(1) 1973 Fall ASCE Specialty Conference

(2) 1973 AEEP USANC IAWPR (USA National Committee-International Association Water Pollution Research)
(3) 1973 AEEP Proposed "Canadian AEEP Section"

(4) 1973 AEEP Canadian Section

(5) 1974 ASCE Conference on Civil Engineering Education; Ohio State

(6) 1974 ASCE Environmental Summit Conference; Arlington, Virginia, April 22-26, 1974

5. 1975-1976 LIAISONS

(1) 1975 USANC IAWPR (International Association Water Pollution Research)

(2) 1978-19777 AEEP for USANC Position Paper for 8th International Conference; Sydney, Australia

(3) 1976 AEEP USANC for IAWPR (USA National Committee for International Association Water Pollution Research)

6. 1977-1978 LIAISONS

7. 1979-1980 LIAISONS

8. 1981-1982 LIAISONS


10. 1985-1986 LIAISONS

11. 1987-1988 LIAISONS

9. TESTIMONIES (red)

1. 1963-1966 TESTIMONIES

(1) 1963-1964 Congressional/Federal Correspondence

(2) 1964-1965 AAPSE Pearson Testing, re: PHS on Water Supply and Pollution Control

(3) 1964 AAPSE Statement on S-2, re: Water Pollution

(4) 1966 AAPSE Reorganization of Public Health Service

2. 1967-1969 TESTIMONIES

(1) 1967 AAPSE Statement on Draft Deferment for Graduate Students in Sanitary and Water Resources Engineering

3. 1970-1971 TESTIMONIES

4. 1972-1973 TESTIMONIES

(1) 1972 Testimony, re: Reduced EPA Funding for Training Support, May 16, 1972

(2) 1973 AEEP Testimony, re: EPA Training Grant Fellowships - Congressional Correspondence


5. 1974-1975 TESTIMONIES

(1) 1974 Congressional/Federal Correspondence

(2) 1974-1975 AEEP Congressional/Federal Correspondence, re: Training Support

(3) 1975 AEEP "Blitz on D.C." - March 17-18, 1975, re: EPA Training Grants

(4) 1975 May - AEEP Testimony in Washington, D.C. - Boland's Subcommittee, re: EPA's Training Program in Water Pollution

6. 1976-1977 TESTIMONIES

(1) 1977 AEEP Government Activities

7. 1978-1979 TESTIMONIES

8. 1980-1981 TESTIMONIES

9. 1982-1983 TESTIMONIES

10. 1984-1985 TESTIMONIES

11. 1986-1987 TESTIMONIES

12. 1988-1989 TESTIMONIES

10. SEMINARS (yellow)

1. 1964-1965 SEMINARS
11. WORKSHOPS (blue)

1. 1966 WORKSHOPS
   (1) Austin - Eckenfelder, W. W., Jr., Biological waste treatment processes.

2. 1967 WORKSHOPS

3. 1968 WORKSHOPS

4. 1969 WORKSHOPS

5. 1970 WORKSHOPS

6. 1971 WORKSHOPS

7. 1972 WORKSHOPS
   (1) Toronto - Heinke, E., Interdisciplinary educational program for environmental engineers.

   (2) Bahamas - Keinath, T., and Waniolista, M., Mathematical modeling in environmental engineering, Bahamas Cruise.

8. 1973 WORKSHOPS
   (1) 1973 - Empty file (no reference)

9. 1974 WORKSHOPS
   (1) Charleston - Qson, J., Environmental impacts and linkages.

10. 1975 WORKSHOPS
    (1) Vancouver - No name. Energy and the environment (cancelled).

11. 1976 WORKSHOPS
    (1) 1976 - Empty file (no reference)
12. 1977 WORKSHOPS
   (1) Purdue - No chair, Applied statistics in Environmental engineering.

13. 1978 WORKSHOPS
   (1) Purdue - Jewell, W., Land treatment.

14. 1979 WORKSHOPS
   (1) Purdue - Lauria, D., Optimal process design.
   (2) AWWA - Novak, J., Organics in water supply.

15. 1980 WORKSHOPS
   (1) Purdue - Schmidke, Process scale up.

16. 1981 WORKSHOPS
   (1) Purdue - Roberts, P. V., Cherry, Valcocichi, Contaminant Transport in Groundwater.

17. 1982 WORKSHOPS
   (1) Purdue - Arbuckle, W. B., Belfort, D., Mackay, D., Yalkowsky, S. H., Workshop on Applying Chemical Structural and Thermodynamic Correlations to Treatment Processes Selection.

18. 1983 WORKSHOPS
   (1) Purdue - Lawler, D., Particles.

19. 1984 WORKSHOPS
   (1) Purdue - Speece, R., Anaerobic treatment processes.
   (2) AWWA - Dempsey, B., Chemistry of coagulation.

20. 1985 WORKSHOPS
   (1) Purdue - Alleman, J., Speece, R., Anaerobic treatment processes.

21. 1986 WORKSHOPS
   (1) Purdue - Characklis, W., Engineering the biofilm.
   (2) AWWA - Kavanaugh, M., Drinking water standards.
   (3) WPCF - Stenstrom, M., Mass transfer.

22. 1987 WORKSHOPS

   (1) Purdue - Patterson, J., Recovery and reuse of metals
   (2) AWWA - Singer, P., Oxidation processes.
   (3) WPCF - Grady, L., Biotechnology.

23. 1988 WORKSHOPS
   (1) Purdue - Tchobanoglous, G., Theissen, L., Lang, R., Solid waste management.
   (2) AWWA - Tate, Carol, Regulatory environment.
   (3) WPCF - Eckert, C., Lewis, C., Supercritical fluids.

24. 1989 WORKSHOPS
   (1) Purdue - Haas, C., Superfund cleanup.
   (2) AWWA - Bouwer, E., Biological processes.
   (3) WPCF - Ward, H., Bioremediation.

25. 1990 WORKSHOPS
   (1) Purdue
   (2) AWWA
   (3) WPCF

26. 1991 WORKSHOPS
   (1) Purdue
   (2) AWWA
   (3) WPCF

27. 1992 WORKSHOPS
   (1) Purdue
   (2) AWWA
   (3) WPCF

28. 1993 WORKSHOPS
   (1) Purdue
   (2) AWWA
   (3) WPCF

29. 1994 WORKSHOPS
   (1) Purdue
12. CONFERENCES ON GRADUATE EDUCATION (yellow)

1. 1960 - FIRST NATIONAL CONFERENCE

2. 1966 - SECOND NATIONAL CONFERENCE

3. 1973 - THIRD NATIONAL CONFERENCE

4. 1980 - FOURTH NATIONAL CONFERENCE
   (1) 1981 - Position Papers

5. 1986 - FIFTH NATIONAL CONFERENCE
   (1) 1986 - Michigan Technological University, Houghton, Michigan, July 21-23, 1986, Focusing on: role of computers; integrated, air, water, land approaches; design and operation.

13. GRANTS (red)

1. CHEMISTRY MANUAL
   (1) 1971-1973 - Experiments in Aquatic Chemistry, A Lab Text, EPA
   (2) 1971-1974 - Water Chemistry Manual (expense forms, EPA correspondence)
   (3) 1971 - Water Chemistry Manual; First Edition and Grant from EPA
   (6) 1974 - AEEP Environmental Chemistry Manual, 1974
   (7) 1974 - Water Chemistry Manual Training Grant Expenditure Reports

2. 1965-1966 GRANTS

3. 1967-1969 GRANTS
   (1) 1969 - AAPSE Register of Graduate Programs Guidelines

4. 1967-1969 GRANTS
   (1) 1971-1972 - AAPSE/EPA RFD WA-72-A-2; Manpower Training Needs
   (2) 1972 - AAPSE Indirect Cost Rate for Federal Grants
   (3) 1972-1973 - Federal Programs/Grants Correspondence

5. 1973-1974 GRANTS
   (1) 1973-1975 - AEEP Register - EPA Grant
   (2) 1973 - AEEP Register; Proposal for 3rd Edition
   (3) 1974-1975 - AEEP Register; Proposal to EPA; Rensselaer Polytechnic Institute
   (4) 1974 - AEEP Training Grant Expenditure Report for Chemistry Manual Grants
   (5) 1974-1975 - AEEP Graduate Enrollment Survey
   (6) 1974-1975 - Register - EPA Grant Information
   (7) 1974 - AEEP Publishing, Mathematical Modeling, Ann Arbor Science
   (8) 1974 - AEEP Register - EPA Grant Extension

6. 1975-1976 GRANTS
   (1) 1975 - AEEP Analysis fo Register Data

7. 1977-1979 GRANTS
   (1) 1977 - Undergraduate Register Grant

8. 1980-1985 GRANTS

9. 1986-1990 GRANTS
14. NEWSLETTER (green)

NUMERIC LISTING

American Association of Professors in Sanitary Engineering (AAPSE)

1. VOL. 1 - 1965-1966 NEWSLETTER
   Vol. 1 #1 September 1965
   Vol. 1 #2 February 1966
   Vol. 1 #3 May 1966

2. VOL. 2 - 1966-1967 NEWSLETTERS
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   Vol. 2 #4 August 1967

3. VOL. 3 - 1967-1968 NEWSLETTERS
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5. VOL. 5 - 1969-1970 NEWSLETTERS
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6. VOL. 6 - 1970-1971 NEWSLETTERS
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7. VOL. 7 - 1971-1972 NEWSLETTERS
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8. VOL. 8 - 1972-1973 NEWSLETTERS
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15. FINANCIAL RECORDS (blue)
1. TREASURER'S REPORTS
2. RECEIPTS

16. PUBLICATIONS (yellow)
1. BROCHURES