ENVIRONMENTAL ENGINEER & SCIENTIST

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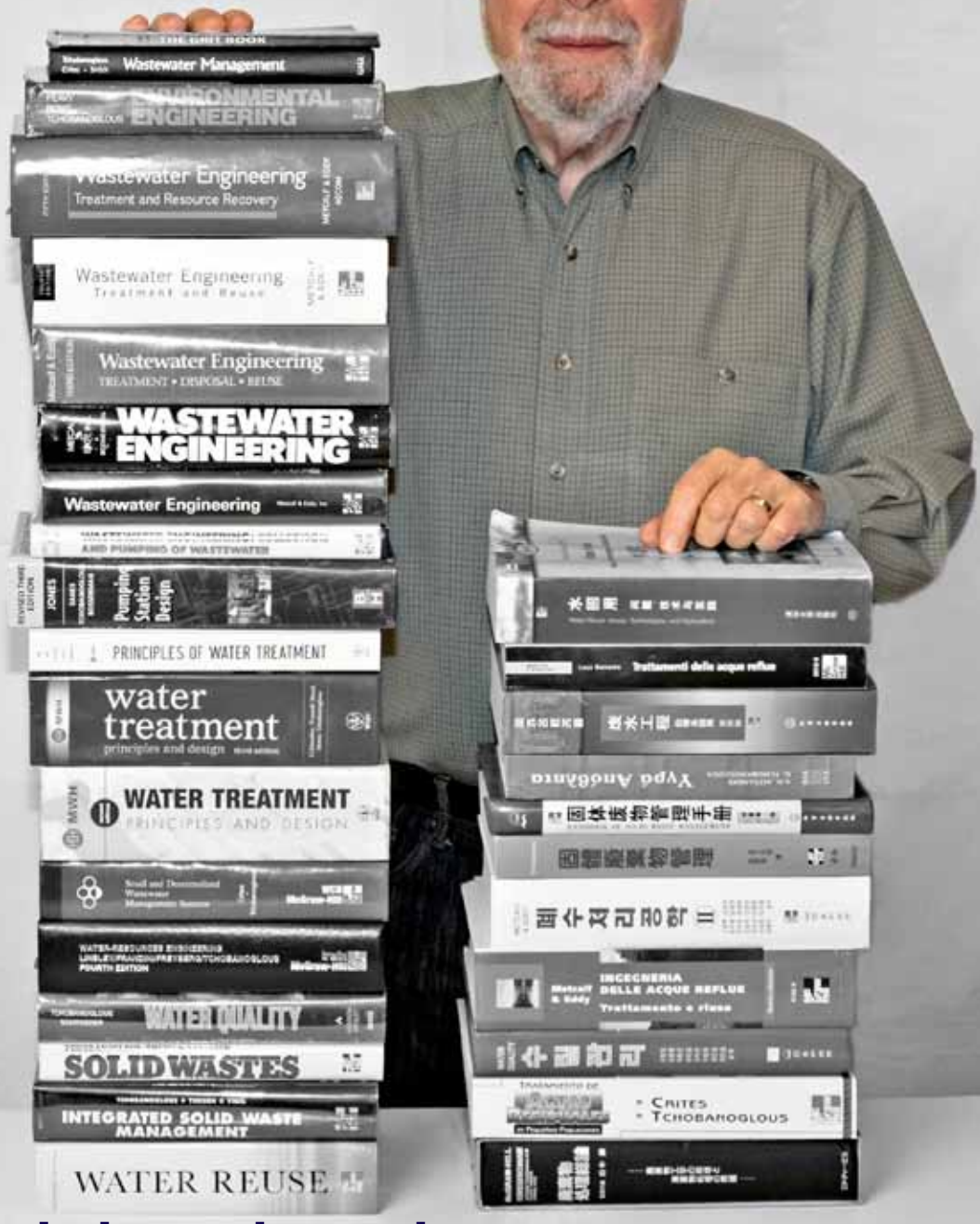

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AMERICAN ACADEMY OF ENVIRONMENTAL ENGINEERS AND SCIENTISTS

2015
Membership Recruitment Contest

We are once again asking for your help in finding the next class of Board Certified environmental engineers and scientists. In order to encourage your efforts, we are offering you a unique opportunity to win a 'raffle' providing you the best chance of winning you are likely to see anywhere. The grand prize is a new Apple iPad Air with Wi-Fi and 16 GB of storage.

Since we want to reach new records for applicant levels this year, we are going to shake things up a bit. We are going to improve the odds significantly for those who can bring us multiple applicants.

Here's how it works. If you bring one applicant, your name goes into the hat 1x1 times. However, if you bring us 2 applicants, the total entries you get is 2x2. That means your odds of winning have just risen to 4:103. If you bring us 5 qualified applicants the rule of squares gives you 5x5 entries. That's right, 25 entries out of 124 have your name on them. If you can find 7 or 8 qualified applicants, that iPad practically has your name on it.

If you know of potential applicants, just point them to our web site and have them be sure to indicate that you are their 'nominator' on the application form. We will let you know that you were named and will add your name to the list of nominators. That's all there is to it. The closing date for the contest is the same as for applications. However, there is significant first-mover advantage to be had for those who start building their list of candidates now. Just like Chicago politics, vote early and often!

AMERICAN ACADEMY
OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®
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PRESIDENT'S PAGE

James F. Stahl, P.E., BCEE

HAPPY NEW YEAR AND HAPPY 60TH BIRTHDAY!

2015 is noteworthy in the history of the Academy as it is a celebration of the organization's 60th birthday. I am most fortunate and thankful to all of you that I have the distinct honor of being the President of the Academy's Board of Trustees during this eventful year. Every January 1 brings hope that we commit to new or renewed personal and professional goals. 2015 is no exception to those promises, but it is special in that as I noted, it marks the 60th anniversary of the founding of the Academy.

I am of a sufficiently-seasoned age that I knew and worked with a number of the Academy's founding fellows. Such stalwarts as Rolf Eliassen and Harvey Ludwig were joined by other leading sanitary engineers of their time to form and incorporate the American Sanitary Engineering Intersociety Board on October 21, 1955 (*see picture*). When I reflect on conversations I had with some of these pioneers, my abiding memory is of their zeal and fervent support of the Board that eventually became the Academy and its mission of specialty certification. The founders were driven, intelligent, confident visionaries who possessed uncommon technical acumen and used it to set forth wise goals for the newly-formed organization.

Bill Anderson, former Executive Director of the Academy, penned an excellent summary of the organization's first 50 years in the Winter 2005 edition of the *Environmental Engineer*. He recounted that the Academy was the first specialty certification board in the engineering profession. Its objectives were essentially the same as today, with one most important exception – namely the recent inclusion of environmental scientists into the Academy's programs, and the creation of the Board Certified Environmental Scientists designation.

This action is groundbreaking in its recognition of the academic and workplace practices facing environmental professionals. We live in a world in which addressing environmental challenges almost always requires the formation of collaborative teams of engineers and scientists. A path to specialty certification for these team members enhances their professional standing and ensures better projects for the public.

The latest Bureau of Labor Statistics metrics reveal that there are approximately 53,000 Environmental Engineers and 90,000 Environmental Scientists and Specialists working in the US. These are the professionals that have the most to gain from the benefits that the Academy offers. Yet the current Academy membership totals about 3000, of which a significant number are of the Baby Boom generation and rapidly approaching retirement. Taking this at face value, the Academy has managed to only garner the confidence and support of a little over 2% of its potential members. The Board and I are of the strong opinion that the Academy has far too much to offer in specialty certification and a forum for education of the public on environmental systems to not be an attraction for professional growth.

In the coming year, the Board of Trustees will have a laser focus on how we can build and maintain an upward trend in membership. We want to do much better than having 2% of our target audience on board. We will aggressively pursue policies to streamline our certification practices. We will develop and establish new ways to address the outreach and education needs of public and private supporters. We also look forward to receiving suggestions from our members about things we might consider as ways to grow our family. There can be no success without your help.

To paraphrase John F. Kennedy, I firmly believe it is appropriate to ask not what the Academy can do for you, but what can you do for the Academy and our esteemed profession. The short answer is mentor the young and recruit your peers. Guide them to become actively involved in elevating their professional status through the many paths to Academy certification. I clearly hope they follow your wise advice, choose the Academy, and contribute in some meaningful manner to professional excellence. The Academy offers so much to fulfill such a goal.

You are to be congratulated for your exemplary professional growth and recognition through Academy specialty certification. Your career path, lessons learned and professional judgments, particularly your personal rationale for sustained Academy membership, must be enthusiastically shared with all around you who you deem ready for the Academy call.

"We live in a world in which addressing environmental challenges almost always requires the formation of collaborative teams of engineers and scientists. A path to specialty certification for these team members enhances their professional standing and ensures better projects for the public."

Their membership in the Academy, and the resulting support for continuation of the principles and practices dedicated to improving the earth's physical environment and safeguarding the public's health, is essential. Your delivery of just one more member every year brings lasting meaning to our shared professional goals. Preparation for the next decade, the Academy's 70th birthday and beyond, can only be accomplished through your continued AAEES support and the gifting of new members to support your legacy.

Thanks to all for the past successes of the Academy. I, the Board of Trustees, and staff look forward to seeing you in Washington, DC, on April 23 at the AAEES Awards Luncheon and Technical Conference and working with you for the organization's growth in 2015.

October 31, 1955: American Sanitary Engineering Intersociety Board Inc., signing Articles of Incorporation.

ACADEMY NEWS

THE 2015 AAEES AWARDS LUNCHEON AND TECHNICAL CONFERENCE

The Academy's annual Awards Luncheon and Technical Conference will be held on Thursday, April 23, 2015, at the National Press Club in Washington, DC. This event continues to grow each year. Winners of the Excellence in Environmental Engineering and Science (E3S) Awards and the Environmental Communications Awards will be presented.

Morning and afternoon sessions will be available in which E3S winners will offer presentations on their award-winning projects.

In addition, AAEES offers several distinctive awards in which prominent environmental engineers, environmental scientists, and industry professionals are to be honored. Among those already slated for this year are:

- Stanley E. Kappe Award - **Richard Pope, P.E., BCEE**
- Edward J. Cleary Award - **Kevin Shafer**
- Gordon Maskew Fair Award - **Richard Luthy, Ph.D., P.E., BCEE**
- International Honorary Member Award - **Tsair Fuh-Lin**

Additional award recipients, keynote speaker, and registration information will be announced in upcoming issues of *Highpoints* or check our website at http://www.aaees.org for updates.

NOTICE OF BOT NOMINEES

Following is the 2016 Notice of Nominees for Board of Trustees:

President-Elect

- **Robert C. Williams, P.E., BCEE**
  Retired USPHS

Vice President Candidates

- **C. Hunter Nolen, P.E., BCEE**
  Senior Vice President, AMEC
- **Dan Wittliff, P.E., BCEE**
  Managing Director of Environmental Services, GDS Associates, Inc.

Trustee-at-Large Candidates

- **David M. Gaddis, P.E., BCEE**
  Associate, CDM Smith
- **Jeffrey H. Greenfield, Ph.D., P.E., BCEE**
  Senior Engineer, South Florida Water Management District
- **Kristin Morico, P.E., BCEE, CSP, F.ASCE**
  Global Leader-GE Water Program, GE Corporate Environmental Programs
- **James W. Patterson, Ph.D., BCEEM**
  Principal, Patterson Environmental Consultants, Inc.

Full profiles of these candidates will be published in the Spring issue of the *Environmental Engineer and Scientist*. The deadline for petitions for Officer Nominees is March 15, 2015. Email your petition to JSOlmo@aaees.org.

COMMITTEE APPOINTMENTS

2015 President James Stahl has finalized committee appointments for the Academy's next program year (January 1 to December 31) and appointment letters will be mailed to those newly appointed this year.

Academy News, continued on page 16

GUEST EDITORIAL

Christian Davies-Venn, PH.D., P.E., BCEE

THE ENGINEERING EDUCATION — WORKFORCE CONTINUUM

In this, my last article for the *Environmental Engineer and Scientist* as President (and now immediate Past President) of the Academy, I would like to reflect on a topic that is dear to my heart. The National Academy of Engineering (NAE) recently held a Workshop on "Pathways for Engineering Talent: Understanding the Engineering Education–Workforce Continuum." The workshop was chaired by Dr. Jean-Lou Chameau, President of the King Abdullah University of Science and Technology in Saudi Arabia (KAUST) and former President of Caltech University.

ENGINEERING EDUCATION SUPPLY AND DEMAND

A large part of the workshop was devoted to getting a better understanding of the forces driving engineering education. There were discussions regarding the supply side; specifically the need to investigate how well engineering schools are preparing graduates for an engineering career. These supply considerations were discussed in what might be termed a "customer demand" context. There were two groups of customers represented at the workshop; one group consisted of individuals interested in receiving an engineering education. The other group was made up of companies looking to hire these newly-minted graduates. The workshop attendees on the supply side were trying to determine what made students decide to choose the engineering profession as a career choice. Their need was to determine what it takes to develop programs that will keep these students interested in engineering all the way through to graduation. Their critical needs include determining how to keep students committed to their choice of engineering as a major while still in school, and equally important, they also need to know to know how to recruit these new graduates into the engineering profession once they graduate.

AND THE SURVEY SAYS…

Based on some recent survey research, it was reported that on a nationwide basis — and across all engineering fields — about 25% of individuals working as engineers do not have engineering degrees. Conversely, it turns out that approximately 40% of those with a Bachelor of Science degree in engineering report that they have jobs they find fulfilling in non-engineering occupations.

The open question for discovery and discussion at the workshop was *why is this happening*? Does this mean that 40% of our undergraduate engineering students in the United States are selecting the wrong major? Or could one infer that the current academic requirements for engineering are far too stringent, making pursuit of an engineering degree an onerous and unrewarding endeavor? If 25% of people in the United States working as engineers don't have an engineering degree, clearly there is something amiss. Or could it be that one does not need a formal four-year engineering background to be able to do the engineering work required in a variety of occupational settings? I can certainly see that there are some major disconnects in play here.

Also on the program was a speaker who specializes in K-12 education. He reported that K-12 teachers are expected to at least be proficient in science/technology topics up to the Grade 6 level. The presenter noted that research indicates that approximately 70% of the teachers who are in charge of creating and supporting the K-6 students' interest in STEM topics have no training in teaching technology of any kind. Of the remaining 30% who do, the training they had received can be as little as one day per year. Given the breadth and depth of areas that encompass technology across the economic and educational spectrum, I think it's safe to say that one day per year of teacher training is not a good formula for high quality outcomes.

"Based on some recent survey research, it was reported that on a nationwide basis — and across all engineering fields — about 25% of individuals working as engineers do not have engineering degrees."

Clearly, we need forums like this to address these important issues. Meetings like this enable us to get a better sense of what's happening in STEM education and why. Armed with that knowledge, we can begin to put the pieces in place to support our ability to maintain and build on the technical leadership we currently enjoy as a nation.

Another session included a report on the results of a recent survey of approximately 1,000 people working in all engineering disciplines. The age groups of those surveyed ranged from college students to former practitioners who are now retired. The intent of the survey was to find out what was needed to attract people to, and keep them engaged in, engineering careers. The results indicate that what people wanted was greater clarity on what sorts of work they would be doing and what types of challenges they would be facing in an engineering career. They also wanted a better sense of how their engineering career would prepare them for meeting the demands of a non-engineering career.

A ROLE FOR THE ACADEMY AND ITS MEMBERS

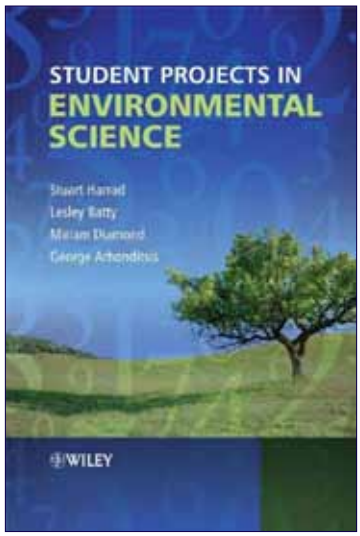
These issues are especially relevant to me, and hopefully to you, as a member of the Academy. What the researchers found when enquiring about individuals' career choices, and their decision to pursue their interest in engineering, are some of the same reasons that I got involved in engineering many years ago. Like many of my peers, I have an aptitude for technical subjects and mathematics. Secondly, I enjoy getting my hands dirty with real devices and activities in the field as much as I enjoy working with formulas and algorithms that enabled me to find solutions to problems. I was enthralled with having the power to bring theory down to practice. Perhaps especially relevant to my choice of the environmental field, is that I could see the importance of the work I was doing from the very beginning.

What I enjoy most is the fact that the work we environmental engineers and scientists do has a positive and immediate impact on peoples' lives. For me, there is nothing like completing a project that meets or exceeds expectations. That's what got me excited back then and still gets me excited today.

And closing the loop on the National Academies' workshop to relate it back to where I began, our challenge is to spread that excitement. I look forward to continue working with the students in our K–12 program as well as with the teachers who are such a critical component of the students' career choices. I would like to see the Academy put together a program that directly addresses the challenges mentioned at the NAE workshop, i.e., teachers needing help to present science and technology topics to their students. More specifically, we need to determine how we can develop tools and materials that focus on the 'environmental' in our name to elicit and develop student and teacher interests.

There are many ways to begin to address this need. Possible approaches include printed materials for different grade levels, downloadable videos that teachers could use to present environmental engineering and science related topics to their students, and hands-on types of projects or experiments that we would provide instructions for assembling and conducting. The specific needs and approaches will be defined and converted to useful materials.

There are many opportunities and challenges but nothing will be accomplished without someone, hopefully the Academy and its members, stepping up and doing something. This would involve developing connections between Academy members and their local schools whereby we would serve as a resource for the schools and their faculty. There would also be a need to spend time in the classroom to get the students excited about the work we are doing and how it impacts their lives. Our bottom line objective would be to get these students intrigued by the opportunity to find better ways of doing things in addressing present and future environmental challenges.



WHAT'S NEXT

I know that many of you are currently active in K–12 activities in your communities. The Academy needs to be able to tap your expertise and your suggestions for how best to proceed. I have no doubt that we have the ability to create a first rate program. I also have no doubt this is a very important element to the future of the environmental profession as well as to the future of the Academy. If this strikes a resonant chord with you, please feel free to contact me at daviesc@peercpc.com to discuss this opportunity to make a difference. I look forward to hearing from you and beginning to put some thinking into how we can begin to launch a new program.

This has been a year of progress for the Academy. I am grateful to each of you who have worked tirelessly in contributing to the success of the Academy during my tenure as President. Together, we have accomplished much, but much remains to be done. I encourage you to continue to support our new President, James Stahl, and his leadership team by taking an active role in volunteering and promoting the Academy in your community and with your professional network.

EXECUTIVE DIRECTOR'S PAGE

Burk Kalweit

HAPPY ANNIVERSARY TO THE ACADEMY

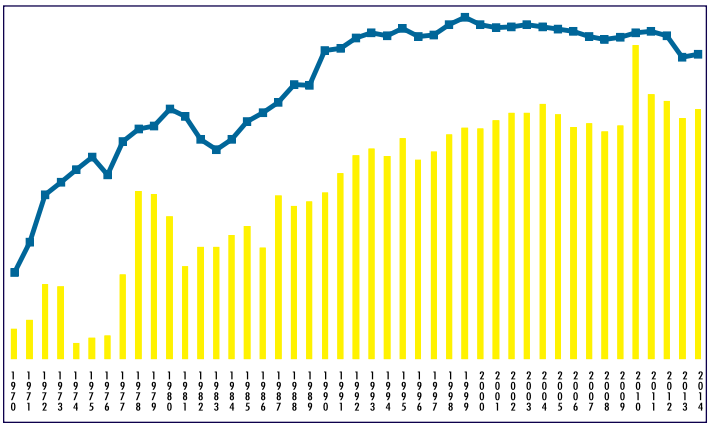
You are probably not aware of this, but in 2015, the Academy is celebrating the 60th anniversary of its founding in 1955. This is a significant milestone. When you stop and think about all the companies that were household names in 1955 that have since disappeared, the Academy's ability to survive and provide value to its membership for over six decades is remarkable.

With that in mind, we are looking for ways that we can use the anniversary as an opportunity to tell the story of the Academy. Well, actually, not the story of the Academy as much as the story of the economic, technological, political, and social backdrop that evolved during the time between the founding of the Academy and today.

But that's not really what I want to focus on. Instead, the story that needs to be told is how the profession of environmental engineering and science marched in lockstep with the progress of the other factors cited above. I think that makes a fascinating story, one that helps frame the evolution of the Academy and the record of service to the public that is at the heart of the Academy's mission.

So what I am thinking it would be interesting to do is to look at the macro trends that occurred on that six decade timeline and match those up with the changes that were occurring in the environmental engineering arena. What we want to keep in mind is how environmental engineering served an enabling function that made it possible for our social, technological, political, and economic infrastructure to grow and evolve. Notice that we left out any reference to environmental challenges and changes that occurred during this time since we can make a pretty good case that the term 'environmental' had a very different meaning in the 1955 *Encyclopedia Britannica* than it does on Wikipedia.

Something that it would be fascinating to know is what the relative share of GDP was for the environmental sector back in the 1950s and then compare that to what the share of GDP going to environmental engineering and science is now. A proxy for that appears in the chart below. This is a graph of total EPA spending (yellow columns) and the EPA workforce (blue line) between its founding in 1970 and 2013. What's pretty clear here is the fact that there has been very little change in funding or the EPA staffing levels since around 1993, i.e., for twenty years.



Of course we have to take a look at that in constant-dollar, inflation-adjusted terms for that analysis to make any sense. After all, the basic price level of 2014 — as measured by the consumer price index — is roughly a multiple of nine and a bit more on 1955 dollars. What that means is that items that cost about a dime in 1955 would cost a dollar or more in 2014. Or looking at it another way, when adjusted for inflation, EPA spending has been going downward for quite a while.

What we need to examine to tell the story properly are a variety of factors that serve as metrics for evolutionary and revolutionary change across the economy and across the country. The following short list is just a small illustration of the kinds of things that we need to consider to better understand where we were, and how far we have come, since 1955. What is going unsaid and largely unrecognized here are the enormous gains in efficiency and productivity in the environmental sector during this time. Without them, the growth of the suburbs and the significant shifts in how and where we live would never have happened. The context for our evaluation is how these large changes drove the need for environmental engineering and environmental science to evolve in ways that supported and enabled the changes in the other sectors. Let's just keep this short and illustrative.

CHANGES IN OUR NATIONAL COMPOSITION

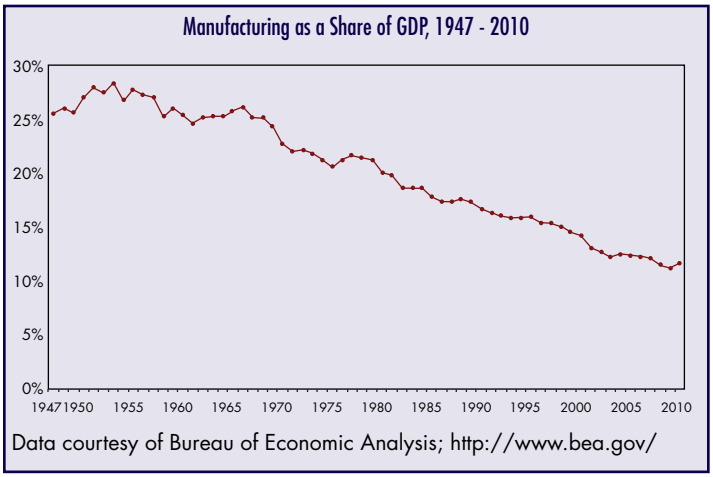
- **Population:** In 1955, population of the US was 166 million. In 2014, the population is approximately 320 million.
- **Structure of the population:** In 1955, roughly 90% of the US population is composed of people who were of Caucasian or European descent. In 2014, the percent of the US population that is white has declined to 72%. Also worth noting, 1955 was, roughly speaking, the seventh year of the postwar baby boom. 1955 can also be noted as a year in which we were just beginning to see the impact of the G.I. Bill on the structure of the American workforce and the nation's ability to transform itself from an industrial economy to a service economy due to the availability of an increasing cohort of knowledge workers.
- **Changes in the economy:** The rise of manufacturing — given that victory in World War II was largely a function of America's

"IBM 7090 computer" by NASA Ames Resarch Center (NASA-ARC) - NIX A-28284. Licensed under Public Domain via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:IBM_7090_computer.jpg#mediaviewer/File:IBM_7090_computer.jpg

manufacturing might — was created by the transition from a war economy to a peacetime economy, but it was not one that went all that smoothly. In the post 1945 era, an over-supply of manufacturing capacity contributed to the decline of this sector and sparked the rise of the service economy. In 1955, roughly 26% of economic output in the US was in the manufacturing sector. In 2014, that has declined to roughly 11% of total GDP in manufacturing. This was due to the beginnings of the information economy and the increased importance of the role of knowledge workers. What we were beginning to realize in 1955 is that there were different ways of looking at value creation. We did not have to be a nation of people who make things or grow crops or extract resources from the earth in order to be successful. In fact, the environmental engineering sector played a key role in the evolution of the economy during this time.

- **Changes in technology:** In 1955, America was still very enamored of the prospects for nuclear power. Experts extolled the virtues of nuclear power, even making pronouncements that if we built enough nuclear power plants, no one would need a meter on their house because the power would be too cheap to warrant metering. Things have changed a bit in our perception of nuclear risk and, inevitability, of a nuclear fuel electricity sector.

That's only one example. In 1955 IBM was hard at work on two products that revolutionized the computing industry — and for that



Data courtesy of Bureau of Economic Analysis; http://www.bea.gov/

> "After all, knowing the history of the situation is critical to understanding where we currently are, what forces drove us to the current status quo, and where things might go in the future."

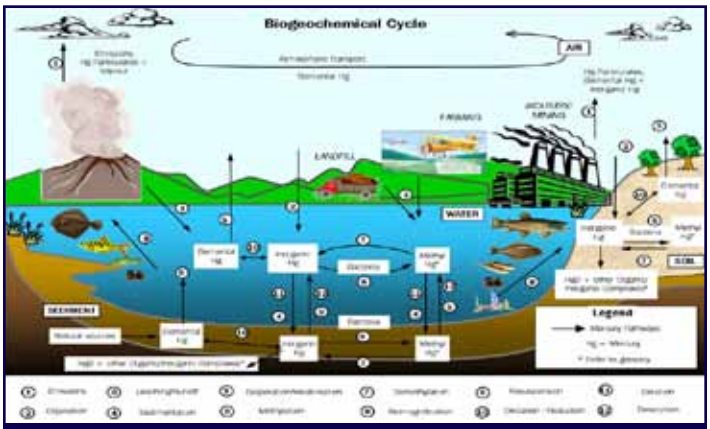
matter, American business — the introduction of the hard disk drive in 1955 and the roll out of the first System 360 in 1960. Following that, we were witnesses to the rapid evolution of information technology at the mainframe level which gave way to the minicomputer which then gave way to the personal computer which has since been giving way to the adoption of the personal communications device connected to the Internet and the World Wide Web.

What we have seen take place in the past 15 years has been the beginnings of the Internet economy. This has had significant disruptive impacts on virtually every sector of the economy. It seems quite obvious that this is a trend that is really just beginning. The rapid evolution of the Internet for personal communication is giving way to the Internet of Things (IOT), a paradigm which is leading to the creation of 'smart' services and a 'smart infrastructure' that has adaptive capabilities to maximize efficiencies and a host of other factors. The IOT is also creating the ability to build entirely new businesses that are having as large an effect in the economy as the shift from manufacturing to services.

BUILDING THE ENVIRONMENTAL INFRASTRUCTURE

Throughout these momentous changes, the ability of the environmental infrastructure to keep pace with evolving demand was never in question. Just like electricity, where we assume that there will be power available whenever we walk into a room and flip a switch, the change agents in the economy simply assumed that the people in charge of keeping the built and natural environment safe and productive and meeting our basic needs would be doing their job. It is just a given that the water will run, the street will be maintained, there will be garbage collection, there will be parks, etc. We have just gotten used to an excellent level of service in a highly dynamic environment.

That is where I think we need to step up and tell the story of what was happening behind the scenes for the past 60 years that made ev-



The Biogeochemical Hg Cycle.
Source: Ministry of the Environment, New Zealand (http://www.mte.govt.nz)

erything else possible. There is an enormous amount of ground to be covered to do this, and we would welcome your ideas for topics that you would like to see us review and report on. And they would make a great introductory statement when people ask about what environmental engineers and environmental scientists do. After all, knowing the history of the situation is critical to understanding where we currently are, what forces drove us to the current status quo, and where things might go in the future.

Reviewing the history is the enjoyable and engaging part of the assignment. But we also need to shift gears and consider future directions and demands. We need to find some answers for the following:

- What are the foremost current scientific and economic challenges that the environmental engineering and science profession is facing today?
- What are the overriding technical challenges that we face going forward, and in the context of the various areas we work in, i.e., water, air, solid waste, radiation, sustainability; i.e., how can we engineer better solutions with the resources we currently have at our disposal?
- If we can successfully deal with these challenges, what are the likely impacts of this success on the future of the profession and those working in it?

That is where we would like to hear from you. Obviously, connecting with our membership every day is a key part of what we do. However, so much of what we do happens in the context of the existing framework of programs and activities. We really don't have a good picture of what's shaping the challenges that will need to be addressed over the next decade and beyond.

What we want to do is get some indication of what you think are the critical issues, and along with that, we need to collect some ideas about potential solutions and how we can get there. I am thinking that we are going to be, with the cooperation of the appropriate committees of the Academy, doing a series of surveys in which we get your input on current developments that are of vital interest to you individually, and to the industry as a whole.

> "Get out your personal professional wish list and think about those problems that you would love to have a magic wand to wave over and fix once and for all."

> "What we want to do is get some indication of what you think are the critical issues, and along with that, we need to collect some ideas about potential solutions and how we can get there."

Our perspective needs to be shaped by not just our knowledge of the world, but also by the way others view what environmental engineering and environmental science are all about. For example, the CEO of the APHA is firmly convinced that the environment is the number one public health issue in America and around the world. He recognizes that without a clean, healthy, safe, and sustainable environment, there can be no long-term development of improved public health.

What we have is an opportunity to put the Academy on the map of influential organizations. Because we are such a far-reaching accumulation of specialty areas in environmental engineering and science, we bring to the table a perspective that no tightly focused organization can provide. Looking at the specialty certifications that the Academy offers speaks volumes about the range of technologies and technical solutions that we cover. This is where we have a great story to tell, and it is up to us to tell it.

SETTING THE STAGE

Let's all give this some careful thought. Get out your personal professional wish list and think about those problems that you would love to have a magic wand to wave over and fix once and for all. What we want to do is to build a vision for what the environmental profession is going to be doing for the next 60 years. Think about it in the context of unsolved problems. Think about it in the context of areas in which we need better technology for better systems solutions. Think about it in the context of areas in which we just don't know what's going on and why, much less have a solution for addressing a specific need (think of fracking as an example).

That's the challenge that I want to team up with you on. We have a great opportunity to demonstrate our forward thinking. We have a great opportunity to shape the future of the Academy. We have a great opportunity to define and refine what it means to be an environmental professional. And all that starts with our understanding of where we came from and how we got to where we are today.

Let's begin by celebrating those people who came together in 1955 to form the precursor of the Academy. But let's use the occasion to also celebrate the fact that we have the ability and the intellectual horsepower to drive the vision of the profession that will be as impactful to the next 60 years as was the founding of the Academy back when Eisenhower was president.

Yes, this is not a trivial assignment. When I say I want to team up with our membership to make this happen, I am completely serious. Obviously, I can't do it alone. Nor can I expect to do it with the Academy staff. The job is much bigger than that, but that's what makes it exciting. And that's what makes it worth doing. You'll be hearing from me in the next few weeks as we think about ways to launch this endeavor. I'll look forward to connecting with you then to begin the journey of the Academy's second 60 years.

MEMBER NEWS

AWARDS AND RECOGNITION

The WEF Fellows Recognition Program recognizes distinguished accomplishments and contributions of individuals who have made an impact in the global water environment in a variety of disciplines. The WEF Board of Trustees approved several individuals as the 2014 group of WEF Fellows, including the following AAEES board certified individuals:


James Crook


William P. Dee


C.P. Leslie Grady, Jr.


Kenneth D. Kerri


Enos L. Stover


R. Rhodes Trussell

- **Dr. James Crook, P.E., BCEE**, in the Regulatory Agency/Consulting Engineering category. Dr. Crook is currently a Water Reuse Consultant (Norwell, MA). He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1984.
- **William P. Dee, P.E, BCEE**, in the Consulting Engineering category. Mr. Dee has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1988 and is a Life Member. He served as AAEES President in 2008.
- **Dr. C.P. Leslie Grady, Jr., P.E., BCEE**, in the Education/Research category. Dr. Grady is the R.A. Bowen Professor Emeritus (retired) at Clemson College of Engineering and Science and is the 2014 Frederick George Pohland Medal recipient. He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1987 and is a Life Member.
- **Dr. Kenneth D. Kerri, P.E., BCEE**, in the Education/Research category. Dr. Kerri, who passed away on December 14, 2014, was an Emeritus Professor at the Office of Water Programs at California State University, Sacramento. His full obituary is on page 12 of this issue. Dr. Kerri had been a Board Certified Environmental Engineer in Sanitary Engineering since 1969.
- **Dr. Enos L. Stover, P.E., BCEE**, in the Education/Consulting Engineering category. Dr. Stover is President of Stover & Associates, Inc. (Stillwater, OK), and has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1988.
- **Dr. R. Rhodes Trussell, P.E., BCEE**, in the Engineering Design category. Dr. Trussell is President of Trussell Technologies, Inc. (Pasadena, CA), and has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1990.


OCWD General Manager Mike Markus and 60 Minutes reporter Lesley Stahl at the Groundwater Replenishment System.
Photos courtesy of Orange County Water District

Michael R. Markus, P.E., BCEE, was interviewed in a segment on 60 Minutes titled "Depleting the Water" which aired on November 16, 2014, in which Lesley Stahl reported on disturbing new evidence that our planet's groundwater is being pumped out much faster than it can be replenished. Mr. Markus' segment focused on Orange County Sanitation District's Groundwater Replenishment System (GWRS), an award-winning water purification system that takes treated wastewater and purifies it to meet or exceed drinking water standards. The full story can be viewed online at: http://www.cbsnews.com/news/depleting-the-water/.

Mr. Markus is General Manager of the Orange County Water District (Orange, CA). He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 2012.

J.B. Neethling, Ph.D., P.E., BCEE, won the 2014 WEF/AEESP Lecture Award. This award is given to a prominent researcher who has served the profession and WEF with distinction. Dr. Neethling, a leading expert in the nutrient removal field, is Senior Vice President at HDR Engineering, Inc. (Folsom, CA). He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1993 and was the 2014 AAEES Kappe Lecturer.

ON THE MOVE


Eugene DeStefano

Eugene (Gene) DeStefano, P.E., BCEE, has joined Gannett Fleming as Manager of Water Resources (South Plainfield, NJ). Mr. DeStefano is responsible for project management, business development, and strategic planning in support of Gannett Fleming's expanding water resources business line. Mr. DeStefano has worked as consultant in the water industry for 24 years. He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 2001.

Ajay Kumar, P.E., BCEE, has joined Phosphate Holdings, Inc. as Senior Vice President and General Manager of Operations (Madison, MS). Mr. Kumar has been a Board Certified Environmental Engineer in Air Pollution Control since 1996.

SPECIALTY CERTIFICATION

Ryan H. Bucceri, P.E., BCEE, was reinstated in Water Supply and Wastewater. Mr. Bucceri is Project Manager with CDM Smith (Fairfax, VA). He was originally certified in 2004.

IN MEMORIAM

Paul Francis Howard, P.E., BCEE, passed away on May 20, 2013, in his Everett, MA, home after a courageous battle with an overwhelming illness at the age of 69. Mr. Howard was born in Boston, but he grew up in Everett. He attended Our Lady of Grace Parochial School and graduated from Boston College High School. He attended Boston College receiving his BA in Mathematics, and he continued his education at Tufts University where he received his Master's Degree in Science.

Mr. Howard worked at CDM Smith, Cambridge, MA, during the 1980's and also worked for the U.S. Army Corps of Engineers for over 20 years, where he most recently served as Senior Environmental Engineer. He earned a certificate of appreciation and an achievement medal from the U.S. Army Corps of Engineers for his work on the hurricane Katrina Recovery Program.

Mr. Howard was a Life Member of the American Society of Civil Engineers. He had also been an AAEES Board Certified Environmental Engineer in Water Supply and Wastewater since 1987.


Kenneth D. Kerri

Kenneth Donald Kerri, Ph.D., P.E., BCEE, passed away suddenly after a brief illness in December 2014 at the age of 80. Dr. Kerri was born April 25, 1934, in Napa, CA. He graduated from Napa High School in 1952, attended Napa College, and Oregon State College (BSCE, 1956); University of California, Berkeley (MS in Sanitary Engineering, 1958); and Oregon State University (Ph.D., Sanitary Engineering, 1965).

He started working as a professor teaching civil and sanitary engineering classes at Sac State in 1959. He became an emeritus professor in 1997. During his teaching career Dr. Kerri mentored hundreds of civil engineering students and received several awards, including the Distinguished Faculty Award.

In 1968, he started working on operator training programs, establishing the CSUS Office of Water Programs in 1972. He served as the Project Director for projects that developed and implemented training programs for the operators of water treatment facilities, water distribution systems, wastewater collection systems, municipal and industrial wastewater treatment and reclamation facilities, pretreatment facility inspection, and utility management. In 2005, over 1 million operator training manuals had been sold and more than 250,000 operators from all over the world had enrolled in the training programs. The manuals have been adopted as textbooks in over 300 colleges and universities and have been translated into 12 differ-

Member News, continued on page 34

PAST PRESIDENT OF AAEES PASSES AWAY


Walt E. Garrison

Walter "Walt" E. Garrison passed away on November 6, 2014. Mr. Garrison was born in Newark, New Jersey, and, at the age of 16, began studying engineering at Cooper Union College. During his studies, the United States entered World War II, and Mr. Garrison volunteered to serve in the U.S. Army Corps of Engineers ultimately promoting to Captain. After the war ended, he returned to complete his engineering degree, graduating in 1948. He was then hired by the Sanitation Districts, a regional agency that currently provides wastewater and solid waste management services to over 5.5 million people residing within 78 cities and unincorporated areas within Los Angeles County. The Sanitation Districts' governing body is comprised of the mayors of the cities within the agency's service area and the Chair of the County Board of Supervisors.

During Mr. Garrison's career, he made many contributions to the agency that will be of great value long into the future. He was instrumental in the implementation of the Sanitation Districts' water reclamation program in the early 1960s with the construction of the first wastewater treatment facility specifically designed to treat water to a high quality for groundwater recharge. That facility, the Whittier Narrows Water Reclamation Plant, became a historic civil engineering landmark as designated by the American Society of Civil Engineers. Today, the Sanitation Districts operate 11 wastewater treatment plants and produce over 100,000 acre-feet of recycled water for landscape and agricultural irrigation, groundwater recharge and industrial uses at over 750 reuse sites.

With the passage of state Proposition 13 in 1978, the Sanitation Districts were faced with changing from property tax funded wastewater services to a fee-for-service based program for residential, commercial and industrial customers throughout the Sanitation Districts' service area. Mr. Garrison was tireless in his efforts to develop and implement a fee-based funding program that, with guidance of local elected officials and input from community groups, provided a foundation for future wastewater management services, which today are among the most cost effective in the country.

Mr. Garrison also played a key role in the commencement of solid waste operations by the Sanitation Districts in the early 1960s. The banning of backyard incinerators by the Los Angeles County Board of Supervisors in the late 1950s created a need for regional disposal capacity. Mr. Garrison worked to develop a system of solid waste management facilities to serve the county's needs that has provided up to 50 percent of the county's disposal capacity. Today, the Sanitation Districts operate two landfills, three materials recovery/transfer facilities, two refuse-to-energy facilities and three landfill energy recovery facilities.

Mr. Garrison was a widely respected leader in the field of environmental engineering. He served as the President of the California Water Environment Association from 1968 to 1969 and as the President of the California Association of Sanitation Agencies from 1976 to 1977. Mr. Garrison was the author of numerous technical articles and reports.

Mr. Garrison was a Life Member of AAEES. He had originally been certified in Sanitary Engineering in 1964. He served as President in 1985 and was the 1990 recipient of the Maskew Fair Award

THIS YEAR'S AAEES WEST COAST EVENT AT LMU CALIFORNIA'S SUSTAINABLE FUTURE: WATER AND ENERGY CHALLENGES A SUCCESS!

by Wendy Wert, P.E, BCEE; Photographs contributed by Steven Douglas/LMU

On September 18, 2014, the American Academy of Environmental Engineers and Scientists (AAEES) assembled the leaders of four government agencies to discuss California's sustainable future. Loyola Marymount University (LMU) served as a model venue for this collaborative discussion.

LMU launched environmental initiatives in 1990. Since that time, the university's commitment to green campus practices has grown into an innovative program known as "Green LMU."

California is in a state of emergency. In January, Governor Brown declared a state of emergency due to the drought; in August, he declared a state of emergency due to wild fires; and in September, President Obama declared California a major disaster area due to the Napa earthquake. To address concerns related to water and energy challenges, AAEES and LMU consulted with the experts. The AAEES Incoming (2015) President Mr. James Stahl, initiated the proceedings with an overview of the Academy's commitment to sustainable practices within the profession.

Mr. Stahl is currently a Vice President and Senior Technical Advisor for MWH Global. Prior to that, he served as the Chief Engineer and General Manager for the Sanitation Districts of Los Angeles County 1969-2007 (38 years). The Sanitation Districts has a 50 plus year history of water reclamation and provide tertiary treated water for direct industrial reuse, landscape irrigation, agricultural irrigation and groundwater recharge. The Sanitation Districts completed construction of its first water reclamation facility, the Whittier Narrows Water Reclamation Plant, in 1962. In 2014, over 100,000 acre-feet of recycled water was beneficially used — that is enough to supply the needs of half a million people. More recycled water is beneficially reused by the Sanitation Districts than any other single producer in United States. In addition, recycled water is inherently drought-proof and each acre-foot saves 3,000 kilowatt-hours of energy.

The AAEES LMU sustainability panelists represented the leadership of four interactive governmental sectors that influence environmental sustainability in California.

Steve Bohlen is the State Oil and Gas Supervisor and head of the Division of Oil, Gas and Geothermal Resources (DOGGR). Dr. Bohlen has devoted much of his career to using scientific evidence to inform policy development at multiple levels of federal and state government. Prior to joining DOGGR, Bohlen served science and society as a prominent researcher, professor, and senior manager of national and international research programs in the geosciences. Dr. Bohlen discussed the challenges to and steps toward achieving sustainable energy resources in California. It is the mission of the Department of Conservation's to balance today's needs with tomorrow's challenges and foster intelligent, sustainable, and efficient use of California's energy, land, and mineral resources.

> "For LMU, sustainability is an integral part in all campus decision-making. In addition, in 2007, we created the Environmental Stewardship and Sustainability Committee with faculty, student, and senior staff representatives, which provides us with new ideas and serves as a watchdog to ensure that everyone takes seriously the university's commitment to environmental justice and sustainability."
>
> *President David Burcham*

Sustainability Panelists, Stephen Bohlen, Nancy Steele, Jennifer Lucchesi, and Jonathan Bishop.

Dr. Bohlen explained that DOGGR's role is inherently in conflict and not for the "faint of heart" since they are commissioned with both supporting economic growth and protecting California's natural resources. For example, DOGGR is currently reviewing the state's Underground Injection Control (UIC) Program in order to ensure compliance with the requirements of the Safe Drinking Water Act, designed to prevent wastewater associated with oil production from being injected into aquifers containing water suitable for human or agricultural use. The Division became aware that some wells might be injecting into non-exempt zones while reviewing documents related to implementation of SB 4, the state's new law regarding the use of well stimulation. The orders were issued after DOGGR discovered that the wastewater disposal wells appeared to be injecting into protected sources of groundwater. The disposal permits suspended may have allowed injection into aquifers that do not appear to have received the necessary "exempt" designation from the USEPA.

"We shut these wells down and ordered the operators to provide information and conduct testing to ensure human and environmental health and safety are not at risk," said Steve Bohlen.

During the question and answer portion of the program, a participant asked about the water use related to hydraulic fracturing practices in California. Dr. Bohlen explained that there are differences between the typical use of hydraulic fracturing in California and elsewhere. For instance, in other states, the extraction of unconventional natural gas resources requires lengthy fracturing periods along lengthy stretches of horizontally-drilled production wells. Millions of gallons of water are injected under constant pressure, a process that may take days or weeks, in order to effectively open the reservoir rock. In California, much less water is used and the period of pressurizing the reservoir rock is much shorter. In other states, the extent of fracturing in unconventional rock stretches for hundreds of yards along the horizontal well and the fractures stretch farther away from the well. In California, fracturing projects tend to use far less fluid to fracture within a narrow vertical band along a well, generally starting at a point several thousand feet underground, with the fractures extending only tens to hundreds of feet away from the well.

Nancy Steele is the Executive Director of the Council for Watershed Health. Dr. Steele joined the Council as its Executive Director in 2005. In 2010, Nancy was recognized for her work in Energy and Environment with the 21st Senate and 44th Assembly Districts' Women in Business award. Dr. Steele serves on the board of the Marine Conservation Research Institute and as Vice-Chair of the Upper Los Angeles Integrated Regional Water Management steering committee.

Dr. Steele described the Council's vision for transforming communities in Southern California. The Council's lens is sustainable water management. The traditional complete streets concept focuses on making streets and neighborhoods pedestrian (and bicyclist) friendly — focusing on the human scale rather than the motor vehicle scale. Complete green streets look to how we can bring nature back to neighborhoods. Urban water runoff are water quality and resource efficiency concerns, which can be solved by sustainable planning methods that take into account climate, transportation, and the needs of the community.

Jennifer Lucchesi is the Executive Officer of the California State Lands Commission. Officer Lucchesi was appointed to the position of Executive Officer in 2012. Officer Lucchesi applies land use practices to California's ports, harbors, and waterways to effectively balance correlated economic, social, and environmental goals.

Attendees listen as California Government Leaders discuss the state's Water and Energy Challenges.

Participants including students, environmental consultants, government representatives, academics, and community members listen intently to discussions related to the future of our Golden State.

Ms. Lucchesi explained that the California State Lands Commission manages approximately four million acres of land underlying the state's navigable and tidal waterways. These sovereign lands include the beds of navigable rivers, lakes, and streams. Many overlay groundwater resources. The Commission develops protocols to help manage these sensitive lands in a way that protects our groundwater.

Economic viability is one of the three pillars of sustainability. Ms. Lucchesi announced that in the spirt of economic sustainability and fiscal transparency, the California State Lands Commission became the first statewide agency to open its finances to the public using the cloud-based OpenGov.com platform. Ms. Lucchesi said that over the last 6 months, the process of "opening their books" has been streamlined and useful. Surprisingly, they have found that the Commissions "internal clients", i.e. employees are getting the most use and benefit out of easily accessible fiscal information. Since the Commission provided a "case study" for OpenGov.com they were given economic support and maintenance costs for the initial 5 year contract.

Jonathan Bishop is the Chief Deputy Director of the State Water Resources Control Board. Director Bishop oversees the Division of Water Quality and the Division of Financial Assistance. Prior to joining the SWRCB, he served on the Los Angeles Regional Water Quality Control Board, where he was instrumental in the development of a new program to investigate the sources of groundwater contamination impacting drinking water wells.

Mr. Bishop explained that in response to the ongoing severe drought, the State Water Resources Control Board approved an emergency regulation to ensure water agencies, their customers and state residents, increase water conservation in urban settings or face possible fines or other enforcement.

The new conservation regulation is intended to reduce outdoor urban water use. The regulation, adopted by the State Water Board, mandates minimum actions to conserve water supplies both for this year and into 2015. Most Californians use more water outdoors than indoors. In Los Angeles County, 50 percent or more of daily water use is for lawns and outdoor landscaping.

With this regulation, all Californians will be expected to stop: washing down driveways and sidewalks; watering of outdoor landscapes that cause excess runoff; using a hose to wash a motor vehicle, unless the hose is fitted with a shut-off nozzle, and using potable water in a fountain or decorative water feature, unless the water is recirculated. The regulation makes an exception for health and safety circumstances.

Larger water suppliers will be required to activate their Water Shortage Contingency Plan to a level where outdoor irrigation restrictions are mandatory. In communities where no water shortage contingency plan exists, the regulation requires that water suppliers either limit outdoor irrigation to twice a week or implement other comparable conservation actions. Finally, large water suppliers must report water use on a monthly basis to track progress.

Local agencies could ask courts to fine water users up to $500 a day for failure to implement conservation requirements in addition to their existing authorities and processes. The State Water Board could initiate enforcement actions against water agencies that don't comply with the new regulations. Failure to comply with a State Water Board enforcement order by water agencies is subject to up to a $10,000 a day penalty.

"We are facing the worst drought in our 100 years of historical records," said Chief Deputy Director Jonathan Bishop. The drought's impacts are being felt by communities all over California. Fields are fallowed; communities are running out of water, fish and wildlife will be devastated. The least that urban Californians can do is to not waste water on outdoor uses. It is in our best-interest to conserve more, now.

In addition to approving the emergency conservation regulation, the State Water Board made a plea for water suppliers, communities, and businesses to do even more. For example, water agencies are being asked to step up their programs to fix leaks and other sources of water loss, use more recycled water or captured stormwater, and find additional ways to incentivize demand reduction among their customers.

As drought conditions continue, the State Water Board may revisit this regulation and consider other measures to enhance conservation efforts throughout the state. For more information on the proposals leading to this Board action, please visit the Emergency Water Conservation website at www.swrcb.ca.gov.

Governor Brown has called on all Californians to reduce their water use by 20 percent and prevent water waste — visit SaveOurH2O.org to find out how everyone can do their part, and visit Drought.CA.Gov to learn more about how California is dealing with the effects of the drought.

Funding is the biggest hurdle to developing sustainable water resources management programs

Joseph Reichenberger, Wendy Wert, Nancy Steele, Jennifer Lucchesi, and Jonathan Bishop

Attendees

in Southern California. The smaller ($7 billion) water bond will appear on the November statewide ballot as Proposition 1. ($2.7 billion for water storage projects, $900 million for groundwater cleanup and monitoring, $725 million for water recycling and $1.5 billion for watershed restoration programs.)

The AAEES LMU Sustainability Panel discussion concluded with the realization that California is facing serious water and energy challenges. Talented, dedicated, and skilled leaders are needed to develop viable solutions to these resource needs. An essential component of Certification is the Academy's continuing education requirements. The 2014 West Coast Event provided the membership with an enlightened and inspired training opportunity. Through collective discussions such as the one between DOGGR, the State Lands Commission, the Council for Watershed Health and the State Water Resources Control Board the profession, continues its journey toward making sustainable water and energy practices a reality in California. A

Academy News, continued from page 5

Following is a list of those who will chair the Academy's committees:

- Audit Committee - **Richard P. Watson**
- Awards Committee - **Christian Davies-Venn**
- Honorary Member Selection Sub-Committee - **Christian Davies-Venn**
- Brewster Snow Student Selection Committee - **James Mihelcic**
- Bylaws, Policies & Procedures Committee - **Stephen G. Lippy**
- Admissions Committee - **Sandra L. Tripp**
- Certification by Eminence Committee - **Cecil Lue-Hing**
- Membership, Development & Outreach Committee - **Robert C. Williams**
- Re-Certification Committee - **Lisa Woodward**
- Development & Upgrading of Examinations - **Robert H. Gilbertsen**
- Air Pollution Control Committee - **Mark P. Cal**
- Environmental Sustainability Committee - **Brian P. Flynn**
- General Environmental Engineering Committee - **Findlay Edwards**
- Hazardous Waste Management Committee - **James D. Fitzgerald**
- Industrial Hygiene Committee - **Frederick W. Boelter**
- Radiation Protection Committee - **Jafir Abbas Jaferi**
- Solid Waste Management Committee - **Robert B. Gardner**
- Water Supply and Wastewater Committee - **Jeffrey H. Greenfield**
- Diversity Committee - **Tapas A. Das**
- Engineering Education Committee - **David A. Chin**
- Excellence in Environmental Engineering Committee - **David M. Gaddis**
- Finance Committee - **Daniel B. Oerther**
- International Relations Committee - **Kumar Topudurti**
- K-12 Committee - **Richard J. Pope**
- Nominating Committee - **Christian Davies-Venn**
- Planning Committee - **C. Hunter Nolen**
- Publications Committee - **C. Herb Ward**
- Revenue Generation Work Group - **Jay R. Witherspoon**
- Seminars and Workshop Committee - **Sarah Cwikla**
- Students & Young Professionals - **Nick Rose**
- Website Work Group - **Dan Wittliff**

PDH ONLINE

AAEES is partnering with PDH Online to provide members with the opportunity to earn their required professional development hours from a broad array of topics and formats. Once you find a course that interests you, AAEES certificate holders and members can use the code AAEE25 to receive a 25 percent discount for any of PDH Online's 2,000+ courses. Members can search courses and sign up at www.pdhonline.org or www.pdhcenter.com.

PDH Online is an approved course sponsor by many state professional engineering licensing boards. More than 100 of its courses have been developed by BCEEs. You can contact Joyce Dowen at JDowen@aaees.org if you have any questions.

SHINING THE SPOTLIGHT ON YOU

The Academy has special features on its website and in electronic and print publications in recognition of you, **the Academy's honored professionals**. Send your submissions to YMoulden@aaees.org for:

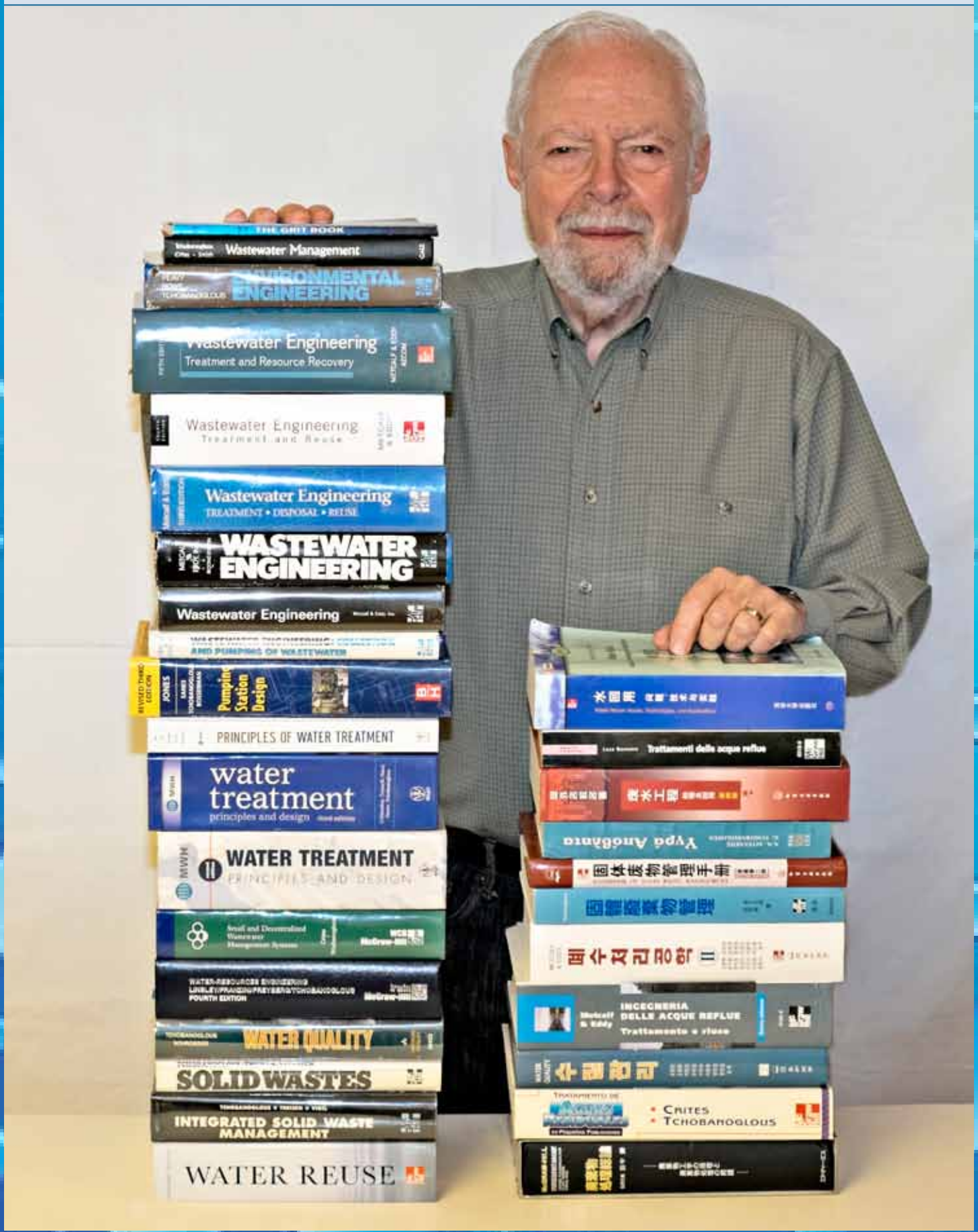
Volunteer of the Month

Part of the Academy's success lies with the selfless work of its members. Do you know of a member that always goes above and beyond? Then send a 350-word nomination for **Volunteer of the Month**.

Side Tracks

Interested in knowing about the extracurricular activities of your fellow Academy members? Or do you have fun (or possibly funny) stories you'd like to share? *Side Tracks* is intended to provide a vehicle for learning about the outside interests of your colleagues. A

GEORGE TCHOBANOGLOUS, PH.D., P.E., NAE, BCEE



George Tchobanoglous is Professor Emeritus in the Department of Civil and Environmental Engineering at the University of California, Davis. A prolific author, he has written more than 525 publications including articles, textbooks, reference books, book chapters, and reports. He has given more than 530 technical presentations in the United States and abroad, including Africa, Asia, Europe, the Middle East, and South America.

Known for bridging the gap between academia and the day-to-day world of the engineer, Dr. Tchobanoglous' textbooks are used extensively worldwide in English and in translation. They are valued both as teaching texts in more than 220 colleges and universities in the United States, and as reference sources by practicing engineers. *Wastewater Engineering: Treatment and Resource Recovery*, is an industry standard now in its 5th edition (2014). First published in 1971, prior to the passage of the Clean Water Act (CWA) in 1972, the book was one of the first comprehensive sources of information that could be used to educate both students and specialists on the science and practice of environmental engineering. Similarly, the textbook *Solid Waste: Engineering Principles and Management Issues* was groundbreaking because it focused on the fundamentals and concepts needed to develop the field of solid waste management and presented a coherent and holistic approach.

His research interests include wastewater treatment and water reuse, small and decentralized wastewater management systems, and solid waste management. At age 79 he is busier than ever, most recently focusing on direct potable reuse. In 2011, he was the principal author of the widely-quoted white paper "Direct Potable Reuse: The Path Forward." He chairs the National Water Research Institute Panel to develop a framework document for direct potable reuse and in 2014, with Bob Raucher, he published "The Opportunities and Economics of Direct Potable Reuse."

Dr. Tchobanoglous has received numerous awards and honors including the Gordon Maskew Fair Award (1985), the Jack Edward McKee Medal (1999), the Athalie Richardson Irvine Clarke Prize (2003), an Honorary Doctor of Engineering Degree from the Colorado School of Mines (2005), the Frederick George Pohland Medal (2007), and the AAEES Excellence in Engineering Education Award (2012). He is a registered engineer in California and a member of the National Academy of Engineering.

Below, he describes his life and work—from growing up on a small California farm to the development of ideas and writings that have influenced generations of environmental engineers and others.

Lynn Anderson

GROWING UP IN THE CENTRAL VALLEY OF CALIFORNIA

My father immigrated to the United States via Canada and settled in Patterson, CA, in 1913, where he purchased 20 acres of land adjacent to the Stanislaus River. Interestingly, coming from Greece where small plots were the norm, he could not imagine what one would do with more land. Because 20 acres was more than he could manage using a horse for tilling the soil, he later sold 10 acres. My mother was a correspondence bride arranged through mutual friends. My father traveled to Greece in 1928 where they were married. Life in Patterson was a great shock for my mother who had been reared and educated in cosmopolitan Athens, but working together they survived and thrived. Throughout her life, she maintained her interest in literature and wrote more than 50 articles and poems for Greek language periodicals, many of them based on her experiences in Patterson. My sister was born in 1929, and I was born in 1935. Greek was my first language growing up.

My parents grew grapes, walnuts, and vegetables that we supplied to local markets and that people from town came out to buy. During high school, I raised and sold rabbits and worked on a large farm owned by a family friend. I enjoyed farming and might have become a farmer if my father's land holdings had been more substantial. In any case, my mother insisted that I go to college, like my sister, although I had not decided what to study. I enjoyed art and math and had received a scholarship to an art school in southern California, but it was not enough to cover all costs. At about the same time, a local construction contractor offered a full-tuition Civil Engineering scholarship to the College of the Pacific (COP, now the University of the Pacific), along with summer employment, to a graduating senior from Patterson High School. Receiving this scholarship was a pivotal event in my life.

> "I enjoyed farming and might have become a farmer if my father's land holdings had been more substantial."

COLLEGE OF THE PACIFIC (COP), STOCKTON, CALIFORNIA

I met my wife, Rosemary, on the first day of freshman orientation at COP. We married after her graduation in 1957. I graduated from COP in 1958 after completing another year of course work, while Rosemary taught 4th grade to support us. Although I majored in Civil Engineering, I found myself drawn to water-related subjects. During my fifth year at COP, the California Water Pollution Control Association had its annual meeting in Stockton and a past graduate of the Civil Engineering program at COP invited me to attend as his guest. At that meeting I met Professor Percy "Mack" McGauhey, who encouraged me to apply to the graduate program in Sanitary Engineering at the University of California at Berkeley.

UNIVERSITY OF CALIFORNIA AT BERKELEY

I applied and received a teaching assistantship at UC Berkeley working for Professors Warren Kaufman and Jerry Thomas. Our first daughter, Kathryn, was born in 1959 during my first year as a graduate student. I completed my Master's degree Sanitary Engineering in 1960. Before graduation, Professor Erman Pearson asked if I would be interested in working on a study of solid waste management at west coast US Naval installations. I spent the next two years working on the project—another important event in my life—as I had to write the final report. My immediate supervisor at the Richmond Field Station office was a stern taskmaster who taught me how to put reports together and especially how to develop and present data in tabular form. Both skills have served me well in my teaching, writing, and consulting career. Our second daughter, Lynn, was born in 1961.

During the second year on the project, Professor Rolf Eliassen (known to me as Dr. E), then at MIT, spent a sabbatical year at Berkeley. Periodically, he would visit the Richmond Field Station. On one of his visits, he asked me if I would be interested in applying to a new Ph.D. program in En-

Our wedding day, June 1957

My mother, Penelope, with our daughters, Kathryn, Julianne, and Lynn in 1965.

> "My immediate supervisor at the Richmond Field Station office was a stern taskmaster who taught me how to put reports together and, especially, how to develop and present data in tabular form. Both skills have served me well in my teaching, writing, and consulting career."

vironmental Engineering he was starting at Stanford University. I waited for a year, during which time I worked for Water Resources Engineers (a company headed up by Jerry Orlob), applied and was accepted into the new program at Stanford.

Students from my Solid Waste class at UCD sorting municipal solid waste at the Yolo County, CA, landfill. (October 1990)

STANFORD UNIVERSITY

Having been awarded a Federal Water Quality Control Administration Fellowship that covered tuition and provided a small stipend, I began my studies at Stanford in the fall of 1963. Our third daughter, Julianne, was born shortly after we arrived. Because the stipend did not cover all of our living expenses, Dr. E offered me the opportunity to work part time at Metcalf & Eddy (M&E, now a part of AECOM) at which he was a partner. At M&E, I was involved in a number of water quality studies and industrial waste treatment projects. My Stanford experience was also unusual in that Dr. E allowed me to take a number of different courses outside my field of study, such as advanced surface chemistry. The research for my Ph.D. thesis, which was on the filtration of secondary effluent, was conducted at the Palo Alto Wastewater Treatment Plant. Working part time, I finished my Ph.D. in five years. While at Stanford, I had the opportunity to publish a number of papers including one with Dr. E titled "The Indirect Cycle of Water Reuse," a subject of renewed interest today.

My involvement with the M&E textbook began in the fall of 1967. Dr. E returned from his summer holidays during which he wrote chapters for an update of the 1935 textbook edition of the original three-volume *American Sewerage Practice*. Noting that they were a bit rough, he asked me to review his chapters and help rewrite them. I worked on writing and editing the first edition of the modern version of the M&E textbook through 1971.

I stayed on at Stanford as an acting Assistant Professor for the 1969–70 school year and ended up teaching all the courses that would have been taught by Dr. E and Perry McCarty who were both away on sabbatical leave. During my last year at Stanford, I interviewed for a position at the University of California at Davis (UCD). The position had been kept open by one of my previous mentors at the Richmond Field Station, Ray Krone, who had gone to UCD to teach and help start the program in Environmental Engineering. I was offered the position and began my teaching career there in the fall of 1970.

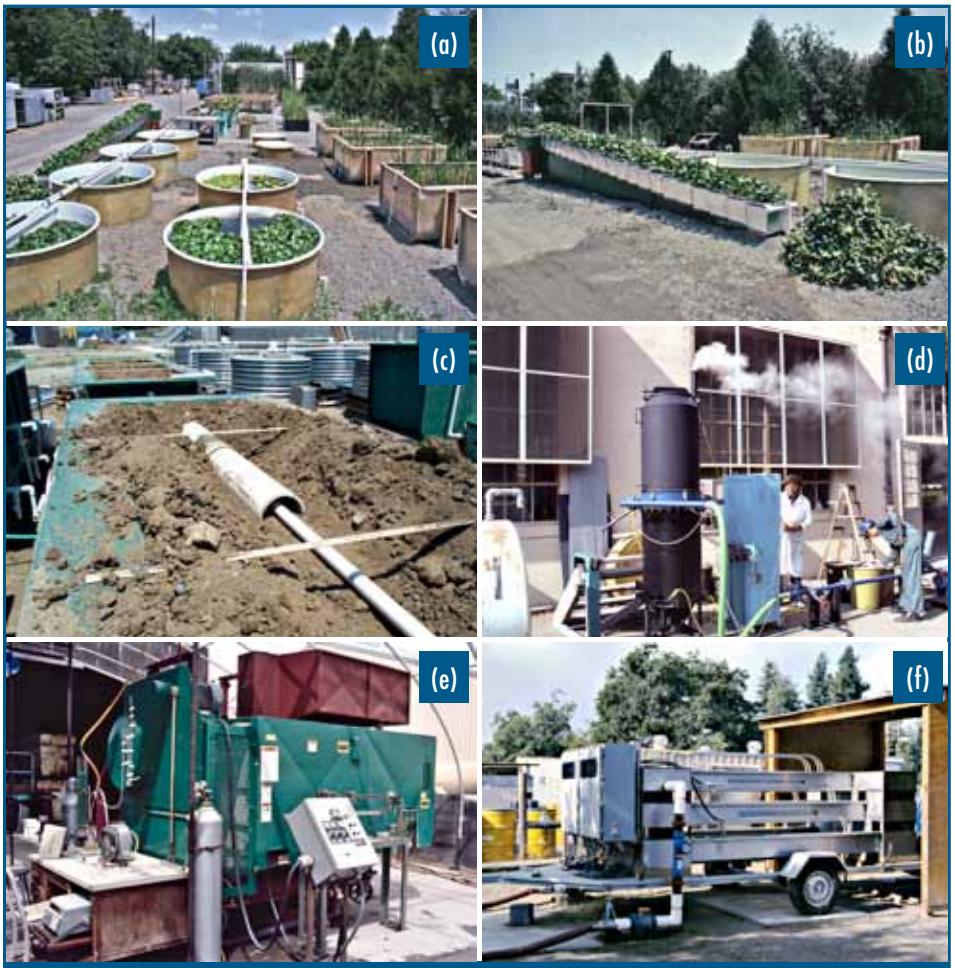
UNIVERSITY OF CALIFORNIA AT DAVIS

My first year at UCD, I was assigned to teach surveying. What a shock! I hardly knew which end of the level to look through. In those days, we still had "Wye" levels, dating back to the 1920s, with cross hairs made of spider webs. Somehow I survived and ended up teaching surveying for 12 years. I also started teaching an undergraduate course on solid waste management, which allowed me to share and apply what I had learned from my earlier studies of waste

> "Although I majored in Civil Engineering, I found myself drawn to water-related subjects."

"With the exception of the textbook *Wastewater Engineering: Collection and Pumping of Wastewater*, all of my books have been collaborations with other authors, as I enjoy the stimulus and interaction that comes from working together as a team."

Filtration studies at the UCD campus WWTP:
(a) HydroClear pulsed-bed filter,
(b) Parkson upflow filter and conventional dual-medum and single-medium deep-bed filter columns,
(c) Schreiber compressible-medium filter,
(d) traveling-bridge shallow-bed filter, and
(e) intermittant sand filters for onsite systems.



Other research studies conducted at UCD:
(a) use of aquatic plants for wastewater treatment,
(b) study of water hyacinth treatment kinetices in staged reactors,
(c) use of shallow leachfields for dispersal of septic-tank effluent,
(d) processed solid-waste gasification,
(e) municipal high-solids anaerobic composting, and
(f) ultraviolet light disinfection.

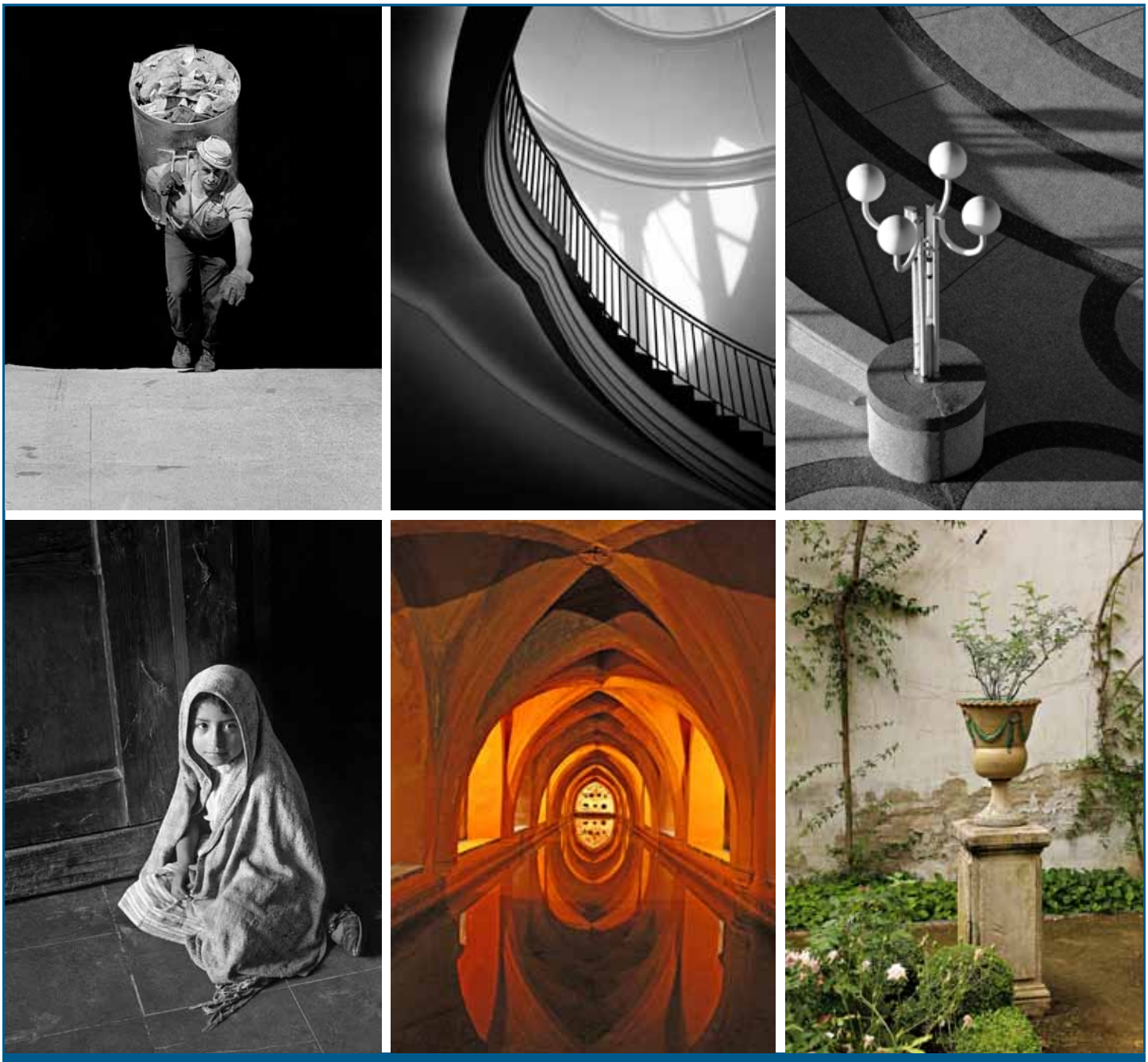
Recent (2013) pilot-scale evaluations at UCD WWTP:
(a) cloth-screen filter and
(b) Charged Bubble Flotation as replacement processes for primary sedimentation

"On one of his visits, he [Professor Rolf Eliassen [known to me as Dr. E]] asked me if I would be interested in applying to a new Ph.D. program in Environmental Engineering that he was starting at Stanford University."

management at naval installations. About the same time, Ed Schroeder and I alternated teaching a course on water quality. Because I could not find a suitable textbook for either the solid waste or the water quality course, I developed an extensive class syllabus and course notes. After several years of teaching from the course notes, I discussed the possibility of writing a solid waste textbook with Dr. E and Larry Theisen, a former colleague at M&E. Both agreed it was a good idea, and the first edition of the solid waste management textbook was published in 1976. Ed Schroeder and I completed the textbook *Water Quality: Characteristics, Modeling, Modification*, also based on our class notes, in 1985. Many of the other books I have written have followed a similar pattern. With the exception of the textbook *Wastewater Engineering: Collection and Pumping of Wastewater*, all of my books have been collaborations with other authors, as I enjoy the stimulus and interaction that comes from working together as a team.

When I arrived at UCD, the campus wastewater treatment plant was located a few blocks from my office, which made it convenient to undertake a variety of pilot and

"Because I write and publish extensively, I believe the ability to write well is an important skill for any engineer."



Images from gallery shows taken (clockwise from upper left) in San Francisco, Germany, Israel, Italy, Spain, and Mexico. The image of the waste collector was used on the dust jacket for the solid waste textbook and published in *Popular Photography* magazine in November 1977.

full-scale studies of wastewater treatment technologies. My principal areas of research included the filtration of secondary and primary effluent, the use of constructed wetlands for wastewater treatment, treatment systems for onsite systems, solid waste gasification, high-solids composting, and UV disinfection. Based on the work conducted at UCD, alternative filtration technologies including the Parkson upflow filter, the Hydroclear pulsed bed filter, the Schreiber compressible medium filter, the Aqua Aerobics traveling bridge and disk filter, were approved by the California Department of Public Health for use in "Title 22" water reclamation applica-

Rosemary and our daughters, Lynn, Julianne, and Kathryn in 2011

Our extended family on our 50th Wedding Anniversary in 2007. Our grandchildren, Rachel, Jacalyn, and Davis.

"It must be mentioned that none of the accomplishments discussed above could have been possible without the love and support of my family."

tions. Most recently, the M2 Renewables cloth filter and the Charged Bubble Flotation process have been tested as replacement processes for primary sedimentation, at the new campus wastewater treatment plant.

Because I write and publish extensively, I believe the ability to write well is an important skill for any engineer. Recognizing the need to improve the writing skills of our graduate students, I developed and taught a class in report writing, the notes from which evolved into the first edition in 2011 of *A Guidebook on the Preparation of Technical Reports, Papers, and Presentations*, written with Harold Leverenz (a colleague at UCD). The 2013 second edition is available free of charge online. I have also taught report writing classes to public agencies and professional organizations.

LIFE AFTER RETIREMENT

Since taking advantage of a "golden handshake" to retire in 1995, life has been busier than ever with continued teaching and research, writing articles, preparing revised editions of my books, consulting, and serving on expert panels. In 2003, Rosemary and I used the stipend that came with the Clarke Prize to establish a scholarship fund at UCD, specifically for students pursuing a Master's degree in Environmental Engineering.

My interest in photography, which began in high school, has continued unabated. After printing my own black-and-white photographs for more than 30 years, I switched from film to digital when the quality improved. I have taken most of the pictures for my textbooks and publications and have also had two gallery exhibitions of my black-and-white and color photography. As time allows, I devote effort to my rose garden where I cultivate roses in pots with drip irrigation, and to indoor plants in my home office.

In addition to extensive work-related travel, for consulting and speaking engagements, Rosemary and I enjoy traveling together and have visited more than 50 countries. In 2014, we went to Easter Island, toured Italy

> "In 2003, Rosemary and I used the stipend that came with the Clarke Prize to establish a scholarship fund at UCD, specifically for students pursuing a Master's degree in Environmental Engineering."

with our 15 year-old granddaughter, and toured the wine country in France, with a stopover in Toulouse to visit our daughter Lynn and her family.

PERSONAL REFLECTIONS

It must be mentioned that none of the accomplishments discussed above could have been possible without the love and support of my family. Rosemary gets all the credit for managing the household and rearing our daughters while I was busy working on research projects and writing. Over the years, she has also been willing to type, read, and edit my writings and offer helpful suggestions.

Our daughters have also been supportive even though many of our family vacations involved visits to landfills and wastewater treatment plants. All three girls are now married. Kathryn is a lawyer, Lynn is an artist and writer, and Julianne works as a paralegal. We have three grandchildren; two granddaughters in Delaware and our grandson in France. Rosemary and I celebrated our 50th wedding anniversary in 2007. We look forward to another busy year in 2015 filled with travel, writing, engineering, and family adventures.

Awards and Honors

- AEESP Lecturer at AWWA AC/E Conference, 2014
- Kappe Lecturer, AEESP and AAEES, 2013
- AEESP Lecturer at the 2013 Education, Research and Practice Conference
- Elected a WEF Fellow, 2012
- Excellence in Engineering Education Award, AAEES and AEESP, 2012
- Inducted into the Greek Technical Chamber (Association of Engineers) as an Honorary member. First such honoree, 2010.
- Distinguished Speaker, Distinguished Speaker Series 2009-2010, University of Miami, Miami, FL, 2010
- The Frederick George Pohland Medal, AAEE and AEESP, 2007
- Distinguished Lecturer, Department of Civil, Architectural, and Environmental Engineering, University of Texas, Austin, TX
- Honorary Doctor of Engineering Degree, Colorado School of Mines, 2005
- Waste-To-Energy Research and Technology Council Distinguished Service Award for Research and Education in Integrated Waste Management, 2004
- Inducted into the National Academy of Engineering, 2004
- Athalie Richardson Irvine Clarke Prize, National Water Research Institute, 2003
- AEESP/WEF Keynote Research Lecture, 2002
- Jack Edward McKee Award, Water Environment Federation, 1999
- Special Recognition Award For Service To The Profession, The Engineering Council of Sacramento Valley, California, 1993
- Thomas R. Camp Lecturer, Boston Society of Civil Engineers, 1991
- President, Association of Environmental Engineering Professors, 1989
- Gordon Maskew Fair Medal, Water Pollution Control Federation, 1985
- Distinguished Alumnus of the Year for Public Service, University of the Pacific, 1985
- Outstanding Teacher Award, School of Engineering, University of California at Davis, 1980

Books Published

- Metcalf & Eddy, Inc. (1972) *Wastewater Engineering: Collection, Treatment, Disposal*, G. Tchobanoglous acknowledged as principal writer and editor in preface, McGraw-Hill Book Company, New York.
- Tchobanoglous, G., R. G. Smith, and R. Crites (1976) *Wastewater Management: A Guide to Information Sources*, Gale Research Company, Detroit, MI.
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- Linsley, R.K., J.B. Franzini, D. Freyberg, and G. Tchobanoglous (1992) *Water Resources Engineering*, 4th ed., McGraw-Hill Book Company, New York.
- Tchobanoglous, G., H. Theisen, and S.A. Vigil (1993) *Integrated Solid Waste Management: Engineering Principles and Management Issues*, McGraw-Hill Book Company, New York.

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- Angelakis, A., T. Asano, E. Diamadopoulos, and G. Tchobanoglous (eds.) (1996) *Wastewater Reclamation and Reuse 1995, Water Sci. and Technol.* 1.
- Crites, R., and G. Tchobanoglous (1998) *Small and Decentralized Wastewater Management Systems*, McGraw-Hill Book Company, New York.
- Sanks, R. L., G. Tchobanoglous, B. Bosserman, D. Newton, and G. Jones (eds.) *Pumping Station Design*, Butterworths Publishers, Stoneham, MA.
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Selected Recent Publications

- Tchobanoglous, G., H. Leverenz, M.H. Nellor, and J. Crook (2011) *Direct Potable Reuse: A Path Forward*, WateReuse Research and WateReuse California, Washington, DC.
- Leverenz, H.L., G. Tchobanoglous, and T. Asano (2011) "Direct Potable Reuse: A Future Imperative," *J. Water Reuse and Desal.*, **1**, 1, 2-10.
- Tchobanoglous, G., and H. Leverenz (2012) The Rationale for Decentralization of Wastewater Infrastructure, Chap. 8, in T.A. Larson, K.M. Udert, and J. Lienert (eds.) *Wastewater Treatment: Source Separation and Decentralization*, IWA Publishing, London.
- Schroeder, E.D., G. Tchobanoglous, H.L. Leverenz, and T. Asano (2012) *Direct Potable Reuse: Benefits for Public Water Supplies, Agriculture, the Environment, and Energy Conservation*, National Water Research Institute, Fountain Valley, CA.
- Englehardt, J., T. Wu, and G. Tchobanoglous (2013) "Urban Net-Zero Water Treatment and Mineralization: System Modeling and Design," *Water Res.*, **47**, 13, 4680-4691.
- Tchobanoglous, G., and H.D. Stensel (2014) "The Future of Activated Sludge," *Environmental Engineer and Scientist*, **50**, 1. 47-49.
- Raucher, R., and G. Tchobanoglous (2014) *The Opportunities and Economics of Direct Potable Reuse*, WateReuse Research, Washington, DC.

THANK YOU

Thank you to our 2014 AAEES Annual Board of Trustees Meeting.

CLASS OF

Compiled by J. Sammi Olmo

From the first applicants in 1956 to the **Board Certified Environmental Engineers (BCEE)**, **Board Certified Environmental Engineering Members (BCEEM)**, and **Board Certified Environmental Scientists (BCES)** listed on the following pages, the Academy has undergone growth and change, but has never wavered from it's core objective to "identify and credential persons with special capabilities in environmental engineering and environmental science."

Interest continues to grow on an annual basis.

To be included in an annual class, the application for specialty certification must be submitted to the Academy by March 31. Any application received after that date is held over to the next class. The applications received by March 31 are then reviewed by the Admissions Committee in April and May for adequacy of education and qualifying experience.

Examinations are administered to the qualified applicants during July and August at convenient locations throughout the country. The examination results are reviewed by the Admissions Committee in September, and recommendations for each candidate are presented to the Board of Trustees. Each person's history is reviewed by the Board members at the Academy's Annual Meeting.

The Academy announces the issuance of specialty certificates of Board Certified Environmental Engineers, Board Certified Environmental Engineering Members, and Board Certified Environmental Scientists status to those individuals portrayed in this special section of the *Environmental Engineer and Scientist*. Those persons have demonstrated to their peers that they possess the requisite formal education and environmental engineering or environmental science practical experience and have successfully completed the Academy's examinations to be Board Certified Environmental Engineers (BCEE), Board Certified Environmental Engineering Members (BCEEM), and Board Certified Environmental Scientists (BCES).

Minimum qualifications for Board Certification include requisite degree and 8 years' experience (4 years in responsible charge).

- **Board Certified Environmental Engineer (BCEE):** environmental engineering or related engineering degree plus P.E. license.
- **Board Certified Environmental Scientist (BCES):** environmental science or related science degree.
- **Board Certified Environmental Engineering Member (BCEEM):** environmental engineering or related engineering degree plus 20 years' experience (no P.E. required). BCEEMs are cetified through Eminence only.

Applicants with fewer than 16 years experience sit for a written examination and a peer review in their selected specialty area. Those with 16 or more years of experience may request a waiver of the written examination. A Master's and Ph.D. each count as 1.5 years toward the years-of-experience requirements.

For detailed requirements for specialty certification, go to http://www.aaees.org.

The areas of specialty certification for Board Certification are:

ENVIRONMENTAL ENGINEERING

AP Air Pollution Control
ES Environmental Sustainability
GE General Environmental Engineering
HW Hazardous Waste Management
IH Industrial Hygiene Engineering
RP Radiation Protection Engineering
SW Solid Waste Management
WW Water Supply/Wastewater Engineering

ENVIRONMENTAL SCIENTISTS

AR Air Resources
EB Environmental Biology
EC Environmental Chemistry
EM Environmental Microbiology
ET Environmental Toxicology
GW Groundwater and the Subsurface Environment
SM Solid Waste Management
SR Surface Water Resources
SS Sustainability Science

LEGEND

■ Board Certified Environmental Engineer
♦ Board Certified Environmental Engineering Member
● Board Certified Environmental Scientist

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Orange County Sanitation District
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Mr. Coss received his BS in Biology and MS in Public Health/Environmental Science from San Diego State University. He has more than 27 years experience.

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2015 KAPPE LECTURER

Jay Banner, Ph.D., BCES

Professor/ Director
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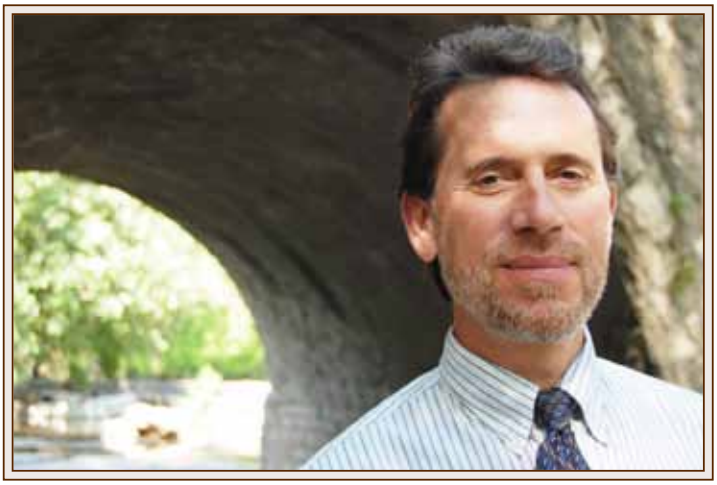

Jay Banner was born and raised in New York City and was interested in science from an early age. He attended the University of Pennsylvania as a Chemistry major and switched majors to Geology partway through to his Bachelor's degree. He pursued graduate studies in geology and geochemistry at the State University of New York at Stony Brook, where he received his MS and Ph.D.

After receiving his Ph.D., Dr. Banner was a postdoctoral fellow at the California Institute of Technology and Louisiana State University. He joined the faculty in the Department of Geological Sciences at the University of Texas in 1990 in Austin, Texas. He is presently the Fred M. Bullard Professor in the Jackson School of Geosciences and Director of the Environmental Science Institute at UT-Austin.

Dr. Banner is a geochemist who investigates the impacts of urbanization on aquifers and streams, and the reconstruction of past climate change, soil erosion and ocean chemistry. His field research sites include Texas, Guam, Western Australia, the midcontinent and Great Basin USA, Barbados, and the Bahamas. Banner co-developed and teaches UT-Austin's first Signature Course, *Sustaining a Planet*, and helped develop the university's newest interdisciplinary degree, a B.S. in Environmental Science.

Dr. Banner is a Fellow of the Geological Society of America, and was the first person certified as an Environmental Scientist by the American Academy of Environmental Engineers and Scientists. Among the recent honors he has received are the UT Board of Regents Outstanding Teaching Award (2013), the Texas Exes Teaching Award (2012), the Friar's Centennial Teaching Fellowship Award (2011), induction into UT-Austin's Academy of Distinguished Teachers (2011), and the Jackson School of Geosciences Outstanding Educator Award (2010).

EDUCATION

- BA, Geology, University of Pennsylvania, 1978
- MS, Earth Sciences, State University of New York, 1981
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PROFESSIONAL ASSOCIATIONS

- American Academy of Environmental Engineers and Scientists
- Geological Society of America

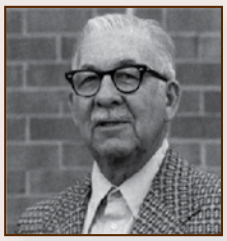
ABSTRACTS OF LECTURES OFFERED

PAST, PRESENT, AND FUTURE CLIMATE CHANGE IMPACTS ON WATER IN A SEMI-ARID REGION: SCIENCE AND POLICY

Texas comprises the eastern portion of the Southwest region, where the convergence of climatological and geopolitical forces has the potential to put extreme stress on water resources. Geologic records indicate that Texas experienced large changes in moisture sources and amounts on millennial time scales in the past, and over the last thousand years, tree-ring records indicate that there were significant periods of drought in Texas. These droughts were of longer duration than the 1950s "drought of record" that is commonly used in planning, and they occurred independently of human-induced global climate change. Although there has been a negligible net temperature increase in Texas over the past century, temperatures have increased more significantly over the past three decades, and the region experienced a record drought in 2011 that is ongoing. Under essentially all climate model projections, Texas is susceptible to significant climate change in the future. Most projections for the 21st century show that with increasing atmospheric greenhouse gas concentrations, there will be an increase in temperatures across Texas and a shift to a more arid average climate. Studies agree that Texas will likely become significantly warmer and drier, yet the magnitude, timing, and regional distribution of these changes are uncertain. With a projected doubling of the state's population by 2065, science, engineering, and economics are essential elements needed for the state's planning for the projected changes.

CAVE MINERAL DEPOSITS AS PROXIES FOR PAST CLIMATE CHANGE

Cave mineral deposits, or 'speleothems', provide a record of past changes in the composition and amounts of cave drip water that feed their growth. In turn, these changes in drip water may be used to infer past changes in climate above caves. Given that caves occur on all continents and that speleothems can grow continuously on time scales of decades to over 100,000 years, there is much interest in their application to reconstructing large and abrupt Pleistocene climate changes and Holocene changes that influenced early civilizations. With modern mass spectrometry, methods for dating and geochemical analysis of speleothem growth layers offer the prospect of high resolution reconstructions. These prospects are balanced by the complexity of non-climatic processes that can affect speleothem compositions, during transmission of water through the vadose zone and in the cave environment. These processes are addressed through examination of modern karst systems, including monitoring of physical and chemical hydrology, cave meteorology, speleothem growth on artificial substrates, and chemical and isotopic equilibrium. Studies from Texas and the tropics portray the information speleothems provide regarding past changes in temperature, rainfall sources and amounts, vadose flow paths, and seasonality.



The Kappe Lecture Series was inaugurated by the Academy in 1989 to share the knowledge of today's practitioners with tomorrow's environmental engineers and scientists. It is an annually recurring series of lectures presented on college campuses during the Fall academic term. This focus enables it to complement the lecture series sponsored by the Association of Environmental Engineering & Science Professors which brings renowned research engineers to universities in the Spring term.

From among those universities expressing interest, the Awards Committee typically selects up to ten host universities. If you are interested in hosting the Kappe Lecturer, go to http://www.aaees.org/kappelecturer.php

This program was inspired by a grant from the estate of Stanley E. Kappe, P.E., BCEE, who served as the Academy's Executive Director from 1971 to 1981. This grant funded an endowment which is used, in conjunction with fees from participating universities, to reimburse the lecturer's travel costs and pay incidental program expenses.

Stanley E. Kappe, P.E., BCEE, a successful environmental engineer, believed he owed a debt to the profession that rewarded him so well. During his life, he gave of himself to his university and to his profession through countless hours of volunteer activity.

He graduated from Pennsylvania State University in 1930 with a bachelor's degree in sanitary engineering. He served with the Pennsylvania State Health Department and the U.S. Army Corps of Engineers before joining the Chicago Pump Company as its Eastern Regional Manager in 1935. In 1945, he founded Kappe Associates, Inc., a water supply and wastewater equipment company headquartered in Rockville, Maryland, and continued as its Chief Executive Officer until his death in 1986.

His peers recognized his contributions to the profession by numerous awards, including the AWWA Fuller Award, the WPCF Arthur Sidney Bedell Award, the WPCAP Ted Moses and Ted Haseltine Awards, and the AAEE Gordon Maskew Fair Award. In 1985, Pennsylvania State University named him Outstanding Engineer Alumnus.

Stanley E. Kappe was an activist member and leader in several national and Chesapeake region professional societies.

ent languages. The operator training programs provided Dr. Kerri and his wife, Judy, the opportunity to travel all over the world. Most recently, he was the senior advisor on a project to train and license operators of water and wastewater plants for the country of Jordan; this project has been expanded throughout the Middle East.

As a professional consulting engineer he provided professional consulting services for cities, counties, special districts, states, federal government, universities, industries, and consulting engineering firms. Throughout his career, he received many awards, including the top honors by the Water Environment Federation and the American Water Works Association.

He had been a Board Certified Environmental Engineer in Sanitary Engineering since 1969.


Gary Lee Nickerson

Gary Lee Nickerson, P.E., BCEE, passed away September 2, 2014, at his home in Rockville, MD. He was born in Tulsa, OK, and grew up in Claremore where he attended Claremore High School and graduated in 1960. Gary was athletic, popular, very intelligent and participated in many high school activities.

He attended Oklahoma State University where he received his BS in Civil Engineering. During the Vietnam War, he was a Captain in the Army Corps of Engineers. He received his Master's Degree in Engineering Management from George Washington University in Washington, DC.

He remained in the DC area were he worked for a number of professional engineering companies doing design and construction projects of large water and wastewater systems.

Mr. Nickerson was a Life Member and had been a Board Certified Environmental Engineer in Water Supply and Wastewater since 1979.


Marvin Runyan

Marvin Runyan, P.E., BCEE, passed away Monday, April 28, 2014, at home in Portland, OR. He was born in Willamette, OR, where he attended Molalla Union High School. He received his BS in Civil Engineering from Oregon State University in 1941.

He was the retired President and CEO of Stevens, Thompson and Runyan (STR), a Portland consulting engineering firm responsible for designing hundreds of water and waste-water treatment plants to provide clean rivers and safe drinking water in the Pacific Northwest and Alaska. Projects included design and construction supervision of Bull Run Dam No. 2 and the familiar Oregon City Municipal Passenger Elevator.

During World War II, he served in the U.S. Army as an officer with the 110th Combat Engineer Battalion in the Aleutians and South Pacific - Adak, Kiska, Oahu, Eniwetok, Leyte and Okinawa. His civil engineering career began in 1940 on a survey crew working for Stevens & Koon on the Umatilla Ordnance Project near Hermiston. He returned to the firm after the war, advancing to associate (1952), Partner (1955), Executive Vice President (1961), President and CEO of Stevens, Thompson & Runyan, (1976) then engaged in civil engineering projects nationwide.

Mr. Runyan received numerous professional awards throughout his career and was an active member and officer of many professional organizations including American Society of Civil Engineers, Consulting Engineers Council USA, National Society of Professional Engineers, Engineers and Architects Council of Oregon, Water Pollution Control Federation, American Waterworks Association, American Academy of Environmental Engineers and American Public Works Association. He was honored to serve as national chairman of ASCE's New Code of Ethics Committee, a five-year effort in cooperation with other engineering societies to develop a standard code of ethics for the engineering profession adopted in 1976. He also highly valued his membership for over 40 years in the Portland Downtown Rotary Club.

Mr. Runyan was a Life Member and had been a Board Certified Environmental Engineer in Sanitary Engineering since 1957.

AAEES ACTIVITIES AND UPCOMING EVENTS

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April 23, 2015, AAEES Annual Awards Luncheon and TechnicalConference, National Press Club, Washington, DC. Please check the AAEES website at http://www.aaees.org for updates and registration information.

May 11, 2015, AAEES's 7th Annual Workshop (with TCHs, PDHs and CEUs); includes breakfast and/or lunch at NJWEA's 100th Annual Conference, Atlantic City, NJ. For registration or exhibitor information, visit www.njwea.org.

May 12, 2015, AAEES's 7th Annual Breakfast at NJWEA's 100th Annual Conference. For registration or exhibitor information, visit www.njwea.org.

June 7-10, 2015, AWWA ACE15 Conference in Anaheim, CA. Additional details forthcoming.

June 22-25, 2015, AWMA Conference in Raleigh, NC. Details to follow.

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