Meet Lynn Takala — Chemical Engineering's "New Face" for 2008

Lynn Takala recognized at an early age the connection between her engineering interests and her philanthropic callings. Today, only a few years out of college, this 25-year-old process engineer is not only carving a productive professional niche for herself, she is touching lives and reshaping the quality of life in her community.

Takala is one of the talented young engineers selected to be the "New Faces of Engineering for 2008." An annual recognition program tied to National Engineers Week (Feb. 17–23, 2008), New Faces celebrates the accomplishments of young engineers in the various disciplines, showcasing their engineering contributions as well as the impact they are having on society.

Lynn Takala with two assistants at a Habitat for Humanity site.

As the campaign's name suggests, the program is designed to put a public face on what is often called the "stealth profession" — inspiring students to pursue a life in engineering, and enhancing the public's appreciation of the profession's contributions and the people in it.

Engineering societies like AIChE help to identify the candidates, who receive national recognition during Engineers Week. This recognition includes a full page ad and photos in *USA Today*.

Takala was nominated by an AIChE member at Fluor in Greenville, SC — her employer and a sponsor of E-Week.

She began working at Fluor's Chemical Technology Center in 2004, shortly after earning her chemical engineering degree at Purdue Univ. She credits her father, a computer engineer, with planting the word "engineering" into her vocabulary. "Originally, I wanted to pave my own path and not follow in anyone's footsteps," says Takala. "But as I got older, I realized that the word 'engineering' had many different meanings. I didn't have to do what my father did, but I still could use my math, science and problem-solving skills."

She's been putting those skills to good use. Her work at Fluor has presented opportunities to develop chemical facilities around the globe — with projects including grassroots complexes, plant revamps, de-bottleneckings and expansions, and technical services. She's been handling virtually everything in the design phase, from concept development to detailed engineering. These days, she's working on material and energy recovery to support Fluor's Shanghai operations.

For all her desire to make excellent engineering contributions, her work in the local community represents an equally important motivation and application of her skills. There is hardly an area of charitable work that Takala hasn't made part of her stewardship. In her hours away from the office, she may be found building houses with Habitat for Humanity, visiting local nursing homes, volunteering at the Greenville Humane Society, helping out at Meals on Wheels, or coaching the Special Olympics. That's for starters.

While a student at Purdue, she became involved with tutoring elementary and middle school students, and it was there that she began to find the parallels between her engineering interests and philanthropy. Both have been a learning and building process.

She recalls a math tutoring session with a kindergarten student. "We were working on flash cards. Of course, the little girl was counting on her fingers. She wanted a challenge, so I flipped the card, '11 minus 5.' The girl pulled out her ten little fingers, looked at me, and said, 'Where's 11?' I guess it's the same way with engineering — sometimes you need to go at a problem with a different approach to get the answer."

Aside from using an engineer's aptitude for looking at problems from different angles, and her desire to make a difference in the world, Takala says that the biggest overlap between engineering and community service is working with people. "Leading a community service project takes the same organizational and people skills I encounter at work, if not more. And one of the biggest skills I've developed is to be an excellent listener — whether it is listening to an elderly man inform me of his ailments, a child going through growing pains, or my process lead explaining a technology."

She feels that she gets as much from her volunteer experiences as the people she helps, and says that juggling her active life comes down to balance. "As long as I am having fun and making a difference, both in my career and in the community, I'll continue to stay busy," she says.

Engineers and neighbors like Lynn Takala — whether they are "New Faces" or not — set a standard for the rest of us. And as for Lynn, her ambition to make a difference in the world seems to be taking care if itself — and in very practical ways, just as you might expect.

"Obviously, I would love to see peace on Earth, no one going hungry, and 100% literacy," she says. "But I'll settle for getting my project on schedule, tackling some head-scratching technical issues, building a Habitat for Humanity house, making a few people smile, and teaching a girl flash cards."

To read about all the New Faces of Engineering, visit www.eweek.org.

AIChE Members Elected to the National Academy of Engineering

Election to the National Academy of Engineering (NAE) is among the highest professional distinctions accorded an engineer. This year, the NAE has elected 65 new members and nine foreign associates, bringing the total U.S. membership to 2,282, and the number of foreign associates to 197. Newly elected AIChE members include:

Robert C. Armstrong — Professor of Chemical Engineering, Massachusetts Institute of Technology, for conducting outstanding research on non-Newtonian fluid mechanics, co-authoring landmark textbooks, and providing leadership in chemical engineering education.

Gary S. Calabrese — Former vice president and chief technology officer, Rohm and Haas Co., for the development of advanced electronic materials and processes for semiconductor device manufacture.

John L. Hudson — Professor of Chemical Engineering, Univ. of Virginia, Charlottesville, for advances in the understanding and engineering of complex dynamic chemical-reaction systems.

Enrique Iglesia — Chancellor Professor of Chemical Engineering, Univ. of California, Berkeley, for outstanding contributions to the understanding of catalyst structure-function relationships, the development of novel catalysts, and leadership in the field of catalysis.

David A. Tirrell — Professor and Chair, Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, for pioneering contributions to bioengineered materials and the synthesis of novel artificial proteins.

Yannis C. Yortsos — Dean, Viterbi School of Engineering, Univ. of Southern California, Los Angeles, for fundamental advances in fluid flow, transport and reactions in porous media applied to the recovery of subsurface resources.

Government Relations Committee Names DC Consultant, Focuses Efforts on Energy Metrics

Paul D. Stone, a chemical industry consultant involved in federal R&D programs, has joined AIChE as its Washington, DC-based consultant. The appointment was announced by Philip W. Winkler, chair of AIChE's Government Relations Committee and an executive with Air Products and Chemicals. Stone will focus on communicating AIChE's work on metrics for evaluating energy alternatives to federal agency and congressional staff.

The energy metrics effort is an important part of AIChE's larger energy initiative. Selection of the "right" solutions is an immense optimization problem with innumerable variables and subjective, as well as objective, criteria. The metrics work is geared to provide a sound basis for evaluating energy systems, guiding technology development, and informing public policy. While it aims for both national and global perspectives, it is also designed to be applicable to local business decisions.

Stone, who has 34 years of experience in chemical industry research and development, has had a consulting practice since retiring from the Dow Chemical Co. in 2002. At Dow, he was involved with federal R&D programs in essentially all government agencies for 21 years, with the last 16 years spent in Washington. He has worked with trade associations, professional organizations, and issue-based consortia. As a government relations consultant, he has supported clients in the materials, chemicals, biotech, energy and nanotechnology sectors.

Stone, along with Dale Keairns, AIChE's 2008 president, is now working with a team to advance the development of the energy metrics. Stone cautions that, currently, different parties compare technologies and come to different conclusions, using different baselines, data and problem boundaries.

Due to the size and complexity of the challenge, a staged approach is being used. A specific energy system is being considered, and this will then be used as a basis for other alternative energy systems. The initial focus is on biomass-to-energy systems. As an area that is much-debated, Stone adds, it will provide a constructive reference case for setting boundaries to be considered when evaluating other energy systems: material and energy balance flows, the selection of key assumptions (*e.g.,* today's performance versus potential capability), and constraints and trade-offs.

Current work is focused on selecting system boundaries; identifying a set of target metrics (*i.e.,* parameters, not a target value); gaining feedback from congressional and agency staff on the usefulness of the boundary and target metrics approach; and conducting other external and internal reviews to guide delivery of a widely usable product.

Given the interdisciplinary nature of the energy challenge, Winkler says that AIChE's Government Relations Committee will be engaging other engineering societies (*e.g.,* ASME, IEEE, ASCE, AIME) in the metrics effort. Because societal issues need to be considered, as well as technical ones, the committee is also discussing how to involve non-technical organizations in the process of energy system evaluation.

As a complement to the energy metrics project, Stone will work with chemical engineering students taking part in the summer 2008 Washington Internships in Science and Engineering (WISE) program, many of whom have expressed interest in focusing on energy-related topics. One of the 2007 WISE interns, Travis Walker of the South Dakota School of Mines and Technology, studied the issue of massive electricty storage; his project report is the basis for an article in this issue's special supplement on energy challenges (p. S23).

Dorland Named Delaware Valley Engineer of the Year

Dianne Dorland, dean of the College of Engineering at Rowan Univ., and a past president of AIChE, has been named the 2008 Engineer of the Year by the Delaware Valley Engineers Week Council.

The Council, comprising engineers in various fields from throughout the Delaware Valley region, recognized Dorland during Engineers Week activities in February. Honors included a proclamation luncheon, which featured citations from the president of the United States, the governors of New Jersey and Pennsylvania, and the mayor of Philadelphia.

Dorland was nominated for the award, in part, for her work with future engineers. "I'm proud to have an educator recognized as the Delaware Valley Engineer of the Year," said Dorland, who as part of her award will head the Delaware Valley Engineers Week Council for the next year. "I think it emphasizes that engineering education is our future."

Dorland became dean of Rowan Univ.'s College of Engineering, the newest engineering school in the Delaware Valley, in 2000. Under her leadership, Rowan has been widely recognized for its undergraduate programs.

She represents Rowan on the New Jersey Consortium for Engineering Education, a group working to promote science, math, engineering and technology education and to incorporate engineering curriculum standards in secondary education. Rowan recently became the New Jersey State Affiliate for Project Lead the Way, which encourages high school students to pursue engineering and technology careers.

Dorland earned BS and MS degrees in chemical engineering from the South Dakota School of Mines and Technology, and her PhD from West Virginia Univ. Before moving into higher education, she worked as a process engineer for Union Carbide, and later for the U.S. Dept. of Energy's Morgantown (WV) Energy and Technology Center. She then chaired the chemical engineering department at the Univ. of Minnesota, Duluth — which, like Rowan, was a new engineering program.

Dorland served on AIChE's Board of Directors, becoming the Institute's first female president in 2003. She also is active in the American Society for Engineering Education (ASEE) and was elected to the executive committee of the ASEE Engineering Deans Council in 2006.

Sikdar to Chair AIChE's Institute for Sustainability

The Institute for Sustainability (IfS), an AIChE technological community, has appointed Dr. Subhas K. Sikdar, associate director for science for the National Risk Management Research Laboratory of the U.S. Environmental Protection Agency (EPA), as its new chair. Prior to this appointment, Sikdar held a variety of AIChE leadership roles — including membership in the Societal Impact Operating Council.

Created by AIChE in 2004, the IfS serves the needs of professionals, industries and governmental bodies that contribute to the advancement of sustainability and sustainable development. IfS approaches sustainability from the perspectives of engineering and scientific disciplines, with the objective of promoting the societal, economic and environmental benefits of sustainable and green engineering.

In accepting the position as chair, Sikdar discussed the importance of the IfS. "The Institute is critical to furthering the adoption of sustainability concepts into engineering education, research and development, measurement tools and frameworks to guide the design of more sustainable products and processes," he said. "I am thrilled to be a part of such an impactful organization, and look forward to achieving many milestones this year."

Before joining the EPA in 1990, Sikdar was a manager at the National Institute of Standards and Technology (NIST) and General Electric's Corporate Research & Development Center. He has published more than 70 technical papers in respected journals, has 23 U.S. patents, and has edited 13 books. He is the founder and the co-editor-in-chief of the international journal *Clean Technologies and Environmental Policy*, published quarterly by Springer Verlag of Germany.

Sikdar has received numerous honors, including three EPA bronze medals, an R&D 100 award, the Distinguished Engineering Alumnus Awards from the Univ. of Calcutta and the Univ. of Arizona, and AIChE's Lawrence K. Cecil Award for Environmental Chemical Engineering. He is a Fellow of AIChE.

For more information about the Institute for Sustainability, visit: www.aiche.org/IFS/.

In Memoriam — Theodore A. Ventrone, Creator of AIChE's *Process Safety Progress*

Ted Ventrone of Watchung, NJ, a chemical process safety pioneer and a member of the AIChE family, died Feb. 5, 2008, at age 92.

Ventrone's legacy is well-represented in the pages of AIChE's *Process Safety Progress*, the quarterly magazine that he founded and edited for 22 years. His impact on the Institute, its members involved in process safety, and the industrial and regulatory community has been enormous. He brought to his editing and AIChE programming activities decades of experience in loss prevention, personnel safety and industrial security.

In the early 1980s, after AIChE suspended publication of its complete Loss Prevention Symposium proceedings for economic reasons, AIChE and the then-newly-established Safety and Health Div. recognized that many important and valuable papers from the Loss Prevention Symposium, the Ammonia Safety Symposium, and other venues were not being made readily available to the chemical engineering community. This led to the start of a new journal, *Plant/Operations Progress*, which published many of these papers.

Recently retired from American Cyanamid, Ventrone became the first editor of this new journal. He guided it through its initial years, and was instrumental in making it a primary resource for process safety professionals throughout the world. In 1993, the name of the journal was changed to *Process Safety Progress* to better reflect its primary focus on safety issues. Ventrone remained editor of the journal for 22 years — spanning 88 issues, and more than 950 papers by more than 1,200 authors and co-authors — before retiring as editor in December 2003.

Ventrone's engineering career began in his native Rhode Island, where he earned his BS in chemical engineering at Rhode Island State College (now Univ. of Rhode Island). He began work in 1937 as an industrial plant field inspector for Factory Insurance Association (FIA) — later known as Industrial Risk Insurers (now GE Global Insurers) in Hartford, CT. He entered the U.S. Army early in World War II, serving as platoon and company commander in European Theater Engineer Combat Battalions. He earned a Bronze Star, and at the end of the war was discharged as a major.

Ventrone returned to civilian life and FIA — which had begun to recognize the need for improved understanding of risk in the rapidly expanding chemical industry. He worked in FIA's Loss Prevention Engineering sector until 1953, when he joined American Cyanamid Co.'s Calco Div. in Bound Brook, NJ. There, he managed loss prevention, personnel safety and industrial security, including safety reviews for operations at all scales. The Calco Div. had many plants throughout the U.S. that produced bulk pharmaceuticals, explosives, dyes and pigments, and other industrial chemicals. He worked with these facilities and remained with American Cyanamid until his retirement in 1980.

One of Ventrone's major contributions to process safety in the 1950s was his recognition of the poor state of emergency pressure-relief systems on many vessels at that time, particularly reactors. He developed recommendations for relief devices to provide overpressure protection, particularly for runaway reactions. He was pleased to see AIChE establish the Design Institute for Emergency Relief Systems (DIERS) in 1976 to address this issue by developing the theory and technology to safely design emergency relief systems for reactors, and, in particular, resolve issues of multi-phase flow in relief systems.

Ventrone's involvement with AIChE programming began in 1967, with the First Loss Prevention Symposium. Two of his former FIA co-workers, William Doyle and Russell Miller (who would later help establish AIChE's Safety and Health Div.), co-chaired the first Symposium, and Ventrone was a member of the organizing committee (now AIChE's Area 11a Programming Committee) from the start. He remained a member of the 11a Programming Committee through his life — chairing the committee and serving as Chair of the 7th Loss Prevention Symposium in 1972.

An AIChE Fellow, Ventrone received the 1992 Walton/Miller Award from the Safety and Health Div. for his contributions to chemical process safety. In 2003, the Division's Executive Committee unanimously voted to recognize his outstanding work and many years of service by establishing the Ted Ventrone Safety and Health Division Design Award. This annual prize is given to the chemical engineering undergraduate whose design best incorporates inherent safety into the solution of AIChE's National Student Design Competition.

Ventrone was predeceased by his first wife, Genevieve Scanlon Ventrone, in 2004. He is survived by his second wife, Frances Jean (née Lukas), two daughters, a son, two sisters, and several grandchildren and great-grandchildren.

Based on Hendershot, D. C., "T. A. Ventrone: An Appreciation of a Process Safety Pioneer," *Process Safety Progress*, 22 (4), pp. 4–5 (Dec. 2003).

Regional Student Conferences Seek Experienced ChEs

Some of AIChE's most active groups are found in university student chapters. An annual program highlight for many student members is the series of nine spring regional conferences held at ChE schools across the nation.

The conferences, hosted by different student chapters each year, provide ChE students with networking and educational opportunities, competitions and fun, as well as an emersion in AIChE culture. Approximately 1,400 undergraduates from 100 schools are expected to participate in the 2008 regionals.

Regional conferences begin in March (see the schedule at right), and continue through April. Students at the host schools rely on the volunteer support of member professionals and AIChE local sections in each region; there is almost always room for additional career panel participants, sponsor company representatives, mentors, and competition judges.

Among the events in need of volunteer judges are the regional student paper competitions (which culminate in a final competition at the November Annual Meeting and National Student Conference), as well as regional heats in the popular Chem-E-Car Competition.

Car Competitions always generate excitement, but they also present an important volunteer opportunity for chemical engineering professionals. AIChE requires that all Car Competition participants adhere to strict safety protocols. Eligibility to compete is, in part, determined by the participants' passing an onsite vehicle safety inspection, as well as the filing of Job Safety Analysis forms with a regional safety review committee.

These safety measures are coordinated by volunteers. Safety teams are recruited as needed; AIChE relies on qualified engineers to come forward when the call goes out.

Several of the safety teams needed for Spring 2008 regional student conferences are still being assembled. Safety professionals and chemical engineers who are interested in joining a safety inspection team can receive more information at gorde@aiche.org.

2008 Regional Student Conference Schedule

Readers can support AIChE's youngest members by volunteering at a regional conference. Visit www.aiche.org/students/ and follow the "conferences" link for contact information.

Southwest: Mar. 7–9, Texas A&M Univ., Kingsville
Rocky Mountain: Mar. 7–9. New Mexico Tech Univ. (Socorro, NM)
North Central: Mar. 28–29, Univ. of Akron
Mid-America: Mar. 28–29, Univ. of Nebraska, Lincoln
Northeast: Apr. 4–5, MIT (Cambridge, MA)
Southern: Apr. 4–6, Auburn Univ. (Auburn, AL)
Mid-Atlantic: Apr. 11–13, Manhattan College (Riverdale, NY)
Western: Apr. 12, Univ. of California, Los Angeles
Pacific Northwest: Apr. 25–27, Washington State Univ. (Pullman, WA)

AIChE Conference Calendar

For information and registration details, visit www.aiche.org/conferences or call Customer Service at 1-800-242-4363 or 1-203-702-7660 (outside the U.S.)

2008 AIChE & ACS Spring National Meetings and Exhibitions
April 6–10, 2008 • Ernest N. Morial Convention Center • New Orleans, LA

CCPS 1st Latin American Process Safety Conference & Expo
May 27–29, 2008 • Sheraton Hotel & Convention Center • Buenos Aires, Argentina • www.ccps2008.com.ar/

2008 Process Development Symposium: Chemical Product Engineering — The Third Paradigm
June 22–25, 2008 • Jiminy Peak Resort • The Berkshires, Hancock, MA

SBE's 4th International Conference on Bioengineering and Nanotechnology
July 22–24, 2008 • University College, Dublin & Stillorgan Park Hotel • Dublin, Ireland

2008 Ammonia Conference
September 7–11, 2008 • Hyatt Regency • San Antonio, TX

2008 AIChE Annual Meeting
November 16–21, 2008 • Philadelphia Marriott & Pennsylvania Convention Center • Philadelphia, PA

2009 Spring National Meeting
April 26-30, 2009 • Tampa Convention Center, Tampa,. FL

OBITUARIES

Gary E. Congram, 66, Katy, TX

Henry A. Holcomb, 92, Amarillo, TX

Charles E. Huckaba*, 85, New York, NY

William E. Huffman, 64, Auburn, AL

Theodore A. Ventrone*, 92, Watchung, NJ

N.A. Wikdahl, 90, Djursholm, Sweden

Paul T. Yamada, 65, San Francisco, CA

*Fellow