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The Power List

May 2010 » Exclusive

People advancing the civil engineering profession

By Shanon Fauerbach, P.E.

By Theresa M. Casey, FSMPS, CPSM

In the civil engineering industry, we clearly realize that the work of civil engineers touches the lives of virtually everyone on earth just about every day. And, while the industry struggles with issues such as an aging infrastructure, sustainability, limited water resources, energy conservation, and dwindling numbers of civil engineering graduates, it is the relentless efforts of individuals who are leading the charge in developing solutions to some of the world's toughest problems. That's why *CE News* is honoring 15 of the most prominent people in civil engineering today.

The professionals that make up the Power List come from various walks of life — military, education, consulting, nonprofits, publishing, and public service — and they all have made significant impacts on the industry in their own ways, some quietly and some quite publicly.

In selecting these special individuals, *CE News'* editors wanted to go beyond the obvious heavy hitters in the profession, such as Patrick Natale P.E., CAE, executive director of the American Society of Civil Engineering; or David Raymond, president and CEO of the American Council of Engineering Companies. We wanted to dig deeper and select individuals who are leading or are a major part of a broad-based movement to elevate the profession, bring issues to the forefront of the public's mind, instill excitement in engineering as a career, or work to improve technology, methodologies, and practices.

The list is based on insights, suggestions, and nominations from our team of editors, industry professionals, advocates, and readers. The Power List is not a ranking, so individuals are listed alphabetically; and the list is not considered to be exhaustive. In fact, *CE News* editors plan to make this an annual feature, so tell us who you think should be considered for this list at

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<http://tinyurl.com/cenpowerlist>. Click on the names of The Power List individuals for more more information about each of them.



Earl Blumenauer,
U.S. Representative (D-Ore.)

Blumenauer introduced H.R. 3202, the Final Water Protection and Reinvestment Act, to provide a deficit-neutral, consistent, and protected source of revenue to help states replace, repair, and rehabilitate critical drinking water and wastewater treatment facilities. These revenue sources are expected to raise at least \$10 billion a year, which would significantly impact the future of water resource engineers in both the private and public sector. His 10-year tenure as the Portland Commissioner of Public Works demonstrated his leadership on innovative accomplishments in transportation, planning, environmental, and public participation programs and has helped Portland, Ore., earn an international reputation as one of America's most livable cities. Now a member of the Ways and Means Committee and the Budget Committee, Blumenauer also serves as vice chair of the Select Committee on Energy Independence and Global Warming.



Wayne Clough, Ph.D., P.E.,
secretary, Smithsonian Institution

Clough, a civil engineer with specialty in geotechnical and earthquake engineering, now leads the world's largest museum and research complex with 19 museums, nine research centers, the National Zoo, and research activities in more than 90 countries. Clough's priority is to ensure that the institution's collection is accessible to everyone, and efforts are underway to digitize much of the Smithsonian's 137 million objects in the collection. Mainstreaming access to this remarkable collection and its research promotes the accomplishments of our nation's science and engineering communities to the general public and can ignite young peoples' interest in engineering careers. Previously, Clough served as president of the Georgia Institute of Technology for 14 years, where he completed a building program of more than \$1 billion that incorporated sustainable design. *U.S. News and World Report* ranked Georgia Tech among the top 10 public universities during Clough's tenure.



Jack Dangermond,
president, ESRI

A landscape architect by training, Dangermond has had a strong impact on the development of geographic information systems (GIS) technology, methodologies, and the GIS software market, a field of significant and growing influence on civil engineering. However, it his recent work to propel the practice of GeoDesign that earns him a slot on The Power List. Dangermond describes GeoDesign as bringing "geographic analysis into the design process, where initial design sketches are instantly vetted for suitability against a myriad of database layers describing a variety of physical and social factors for the spatial extent of the project. This on-the-fly suitability analysis provides a framework for design, giving land-use planners, engineers, transportation planners, and others involved with design, the tools to leverage geographic information within their design workflows. Fully leveraging geography during the design process results in designs that emulate the best features and functions of natural systems, benefiting both humans and nature through a more peaceful and synergistic coexistence."



Peter Gertler, AICP,
chairman of high-speed rail services, HNTB Corp.

Gertler has made a significant effort to promote high-speed rail in America through extensive research, article writing, and participation in interviews on radio and television news programs, such as Fox News, the *Boston Globe*, *Forbes*, and others. With interest in high-speed rail spurred by the 2009 stimulus package, Gertler's message is that a high-speed rail program is the lynchpin missing from our national transportation system. With such a program in place, America can protect its status as a mobility super power, plus realize benefits that will help the nation in a variety of ways such as creating thousands of jobs, promoting a healthier environment by reducing greenhouse gas emissions, reducing air pollution, saving energy, and achieving energy security. Gertler, with 22 years of experience in public transportation, currently serves on the American Public Transportation Association executive board and the Intercity Rail Committee, as well as the American Road and Transportation Builders Association High-Speed Rail Development Council.

General Henry Hatch (ret.),
chief of engineers and commander, U.S. Army Corps of Engineers

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The Power List

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With Hatch's guidance, the Corps implemented a partnering concept and promoted U.S. efforts in capacity building to enhance security, stability, and sustainability, what Hatch refers to as "the keys to enduring peace." He now dedicates his time to the National Research Council, the Society of American Military Engineers, and the Engineering and Technology Exploring Program of the Boy Scouts of America.

Hatch chairs the Natural Sciences and Engineering Committee of the U.S. National Commission for the United Nations Educational, Scientific and Cultural Organization (UNESCO), emphasizing building engineering capacity in Iraq and Afghanistan and on strengthening UNESCO's engineering programs. Hatch is a former senior officer with two of the country's largest engineering and environmental firms and former chief operations officer of the American Society of Civil Engineers.



Paula Hochstetler,
president, Airport Consultants Council (ACC)

Hochstetler has helped to provide for a higher and better use of land and resources within the aviation market. During her 15 years as president of ACC, she has presented testimony before Congress; co-chaired committees/sub-committees that have developed guidelines and standards relating to airport security through work with RTCA, Inc., a private, not-for-profit corporation that develops consensus-based

recommendations for the Federal Aviation Administration and the Transportation Security Administration; and more. Prior to joining ACC, Hochstetler spent 14 years as a consultant planning airports worldwide.



Thomas A. Lenox, Ph.D. ,
senior managing director, American Society of Civil Engineers (ASCE)

Lenox joined ASCE after a 28-year military career, including 15 years on the engineering faculty at West Point. At ASCE, Lenox initiated Project ExCEED (Excellence in Civil Engineering Education), a multifaceted educational initiative.

More than 500 engineering faculty members from 200 U.S. and international universities have graduated from the program since its inception, and they, in turn, have positively changed the learning environment for thousands of civil engineering students. For the last decade, Lenox has also served as staff leader for the ASCE Raise the Bar initiative, an ongoing effort to affect the way that engineers learn about the profession.



Cathy Leslie, P.E.,
executive director, Engineers Without Borders-USA (EWB-USA)

"Working with EWB-USA not only allows me to encourage both young and old in this endeavor," said Leslie, "but also allows me to see, first hand, the impact that we can collectively make in the world." Today she uses her management skills to ensure that the organization fulfills its mission to help create a more stable and prosperous world by addressing people's basic human needs, such as clean water,

power, sanitation, and education. Leslie held the executive director position on a volunteer basis for six years while working as civil engineering director for Tetra Tech, Inc., before taking on the full-time role. Leslie began her work in developing countries as a Peace Corps Volunteer.



David Macaulay,
writer and Public Broadcasting Service (PBS) series host

Macaulay has helped to broaden the public's interest in engineering, inspiring taxpayer support of infrastructure funding and young people's interest in engineering as their chosen profession. Macaulay is probably best known for his 1988 book, "The Way Things Work," an exhaustively researched book about how

many things function. His book, "Black and White," was a 1991 Caldecott Medal winner. Macaulay's more recent work, "Building Big," was a five-part PBS series (<http://www.pbs.org/wgbh/buildingbig/about.html>) and companion book, which explored the history behind some of the world's greatest feats of engineering and the story behind the engineers, architects, and builders who designed and constructed them.



Henry Petrosky, Ph.D. ,
Aleksandar S. Vesic Professor, Duke University

Petrosky is noted for having written more than a dozen books that give detailed accounts and historical overviews related to specific civil engineering projects and the accomplishments of individual engineers. His first book was "To Engineer Is Human: The Role of Failure in Successful Design," and his most recent book is "The Essential Engineer: Why Science Alone Will Not Solve Our Global Problems."

Petroski has written many articles for acclaimed magazines and newspapers, and he writes regular columns for both *American Scientist* and *ASCE Prism*. He is a frequent lecturer throughout the United States and abroad, sharing insights into how engineering has helped and can continue to sustain society.

Jeffrey Russell, Ph.D., P.E. ,
Pieper Family Servant Leadership Professor and chairman of the civil and environmental engineering department, University of Wisconsin-Madison (UW)

Russell has been a key leader in construction engineering and management

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Location: Pittsburgh

[Laser Scanning User Meeting](#)

Date: June 8, 2010 - June 9, 2010

Location: Prague Czech Republic

[Super Pile 2010](#)

Date: June 10, 2010 - June 11, 2010

Location: New Orleans

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education and research and in civil engineering education reform. He is the co-founder of the construction engineering and management program at UW and has published more than 200 papers in the areas of contractor failure and prequalification, constructability, maintainability, and automation. He is the chair of the ASCE Committee on Academic Prerequisites for Professional Practice, which is charged to enhance the preparation of future civil engineers. Central to this effort has been the concept of the Body of Knowledge (BOK) in civil engineering, which seeks to broaden skills, knowledge, and professional attitudes that research shows are critical for 21st-century engineering graduates. As a result, areas of study such as leadership, public policy, project management, and business have been integrated into curricula and accreditation.



Jay K. Saxeña, Ph.D., P.E.,
manager, stormwater division, City of Cape Coral, Fla.

Saxeña is considered a consummate driven professional who has committed endless energy throughout his career into planning, designing, and implementing infrastructure improvements. "Dr. Saxeña has managed to create a visionary program for the city's future stormwater control needs, while at the same time keeping citizens' current needs and pollution controls a priority," said an associate of his. "He has managed to do this despite an ever-decreasing budget year after year, while at the same time instilling pride and ownership among his employees."



Harry Ward, P.E.,
president, Harken-Reidar

Ward is an advocate for the use of CAD and 3D technology to improve quality control in design. He is well known throughout the industry as a technology visionary, originator, creator, instigator, researcher, writer, and speaker. His goals include raising the bar in the industry by achieving higher levels of quality through the use of ever-changing technology. He has been an adjunct professor at George

Mason University since 1997, where he teaches engineering design, computations, and CADD; he was named the 2010 Outstanding Adjunct Professor of the Year.



Richard Weingardt, P.E.,
principal, Richard Weingardt Consultants

Weingardt teaches and mentors future leaders and students through his prolific and engaging writing and speaking on engineers and engineering. His books and articles, lectures, and leadership roles in prominent professional engineering organizations all illustrate that Weingardt is the same type of well-rounded and influential engineer about which he writes. He has authored nine books on engineering achievements and legendary engineers, has written more than 900 articles and opinion pieces in trade journals, served on three governor-appointed commissions, and is former national president of the American Council of Engineering Companies. He's an oil painter, historian, writer, and designer of important and complex structures.



Nicholas Zembillas,
senior vice president, Cardno TBE Utilities Division

Zembillas was instrumental in introducing subsurface utility engineering (SUE) to federal and state transportation agencies throughout the United States, Canada, China, the United Kingdom, and Australia. SUE is a relatively new process that incorporates civil engineering, surface geophysics, surveying and mapping, non-destructive excavation, and asset management technologies to locate, identify, and classify subsurface utilities. SUE has proven to help manage risks, avoid costly conflicts, and reduce project delays. Zembillas is an original member of the ASCE Standards Committee for Collection and Depiction Guidelines for Existing Utility Data (ASCE 38-02) on Design and Construction Documents. He participated on the International Right-of-Way and Utilities Scan Delegation and the United Kingdom's research study called Mapping the Underworld.

Co-author **Theresa M. Casey, FSMPS, CPSM**, is founding principal of On Target Marketing & Communications, LLC, in Columbia, Conn. She can be reached at tcasey@on-target.biz.

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