

PROCLAMATION: 2013 National Engineers Week – San Diego

City of San Diego – Mayor Bob Filner, Councilwoman Sheri Lightner

**NEW 2013 SAN DIEGO AWARDS
San Diego County Engineering Council (SDCEC)**

The SDCEC NEW 2013 Awards are:

OUTSTANDING ENGINEER: The award recognizes an engineer from the San Diego area who has made outstanding contributions to the field of engineering which serve the engineering profession and the general public. (SDCEC)

Theresa Brown

OUTSTANDING ENGINEERING EDUCATOR AWARD: The award recognizes an engineering educator from the San Diego area who has made outstanding contributions to the field of engineering education that serves the engineering profession and the general public. (SDCEC)

Rick Olson, Ph.D.

OUTSTANDING ENGINEERING PROJECT AWARD: The award recognizes an outstanding engineering project in the SD area that benefits the public. (SDCEC)

Sunrise Power Link

**Michael Niggli
San Diego Gas and Electric Company**

DR. THOMAS AVOLT KANNEMAN OUTSTANDING ENGINEERING SERVICE AWARD: The award recognizes individuals who have given outstanding professional and/or public service in or for engineering that directly enhances the engineering profession. (SDCEC)

Xun Luo, Ph.D.

OUTSTANDING CIVIL ENGINEERING PROJECT AWARD:
Co-Sponsored by The American Society of Civil Engineers, the award recognizes an outstanding civil engineering project that benefits the public. (SDCEC/ASCE)

Harbor Drive Pedestrian Bridge

**Joe Tognoli
T.Y. Lin International**

OUTSTANDING NSBE PROJECT AWARD:

Co-Sponsored by The National Society of Black Engineers, the award recognizes an outstanding project that benefits the public. (SDCEC/NSBE)

Pre-College Initiative Program in support of the Summer Engineering Experience For Kids (SEEK)

Brian Ware

OUTSTANDING SHPE PROJECT AWARD:

Co-Sponsored by The Society of Hispanic Professional Engineers, the award recognizes an outstanding project that benefits the public. (SDCEC/SHPE)

Leadership Development and Outreach Programs

Luke Anthony Burgan

NEW 2013 San Diego Award Recipients

Outstanding Engineer (SDCEC)

Theresa Brown
SOLAR Turbines

Theresa Brown led a cross-functional team to design, develop and complete a heavily instrumented prototype test for SOLAR's newest gas turbine, the Titan 250. This team was focused on completing a thermal mapping of the turbine section; the complexity of which required the use of metal and air thermocouples, pressure measurements and IMTK crystals. This project incorporated extensive planning and integration of both internal and external engineering resources. Theresa leads the design team to continually improve the design and analysis of turbine components by developing new sections and improving existing sections of the Design Manual which captures lessons learned and the latest techniques for analyzing and designing SOLAR's most complex components and systems. Theresa increased Solar's product design experience using new technologies concepts and new materials by working with cross-functional teams to complete field evaluation trials for improved thermal barrier coatings and the application of new materials in components in the engine. The San Diego engineering community recognizes Theresa Brown's outstanding contributions to engineering projects in San Diego County.

Outstanding Engineering Educator (SDCEC)

Rick Olson, Ph.D.
University of San Diego (USD)

Dr. Rick Olson has had a profound effect on the profession of industrial engineering in San Diego. He founded USD's industrial engineering program which became the first and only accredited industrial engineering program in the region. Professor Olson became well known, within IIE, the San Diego Science Alliance, Tau Beta Pi, the American Society for Engineering Education and several other organizations dedicated to engineering education and outreach. He is well known for his dedication and breadth of activities that serve both students and the engineering profession. His educational service to the profession has extended beyond his own academic program to a host of award winning service and leadership activities that serve middle school and high school students across the state, including Botball and First Lego League, and numerous successful projects with the San Diego Science Alliance. He has won a major IIE award for his work as the Outstanding Faculty Advisor to the USD chapter of IIE and was recognized by the San Diego Science Alliance and FIRST Lego League for his educational outreach contributions in the field of robotics. Yet another major area of impact is Dr. Olson's work to connect veterans to education in engineering. He, along with Dr. Kathleen Kramer, and Dr. Susan Lord have worked together successfully for three years on a project that has succeeded in transforming the demographics of our transfer students to include significant numbers of veterans and Dr. Olson has led multiple workshops involving more than 20 different universities to help them achieve best practices in engineering education for this important group. This work was just given national coverage with this recent LiveScience article. <http://www.livescience.com/26209-veteransrecruited-engineering-program-grows-nsf-bts.html>. The San Diego engineering community recognizes Dr. Rick Olson's outstanding contributions to engineering education and research in San Diego County.

Outstanding Engineering Project (SDCEC)

Sunrise Power Link San Diego Gas and Electric Company Accepted by Michael Niggli

On June 18, 2012, San Diego Gas & Electric (SDG&E) announced that it had completed and put into service the Sunrise Powerlink, a 500,000-volt transmission line linking San Diego to the Imperial Valley, one of the most renewable-rich regions in California. The completion of the nearly \$1.9 billion project culminates a rigorous, 5-year-long environmental review and permitting process and 18 months of construction that encompassed both overhead and underground technology as well as different climates and rough, remote terrain. The transmission line will eventually carry 1,000 megawatts of power, or enough energy to serve 650,000 homes. The Sunrise Powerlink consists of more than 110 miles of overhead 500kV and 230kV transmission towers and conductor, 6.2 miles of underground 230kV cable and a 40-acre, 500kV/230kV transmission substation. More than 4.7 million work hours were required to complete the project – the equivalent of 2,260 people working 40 hours per week for a year. For environmental reasons, nearly 75 percent of the construction was performed by helicopters and the project logged more than 30,000 flight hours. In the near future, the Sunrise Powerlink will deliver a significant amount of wind and solar power to San Diego. Over the past three years, SDG&E has signed eight renewable agreements for more than 1,000 MW of solar and wind power from projects in Imperial County; that green energy will be transmitted across the Sunrise Powerlink. By 2020, 33 percent of SDG&E's power will be derived from renewable resources. In 2011, more than 20 percent of SDG&E's electricity was obtained from renewable energy. The Sunrise Powerlink now provides the pathway for local renewable energy projects, enables us to develop Imperial County's abundant renewable energy resources while also preserving our natural resources and native habitat. Sunrise Powerlink construction highlights: 13,200 tons of steel = total weight of all 438 transmission structures (by comparison, the Coronado Bay Bridge contains 20,000 tons of steel.); 1,135 miles of overhead high-voltage wire = from end to end would reach from San Diego to San Antonio; 438 tower foundations = concrete used would cover an entire football field to a depth of 12 feet; and 1.3 million cubic yards of earth was moved during construction = enough to fill the Empire State Building. The San Diego engineering community recognizes the Sunrise Power Link as an exceptionally outstanding technical achievement.

Dr. Thomas Avolt Kanneman Outstanding Service Award (SDCEC)

Xun Luo, Ph.D. IEEE

Dr. Xun Luo served as a dedicated chairman of the IEEE San Diego section for 2 years, guiding the 4000+ member San Diego organization of electrical and electronic engineers and the 40 member executive committee. Additionally, Dr. Luo successfully led the San Diego chapter of the IEEE Computer society and contributed to the success of the Southwest Area and Region 6 organizational structures of the IEEE. These volunteer efforts called for significant time and energy contributions above and beyond Dr. Luo's demanding position at Qualcomm. As a direct result of Dr. Luo's leadership, spirit, and dedication, IEEE activities in San Diego are vibrant and contribute significantly to the professional development of engineers and the technical success that permeates the fabric of the San Diego region. The San Diego engineering community recognizes Dr. Xun Luo's years of selfless outstanding service to others.

**NEW 2013 SAN DIEGO BANQUET PROGRAM
KEYNOTE ADDRESS**

Celebrate Awesome

KEYNOTE SPEAKERS

Celebrate Awesome is the Theme for Engineering Week 2013. We are elated to present three distinguished speakers- All Engineers, All Women, who shall expound on their ventures in Celebrating Awesome.

Dr. Ebonee Williams, Lt. Julia Foerster and Ms. Theresa Medina shall share their experiences as they share the keynote spotlight. From Dr. Williams advanced polymer composites research, Lt. Foerster's F/A-18 Flight experiences and her Deployments for Operation Enduring Freedom to Theresa Medina's Design Engineering for SOLAR, General Dynamics and Rohr, all these women have made strides for future generations of Engineers and Scientists. We are sitting on the shoulders of giants.

Beyond their Professional lives, all three have "Changed the Conversation" by igniting a spark of invention and innovation, creativity and imagination to open young minds to the possibilities of becoming engineers. Through their life model, they exemplify how Engineers can make a difference in their communities and the world by solving problems utilizing Science and Technology.

Dr. Ebonée Williams

Dr. Ebonée Williams has a background in advanced polymer composites research with emphasis on vacuum assisted resin transfer molding and polynanomeric composite application in aerospace. Dr. Williams has hosted polymer composite training sessions for FAA inspectors, Boeing engineers and college students; she has taught both undergraduates and graduates in the discipline, as well.

Recently her focus has been on applied education and systemic approaches to educational programs. In her most recent tenure as the Director of a mandatory Service Learning program at UCSD, she was able to develop infrastructure that allowed the program to grow from less than fifty students to a capacity to sustain more than 900 students per year.

Dr. Williams still enjoys teaching courses on the principles of engineering, with emphasis on effective team processes. She has served as the faculty advisor to the Teams in Engineering Service Habitat for Humanity Team, which brought green-building to low income home development. Dr. Williams gives seminars and lectures to graduate students on surviving and understanding graduate school. Her commitment to interdisciplinary and applied education is evident throughout her career. As a teacher, leader, and change agent she is actively engaged in both local and national communities in hopes of creating new opportunities.

Dr. Williams earned her B.S. and Ph.D. in Chemical Engineering from Brown University and the University of Washington, respectively. She also has a Masters in Industrial Business Management from the Lille Business School in France. Dr. Williams takes pride in her ability to provide efficient solutions to complex problems ranging from chemical processes to student development and education. She enjoys outdoor activities and traveling the world in her down time.

Lt. Julia Foerster

Lt. Julia Foerster was born and raised in Los Angeles, CA, LT Julia Foerster grew up in a strict, Catholic family with traditional values. Lieutenant Foerster is a graduate of California State Polytechnic University, Pomona, California where she earned a Bachelor of Science in Aerospace Engineering, and minors in Mathematics and Spanish. She entered the naval service on October 2004 and received her commission through Officer Candidate School (OCS) in Jan 2005. She attended

primary, intermediate and advanced flight training at NAS Pensacola, Florida. She received her wings of gold and was designated Naval Flight Officer on 22 September 2006.

Her next assignment took her to the West Coast F/A-18E/F Fleet Replacement Squadron (FRS), VFA-122 at NAS Lemoore, California in November 2006. After completing the FRS in August 2007, Lieutenant Foerster reported to her fleet squadron, VFA-22. In 2008 and 2009 Lieutenant Foerster made two carrier deployments aboard the USS Ronald Regan, each in support of OPERATION ENDURING FREEDOM. In December 2011, Lieutenant Foerster transferred to Fleet Readiness Center South West (FRCSW) North Island for her tour as Aviation Safety Officer.

Lieutenant Foerster has accumulated over 1,200 total flight hours and 900 F-18A/B//D//F flight hours. Lieutenant Foerster's awards include an Air Medal, one Navy Achievement Medal, and various campaign and unit awards. She is married happily to Captain Ray Foerster, USMC.

Theresa Medina

Theresa Medina is currently a consulting Mechanical Design Engineer at Solar Turbines. Her extensive background in turbomachinery design, manufacturing, development test and ISO processes is helping to support many of the programs she helped develop while employed there.

Theresa Medina was born and raised in East Los Angeles. She was the first female in auto shop in the L.A. school system. She went on to earn her B.S. in Mechanical Engineering at Northrop University, where she co-oped at Rockwell International. Theresa then went to work on the F-18 with Northrop Corporation. She moved to San Diego to work at General Dynamics and Rohr. Ms. Medina then headed to Solar Turbines where she held various positions in Design Engineering

and Customer Services. She retired from Solar Turbines in 2009 and went back as a consultant in 2010.

In addition to engineering she worked with UCSD on the Industrial Advisory Board as both a board member and student mentor, she mentored K-12, was President of SHPE, and active in ASME, SME and SWE over the years. As a Brown Eagle, she helps the current SHPE board when requested.

Theresa Medina continues to strive for excellence in her consulting work, work with students and the community. She currently resides in San Diego with her teenage son, Ruben. She enjoys dancing, classic cars and archery.

Outstanding Civil Engineering Project (SDCEC/ASCE)

Harbor Drive Pedestrian Bridge T.Y. Lin International Accepted by Joe Tognoli

Completed in March 2011, the Harbor Drive Pedestrian Bridge is one of the longest self anchored suspension bridges in the world. The landmark bridge was constructed to provide a safe, elevated footbridge for pedestrians and bicyclists over the busy Harbor Drive and existing train and trolley tracks. The main span of the bridge is 354-feet and the pylon is 131-feet tall. The pylon is inclined at a 60-degree angle from the horizontal and leans over the deck to support the single pair of suspension cables. Thirty-four individual suspenders attached to the main cable support the 20-foot wide deck from the top of the railing at only one edge of the deck. The bridge is horizontally curved and a tendon is stressed at the top of the railing. The radial force generated by the tendon above the deck elevation generates a restoring moment, which balances the forces in the bridge deck. The Harbor Drive Pedestrian Bridge has also enhanced the walkability experience for its users as well as the residents of the downtown San Diego region. Additionally, safety and convenience for ballpark visitors and convention center attendees are greatly improved as the bridge provides a safe pedestrian crossing over Harbor Drive. According to a study done before construction, the bridge provides a direct and safe passageway for more than 4,000 pedestrians and 60 bicyclists within the hour following the conclusion of a game at PETCO Park. At its peak demand level, the bridge serves 1,900 pedestrians/15 peak minutes. The unique structure was completed under budget and had lower than expected cost changes, which is extraordinary for this never-before constructed type of bridge. The structure type, a self-anchored suspension bridge, is a relatively unique concept which borrows some of its design characteristics from conventional two-pylon suspension bridges but changes the anchorage points from the usual large and costly ground anchors to an anchorage which is attached to the structure itself. The Harbor Drive Pedestrian Bridge is a uniquely funded public/private project and is a collaboration of local, state, regional, and federal agencies and programs. As the last piece of the long anticipated Park-to-Bay link, a 100-year-old City of San Diego strategic plan, the Harbor Drive Pedestrian Bridge serves as a southern gateway to downtown San Diego and truly is a bridge fitting for America's Finest City. The San Diego engineering community recognizes the Harbor Drive Pedestrian Bridge as an outstanding civil engineering achievement.

Outstanding NSBE Project (SDCEC/NSBE)

Pre-College Initiative Program in support of the Summer Engineering Experience For Kids (SEEK)

Accepted by Brian Ware NSBE

The Pre-College Initiative (PCI) program is designed to stimulate the interest in science, technology, engineering, and mathematics fields, or STEM. The goal is to encourage students in grades K-12 to attend college and pursue technical degrees. The NSBE PCI program provides activities to help students discover firsthand how engineering and technology relate to the world around them and discover the excitement of academic excellence, leadership, technical development and teamwork. Mr. Brian Ware's dedication to the NSBE mission and countless volunteer hours as director of the PCI program has created tremendous success and superseded all goals and expectations of the program. Recognized by the unified school district with an "Excellence Award", this program, under the leadership of Mr. Brian Ware has increased the

membership to over 70 high school students and has facilitated dozens of interactions with the engineering community. The San Diego engineering community recognizes NSBE's Pre-College Initiative Program in support of the Summer Engineering Experience For Kids (SEEK) as an outstanding achievement.

Outstanding SHPE Project (SDCEC/NSBE)

Leadership Development and Outreach Programs

Accepted by Luke Anthony Burgan SHPE

Luke Anthony Burgan is a perfect example of truth in motion. A member of SHPE since his days at San Diego State University, where he served as SDSU SHPE President for two terms while earning his degree in Mechanical Engineering, few exemplify the commitment to the San Diego community at large. His membership and other programs are still used by the present student boards. Currently as the SHPE SD President, coupled with his Career Commitment at CYMER as a Manufacturing Engineer, Luke brings his experience in Project Management, Public Speaking and Cross-Functional Teamwork to every aspect of his life. This year Luke and SHPE SD have expanded their reach in the co-hosting of the National Engineers Week Banquet, SHPE/NSBE/SWE Networking Events, a joint consortium for establishing a Jr.SHPE/NSBE at Lincoln High School and Expanding Your Horizons.

Surrounded by dedicated professionals on the executive board, he recognized the impact SHPE has in the community, and has driven the pursuit of new outreach programs, new communication methods, and reinventing the new image of SHPE San Diego. SHPE San Diego continues to provide professional development and STEM awareness to the community in the hope of establishing structured programs that will advance the San Diego community for the future. Burgan embodies SHPE National's mission statement committing to changing lives by empowering the Hispanic community to realize their fullest potential and impacts the world through STEM awareness, access, support and development. The San Diego engineering community recognizes SHPE's Leadership Development and Outreach Programs and Luke Anthony Burgan for this outstanding achievement.