

# 2012 Asian American Engineer of the Year honorees have deep Sandia roots

By Nancy Salem • Photos by Randy Montoya

The three Sandia honorees in this year's Asian American Engineer of the Year awards came to the Labs on very different paths but share a longtime commitment to the research and mission.

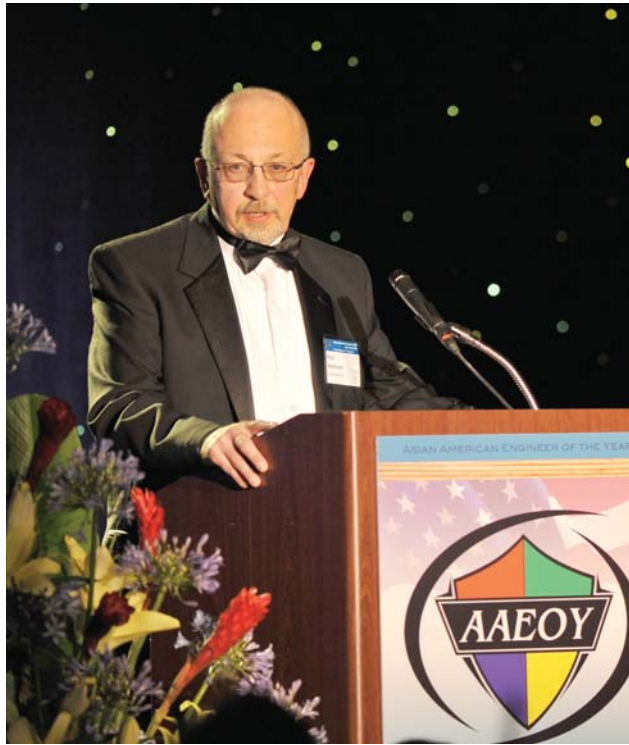
Hongyou Fan (1815), Rekha Rao (1514), and Ming Lau (8230) were among 19 people from across the US receiving 2012 AAEOY awards. They bring to 12 the number of Sandians recognized since the prestigious program was started in 2002 by the Chinese Institute of Engineers-USA (CIE-USA). It recognizes outstanding Asian American professionals in science and engineering for their technical achievement and public service.

The 2012 AAEOY event was held in Albuquerque March 2-3 at the Marriott Uptown. Eliot Fang (1524), a former AAEOY honoree, headed the event's Executive Committee, and Sandia and Lockheed Martin were title sponsors.

Laboratories Director Paul Hommert was keynote speaker at the March 3 awards ceremony.

He talked to the 450 attendees about challenges facing the US, the role of science and engineering in helping to solve them, and the part played by Asian Americans. "As I think of America's human heritage, with people so diverse who have chosen this land as their home, I cannot help but think of how lucky, how rich we are in our quintessential diversity," he said. "We draw strength from our different backgrounds. We have become a nation that values contributions from people of all colors, creeds, and ethnicities."

Paul said Asian Americans helped build the US and have played successful roles in all facets of American life. "As families, you have instilled in your children a deep sense of



SANDIA LABORATORIES DIRECTOR Paul Hommert gave the keynote address at the AAEOY awards banquet.

respect for improving the mind through learning . . . for stressing science and engineering in education, along with a deep sense of civic duty and a wider framework that makes for well-rounded human beings," Paul said. "Our

nation has been a direct beneficiary of your efforts."

He said the country faces challenges around economic competitiveness and increasingly complex national and global security threats. Those threats must be countered through innovation, creativity, anticipation, and excellence in science and engineering, he said.

"We must be responsive," Paul said. "We must use our scientific and engineering knowledge and make that knowledge stronger."

The country's science and engineering prowess is threatened, Paul said, citing that just 4 percent of the workforce is made up of scientists and engineers, and that the US ranks 27th among developed nations in the proportion of college students receiving undergraduate degrees in those fields. "That's why I am urging you — we must continue to tap into a diverse, highly qualified, and talented pool of candidates who will become our workforce of tomorrow," he said. "Our country relies on you to carry forward the torch of our scientific and technical excellence."

Paul said he is proud of Sandia's support of Asian American scientists and engineers. "This group . . . is engaged in groundbreaking work that contributes directly to Sandia's mission," he said. "We thank them and their families for serving the country by dedicating themselves to work in the national interest."

Paul concluded by thanking the Asian American research community. "You believe that science and engineering define our lives in a profound way, that science and engineering write our history because they are key to solving the national and global challenges we experience today," he said. "For your vision and your contributions, the country owes you a debt of gratitude. Thank you."

Meet the three Sandians (on the next page) honored in the 2012 Asian American Engineer of the Year awards:



AAEOY PARTICIPANTS toured Sandia facilities as part of the two-day event. Dept. 1342 Manager Ray Thomas (in white shirt) uses a scale model to explain the capabilities of the Saturn accelerator.



CONFERENCE ATTENDEES, including Asian American Engineer of the Year award recipient Ming Lau, center, stopped by the International Programs Building during a tour of Sandia.



DANCERS from the National Institute of Flamenco in Albuquerque performed at the AAEOY awards banquet at the Marriott Uptown.



ANITA WONG, wife of Sandia manager Channy Wong (8238), and Sandia engineer Cliff Ho (6123) were co-emcees of the AAEOY banquet.



# Sandia claims three Asian American Engineer of the Year recipients

## Hongyou Fan

Hongyou has been with Sandia since 2000 and is a principal member of technical staff. His research focuses on assembly and engineering of nanostructured materials and revealing their structure and property relationship for device integration.

Hongyou has developed cutting-edge technologies and received awards including an R&D 100, Federal Laboratory Consortium Outstanding Technology Development, and University of New Mexico Mentor. He has authored or co-authored 60 scientific papers and has more than 4,000 citations and 20 patents and patent applications.

Hongyou was born in China, and earned a bachelor of science in chemistry from Jilin University in Changchun, China, in 1990. He went on to a master of science in polymer chemistry and physics from Changchun Institute of Applied Chemistry.

He moved to Albuquerque in 1995 and earned a doctorate in chemical and nuclear engineering from the University of New Mexico.

"My hometown is very cold," Hongyou laughs when asked about choosing UNM. "We wanted warm weather."

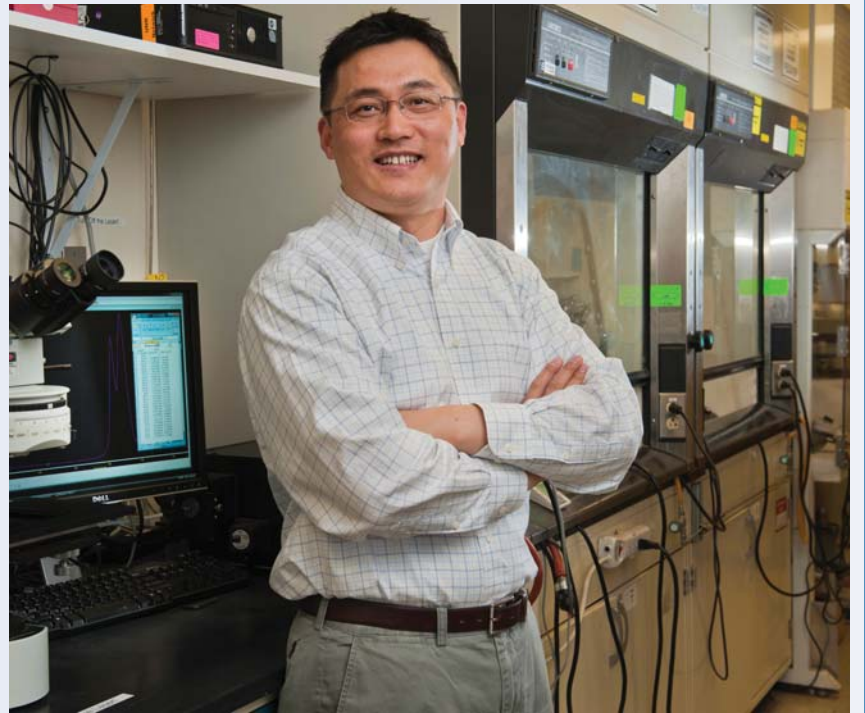
Hongyou did a postdoc at Sandia and later joined the Labs. "I found a home here," he says.

"Hongyou is a delight to work with," says his manager, Bill Hammetter (1815). "He is extremely intelligent and good at applying science to real problems. He serves his community as well as the technical community. He's an all-around really great guy."

Hongyou is married to Dongmei Ye, who has a doctorate in chemistry and biochemistry from UNM and was recently hired at Sandia. They have two children, Charles, 10, and Cindy, 4.

The AAEOY honored Hongyou for his technical work, his mentoring of the next generation of US engineers, and for his community service to K-12 education.

"I feel honored," Hongyou says. "It's very humbling to be among those highly accomplished people. The award motivates me to continue to innovate and face challenges. It has inspired me as an Asian American to accomplish all my dreams."



HONGYOU FAN is "an all-around really great guy," says his manager, Bill Hammetter.

## Rekha Rao

Rekha is a principal member of technical staff. She joined Sandia in 1990 and is a finite element software developer and analyst for computational fluid dynamics and multiphysics applications, including free and moving boundary problems and non-Newtonian fluid mechanics.

Among other projects, she has worked on low-level radioactive waste disposal, flow-through porous media, viscoelastic flows, coating flows, fluid-solid interactions, thermal batteries, and nuclear waste reprocessing. She has received numerous awards.

Rekha is a native of Berkeley, Calif., who earned a bachelor of science in chemical engineering from the University of California, Berkeley, her father's alma mater. She went on to the University of Washington in Seattle, where she learned to write finite element codes. She earned a doctorate and landed an on-campus interview with Sandia.

She was hired in late 1990, working first on low-level nuclear waste and moving into fluid mechanics. "I'm so happy to have a job where I can be creative and do research and have an impact," she says. "I can do things that help real manufacturing problems in the real world."

Rekha says the highlight of her career has been work-

ing on GOMA, the finite element multiphysics code. "There's so much cooperation at Sandia, so much fellowship," she says. "It's an amazing place to work."

Her manager, Martin Pilch (1514), says Rekha has reached out to the next generation of scientists. "Despite her hectic professional and personal life, Rekha always has time to mentor young staff," he says.

Rekha has two children, daughter Mirabai, 11, and Prem, 7, a medically fragile boy who weighed 1.5 pounds at birth and fought through two years on oxygen and seven surgeries to survive. "He's my miracle baby," Rekha says.

She was honored by AAEOY for her contribution to the development of numerical models for improving manufacturing processes while supporting future scientists and public education.

"I'm thrilled," she says. "I was just amazed to get this, in such esteemed company."



REKHA RAO is a working mother whose youngest child, Prem, survived against the odds.

## Ming Lau

Ming joined Sandia in 1981. He has worked on terrain-aided navigation, missile guidance, controls and modeling of complex-electromechanical systems, and performance analysis of nuclear weapon fuzing.

As a senior manager at Sandia/California the past three years, Ming oversees three nuclear weapons system engineering departments and one engineering design services department. He was a member of a study group that received the 2005 Leo Szilard Award for Physics in the Public Interest from the American Physical Society.

Ming was born in Canton, China, and went to elementary school in Hong Kong. His family immigrated to Houston, Texas, when he was 11.

Ming was hired by Sandia/New Mexico at age 21 after receiving a bachelor of science from the University of Missouri-Rolla. He was part of Sandia's One-Year-on-Campus program that hired engineers with bachelor's degrees and sent them back to school for a master's. Ming earned a master's and, through Sandia's Doctoral Study Program, a doctorate in electrical engineering, both from Stanford University.

"I owe a lot to Sandia's educational programs," he says.

Ming, who became a manager in 1997, transferred to Sandia/California in 2004 as deputy to the VP for

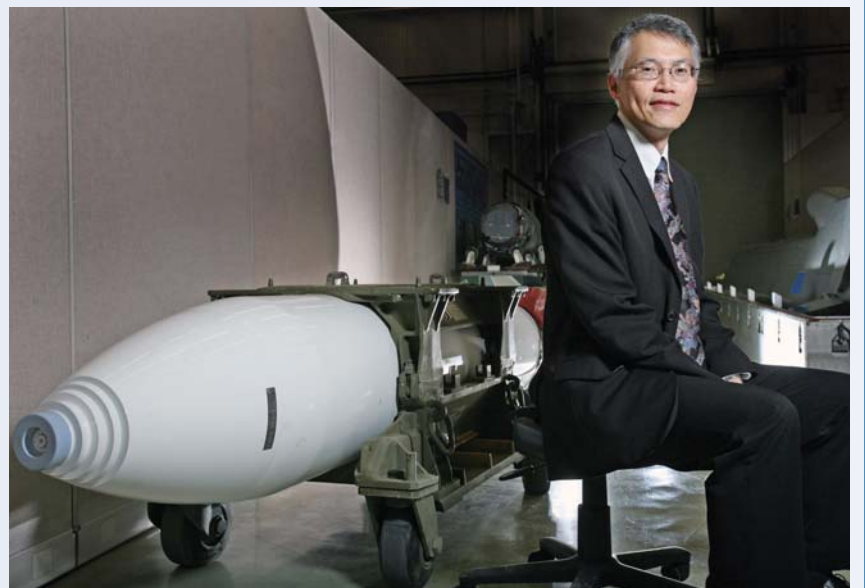
Defense Programs. He was named manager of the B83 system engineering department in 2006 and became a senior manager in 2009.

"I've done really interesting work as a staff member, manager, and senior manager," Ming says.

David Williams (100), who promoted Ming to manager back in 1997, says he admires Ming tremendously. "He's a wonderful man," David says. "There are people who I honestly believe are incapable of failure, and Ming is one of them. He does everything with excellence — as a man, a parent, a son, a husband, a patriot, and as a member of the community."

Ming is married to Lan Lau and has two children, Brian, 19, a freshman at the University of Texas at Austin studying computer science, and Britney, 17, a high school senior interested in medicine.

Ming was honored by AAEOY for his sustained contributions to stewardship of nuclear weapons systems in the US stockpile.



MING LAU earned a master's degree and PhD through Sandia educational programs. (Photo by Dino Vournas)

"It was very overwhelming to be recognized by colleagues and executive management," he says. "It means so much to me."