UC SANTA BARBARA

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The Spirit of Innovation

Inventiveness may be its own reward, but the recognition that sometimes results can be pretty gratifying, too.

Such is the case for Daniel J. Blumenthal, a professor in UC Santa Barbara's Department of Electrical and Computer Engineering (ECE), who has been named a 2017 fellow of the National Academy of Inventors (NAI). He was cited for "demonstrating a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society."

"Our campus is thrilled for Professor Blumenthal on his election to the National Academy of Inventors, a proud and prestigious peer recognition of his creativity in engineering," said Chancellor Henry T. Yang. "While celebrating his commitment to innovation, this honor also acknowledges Professor Blumenthal's important contributions to society through the creative application of his research at the frontier of technology."

Blumenthal's lab develops new hardware and communications technologies to solve complex communications, transmission, switching and signal processing problems out of reach with today's technologies. Its primary research undertaking is to develop new functions integrated on small chips called photonic circuits and use them to build networks in ways that save energy and increase the scale of connectivity and bandwidth of data centers and the internet.

“It is a great honor to be nominated as a fellow of the NAI and recognized for work that has come to fruition over so many years through working with so many collaborators,” said Blumenthal, head of the ECE’s Optical Communications and Photonic Integration Group and director of the Terabit Optical Ethernet Center. “The challenge of combining creativity and engineering to operate on the edge of technology innovation is in itself hugely satisfying. Seeing this technology take root and positively impact generations of fiber communications networks that people use in their everyday lives to be more energy efficient and communicate, conduct business and solve some of today’s toughest problems — as well as train future engineers and create jobs — continues to motivate my desire to innovate and make positive impacts on society.”

In addition to his research in energy-efficient photonics for communications, Blumenthal has served as the principal investigator for large-scale research programs, including the DARPA/MTO-funded CSWDM, Label-Switched Optical Router (LASOR) and iPhod projects. He also has served on the board of directors for National LambdaRail and on the Internet2 Architecture Advisory Council. Blumenthal has been a guest and associate editor for multiple Institute of Electrical and Electronics Engineers (IEEE) special issues and an organizer and technical program committee member for multiple international world-renowned conferences, including the Conference on Optical Fiber Communications.

“We offer sincere congratulations to Professor Blumenthal for this important, well-deserved and highly appropriate recognition as an NAI fellow,” said Rod Alferness, dean of the College of Engineering. “His brilliance — as well as the spirit of innovation and collaboration he shares with his College of Engineering faculty colleagues — has enabled him to contribute in ways that optimize a wide range of life-improving technologies.”

Blumenthal holds three degrees in electrical engineering: a Bachelor of Science from the University of Rochester, a Master of Science from Columbia and a doctorate from the University of Colorado Boulder. He is a fellow of the IEEE and of the Optical Society. He received a Presidential Early Career Award for Scientists and Engineers from the White House in 1999, a National Science Foundation Young Investigator Award in 1994 and an Office of Naval Research Young Investigator Program Award in 1997. Blumenthal has authored or co-authored more than 410 papers, holds 22 patents and is co-author of “Tunable Laser Diodes and Related Optical Sources” (New York: IEEE–Wiley, 2005).

The ranks of NAI fellows — more than 900 to date — include Nobel laureates; recipients of the U.S. National Medal of Technology and Innovation and the U.S. National Medal of Science; presidents and senior leaders of research universities and nonprofit research institutes; members of the National Academies of Sciences, Engineering, and Medicine; inductees of the National Inventors Hall of Fame; and fellows of the American Association for the Advancement of Science, the American Academy of Arts & Sciences and the IEEE.

This year’s class of fellows will be inducted during the seventh annual NAI Conference to be held in April in Washington, D.C. Andrew H. Hirshfeld, U.S. commissioner for patents, will provide the keynote address for the induction ceremony.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.