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Three UC San Diego Professors Elected to the American Academy of Arts and Sciences



UC San Diego's Darwin Berg (left), Marta Kutas (center) and Ivan Schuller (right) are new members of the 2018 class of the American Academy of Arts and Sciences. Photos courtesy of the Division of Biological Sciences, the Department of Cognitive Science, and the University of Gothenburg, Chalmers, www.chalmers.se.

The American Academy of Arts and Sciences, one of the country's most esteemed honorary societies and independent policy research centers, has elected three professors of the University of California San Diego as new members.

UC San Diego's **Darwin Berg**, **Marta Kutas** and **Ivan Schuller** will join the academy's class of 2018 that features 213 individuals in a wide range of disciplines and professions. This year's new members span from actor Tom Hanks to former president Barack

Obama. Previous members have included George Washington, Benjamin Franklin, Daniel Webster, Ralph Waldo Emerson, Margaret Mead and Martin Luther King Jr.

The university's professors will be inducted along with the other new members at a ceremony in October in Cambridge, Mass.

"This class of 2018 is a testament to the academy's ability to both uphold our 238-year commitment to honor exceptional individuals and to recognize new expertise," said Nancy Andrews, the chair of the board of the American Academy. "John Adams, James Bowdoin, and other founders did not imagine climatology, econometrics, gene regulation, nanostructures or Netflix. They did, however, have a vision that the academy would be dedicated to new knowledge—and these new members help us achieve that goal."

Founded in 1780, the American Academy of Arts and Sciences convenes leaders from the academic, business and government sectors. The academy honors exceptional scholars, leaders, artists and innovators and engages them in sharing knowledge and addressing

challenges facing the world. The academy's projects and publications generate ideas and offer recommendations to advance the public good in the arts, citizenship, education, energy, government, the humanities, international relations, science and more

According to the academy, its strength lies in the intellectual leadership of its members and the wide range of expertise they bring to its studies and publications, as exemplified by UC San Diego's new members:

- **Darwin Berg**, distinguished professor emeritus in the Division of Biological Sciences, has made many contributions to the understanding of synapse formation and nicotinic signaling in the brain. He helped elucidate the roles of molecular components and endogenous activity in shaping neural circuit development and in modulating adult function. After growing up on a ranch in northern Idaho, he received a PhD from UC Berkeley, postdoctoral training in neurobiology at Harvard Medical School and joined the faculty at UC San Diego in 1975. He has run a research group since then and served twice as department chair. He is a recipient of a Guggenheim Fellowship, a Javits Neuroscience Investigator Award and served both as a council member and treasurer for the Society for Neuroscience. He is a fellow of the American Association for Advancement of Science and received the UC San Diego Chancellor's Associates Faculty Excellence Award for Research in Science and Engineering.
- **Marta Kutas**, distinguished professor and chair of the Department of Cognitive Science, and adjunct professor of neurosciences, uses behavioral and electrophysiological techniques to study brain processes during language comprehension and meaning construction. She also serves as the director of the Center for Research in Language. Credited with a long list of papers that have been cited more than 30,000 times, Kutas is perhaps best known for discovering, with Steven Hillyard, the N400 brain wave. Recorded at the human scalp, the N400 is a default brain response between 200 and 500 (peaking around 400) ms after the onset of any potentially meaningful item such as a written, spoken, signed or depicted word. Since its discovery in 1980, the N400—especially variations its amplitude—has been used in more than a 1,000 research articles worldwide. Kutas' lab also studies information processing, more generally, (e.g., how we learn and remember and make decisions) throughout the adult lifespan in typical and atypical populations both in the whole brain and in its halves. In 2015 Kutas received the Distinguished Career Contributions Award from the Cognitive Neuroscience Society.
- **Ivan Schuller**, distinguished professor and solid state physicist in the Division of Physical Sciences, the California Institute for Telecommunications and Information Technology and the Center for Advanced Nanoscience, is a high technology expert known for creating the

field of metallic superlattices and recognizing its impact on magnetism and superconductivity. He directs the Multidisciplinary Research Initiative on Integrated Nanosensors and collectively leads more than 50 researchers who develop various nanosensors for chips and who study nanostructured, organic, magnetic and superconducting materials. A Fellow of the American Physical Society and a member of the Chilean, Spanish and Belgian Academies of Sciences, he has won numerous national and international scholastic awards. Schuller is one of the most cited physicists within the last two decades, with more than 500 published technical papers and 20 patents. He has given more than 350 invited lectures internationally, and his work was mentioned in the justification for the 2007 Nobel Prize as a precursor to the discovery of Giant Magnetoresistance. Schuller actively engages in science-related outreach and artistic activities, including museum and television lectures worldwide in several of the seven languages he speaks. He also made a film about nanoscience, "When Things Get Small," which won Emmy and Telly awards, among others.

"Membership in the academy is not only an honor, but also an opportunity and a responsibility," said Jonathan Fanton, President of the American Academy. "Members can be inspired and engaged by connecting with one another and through academy projects dedicated to the common good. The intellect, creativity and commitment of the 2018 class will enrich the work of the academy and the world in which we live."

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