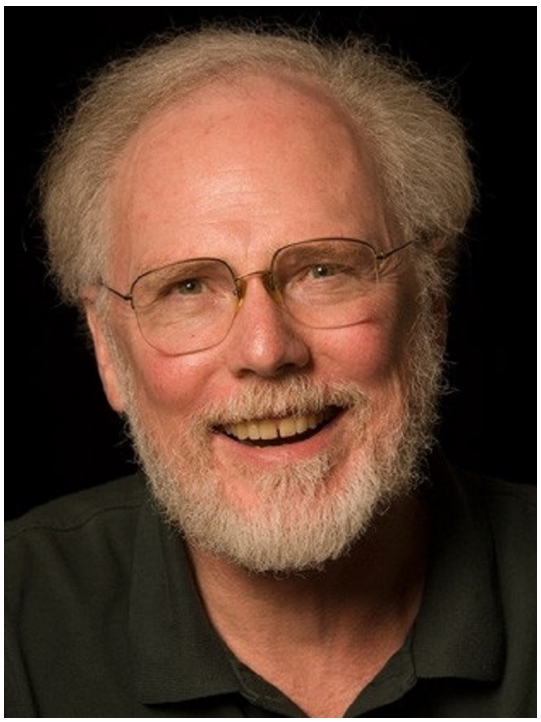
UC San Diego
UC San Diego News Center

October 17, 2017 | By Cynthia Dillon

UC San Diego Distinguished Chemist Wins 2017 Russell M. Pitzer Award

The University of California San Diego's history of outstanding chemists dates back to Nobel Prize winner Harold Urey, who joined the university in 1958. That tradition of excellence continues today, as exemplified by The Department of Chemistry and Biochemistry's J. Andrew McCammon. The distinguished professor, who also holds the Joseph E. Mayer Chair of Theoretical Chemistry, will deliver the Russ Pitzer Lecture Nov. 13 at Ohio State University, which named McCammon the winner of the 2017 Russell M. Pitzer Award. McCammon's talk will address "Thermodynamics of Molecular Recognition."



Distinguished Professor J. Andrew McCammon. Photo courtesy of UC San Diego

Thermodynamics governs how strongly molecules bind to each other. McCammon has used this to invent theoretical methods for accurately predicting molecular recognition, rates of reactions—or speed of molecular changes—and other properties of chemical systems, such as water solubility. In addition to their fundamental interest, these methods play a growing role in the design of new drugs and in designing new enzymes and polymers for water purification.

Receiving the Pitzer prize is notable because of its link to the Pitzer Family, whose patriarch Russell K. Pitzer was an American orange grower and philanthropist who founded Pitzer College. His only son, the late Kenneth S. Pitzer was a physical and theoretical chemist and former president of Rice and Stanford universities. Kenneth Pitzer's son, Russell M. "Russ" Pitzer, for whom McCammon's award is named, wrote a pioneering research paper in 1973 that is considered a landmark in the history of theoretical chemistry.

McCammon, himself, is a pioneer of biosimulation—a computer-aided mathematical simulation of biological processes and systems. He is also a fellow of the San Diego Supercomputer Center at UC San Diego, with a 1995 Smithsonian Institution's Information Technology Leadership Award for Breakthrough Computational Science. He also won the American Chemical Society's National Award for Computers in Chemical and Pharmaceutical Research in 2008.

McCammon has authored or co-authored more than 800 publications in theoretical chemistry and biochemistry, and more than 80 of his graduate students and postdoctoral fellows hold tenured or tenure-track faculty positions at leading colleges and universities.

"I enjoy coming to work at UC San Diego every day not only for the chance to help devise new ways to use computers to discover therapeutic drugs, but even more for the opportunity to help young scientists launch their own amazing careers," McCammon said.

His impactful work has been cited more than 40,000 times, and he has won numerous awards and honors, including last year's Joseph O. Hirschfelder Prize in Theoretical Chemistry, awarded by the Theoretical Chemistry Institute at the University of Wisconsin-Madison. It is considered prestigious by chemists since previous recipients include several winners of the Nobel Prize in Chemistry.

A member of the chemistry faculty at UC San Diego since 1994, McCammon is also the principal investigator at the McCammon Group, which studies biochemical reactions using principles of statistical mechanics, classical and quantum mechanical models and homology models of proteins to gain insight into functions of biological macromolecules. The group's research focuses on rational drug design, molecular simulations and questions in structural biology. McCammon is a member of the National Academy of Sciences, the American Physical Society, the Biophysical Society and the American Association for the Advancement of Science.

The UC San Diego Department of Chemistry and Biochemistry is committed to excellence in research, education and service. As part of that mission, the department values and promotes equity, fairness and inclusion of diverse members. The department is part of UC San Diego's Division of Physical Sciences, which also includes the Department of Mathematics and the Department of Physics.

MEDIA CONTACT

Cynthia Dillon, 858-822-6673, cdillon@ucsd.edu

UC San Diego's Studio Ten 300 offers radio and television connections for media interviews with our faculty, which can be coordinated via studio@ucsd.edu. To connect with a UC San Diego faculty expert on relevant issues and trending news stories, visit https://ucsdnews.ucsd.edu/media-resources/faculty-experts.