Maryland Chemist of the Year 2025

JOHNS HOPKINS
KRIEGER SCHOOL
of ARTS & SCIENCES

ACS Local Section
Maryland

The Maryland Chemist of the Year Award was established in 1962 to recognize and to honor, each year, a member of the Maryland Section of the American Chemical Society for outstanding achievement in the field of chemistry and for her/ his research done in Maryland.

Professor John P. Toscano will be honored with a ceremony and a reception that includes, the award lecture, the award presentation and dinner with colleagues.

Congratulations!

Contact
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PROFESSOR JOHN P. TOSCANO, Ph.D.

He received his baccalaureate degree from Princeton University in 1987 where he graduated magna cum laude in chemistry and his PhD in organic chemistry from Yale University in 1993. Upon completion of a National Institutes of Health postdoctoral fellowship in organic chemistry at Ohio State University, he joined the Johns Hopkins University Department of Chemistry in 1995.

RESEARCH

His research focuses on the fundamental chemistry/biochemistry of small molecule bioactive signaling agents with particular emphasis on nitric oxide (NO), nitroxyl (HNO), hydrogen sulfide (H_2S), and related hydropersulfides (RSSH). His research in this area began over 25 years ago by examining the photochemistry of NO-releasing diazeniumdiolates and developing novel photochemical precursors to NO. This work led to the investigation of NO's redox cousin, HNO, and its potential application as a novel therapeutic for the treatment of heart failure. His work addressed HNO's mechanism of action with particular emphasis on thiol modification of important regulatory proteins and the development of donor molecules required for the generation of HNO *in situ*. More recently, his research has expanded to and currently focuses on the chemistry and biochemistry of H_2S and related reactive sulfur species, including RSSH, reactive intermediates that require donor molecules for their administration and study. RSSH are newly discovered species that exist *in vivo* and protect cells from damaging agents and toxins. They appear to be especially adept at mitigating inflammation and oxidative stress, processes that when uncontrolled are the cause of many disorders, including cardiovascular and neurodegenerative diseases.

READ MORE: Biographical sketch & Recent research
PUBLICATIONS: https://sites.krieger.jhu.edu/toscano-lab/publications/
LAB: Dr. Toscano's lab
OUTREACH: The Gazette, JHU