POINTS OF PRIDE

RESEARCH

- *NSF-MRSEC,* Interdisciplinary Center for Emergent Materials (CEM), Pat Woodward and Joshua Goldberger are IRG leaders of this Center.
- *An NSF-CCI*, Center for Aerosol Impacts on Climate and the Environment, *Heather Allen* is the OSU partner in this center. This CCI is shared among faculty at UCSD, Utah, Yale, Iowa, Wisconsin, Cal Tech, Colorado State, and UC Davis.
- Six faculty members (Coe, Allen, Dutta, Magliery, Parquette, Pei) have small business spin offs that have resulted from recent discoveries in their labs.

EDUCATION

- We teach over 9,000 students in the fall term and nearly 7,000 students in spring semester.
- We have over 820 undergraduate chemistry and biochemistry majors, including over 50 on the regional campuses, and approximately 250 graduate students.
- We are implementing a Peer-Lead Team Learning program for our first year chemistry and biochemistry majors, in order to improve retention of students in our major.
- Two NIH Training Grants: Biophysics co-led by Tom Magliery and Ralf Bundschuh (Physics)*;* and Cellular, Molecular, and Biochemical Sciences (CMBP) co-led by *Karin Musier-Forsyth*, OES, and *Michael Ibba*, Chair, Department of Microbiology.
- Our first year undergraduate chemistry and biochemistry majors participated in a full semester research project in their general chemistry course.
- *Chris Callam* received the 2016 Provost's Award for Distinguished Teaching by a Lecturer.

- *Noel Paul* received the 2017 Provost's Award for Distinguished Teaching by a Lecturer
- *Ted Clark* received 2017 Ohio PKAL STEM Educator Award
- *Meng Huang and Billy McCulloch* (graduate students) received 2017 Presidential Fellowships

OUTSTANDING NEW FACULTY JOINING IN 2017

- *Alexander Sokolov,* Ph.D. in Chemistry from the University of Georgia; Postdoctoral work at Princeton University and Cal Tech; his research aims to develop new theoretical methods for the simulations of light-induced and non-equilibrium processes in chemical systems with complex electronic structure.
- *Christine Thomas,* Ph.D. in Inorganic Chemistry from Cal Tech; Postdoctoral work at Texas A&M; her research examines the ways in which different components of a transition metal complex work together and how this cooperation affects the reactivity of the complex as a whole.
- *Christo Sevov,* Ph.D. from University of California, Berkeley; Postdoctoral work at the University of Michigan; his research aims to develop strategies at the interface of homogeneous catalysis and electrochemistry for the sustainable utilization of electrical energy that is generated from renewable sources.
- *Shiyu Zhang***,** Ph.D. in Chemistry from Georgetown University; Postdoctoral work at MIT and Harvard; his research interests are in cooperative reactivity of bimetallic complexes, high power radical batter and ionic molecular receptors for reactive molecules and aims to synthetically model biological centers with high reactivities that have yet to be replicated by synthetic systems.
- *Casey Wade,* Ph.D. from Texas A&M; Postdoctoral work at MIT; his research looks at the interface of molecular inorganic/organometallic chemistry and materials science and aims to develop general strategies for the synthesis and study of new functional materials with applications in catalysis, sensing, and separation.

RECENT CHEMISTRY DISCOVERIES

- Yiying Wu and colleagues synthesized three molybdenum sulfide catalysts with molecular triangle moieties that mimic the edge sites of MoS_x materials. These new catalysts facilitate the hydrogen evolution reaction from water with high efficiencies, tunable rate constants and overpotentials.
- Abraham Badu-Tawiah and colleagues developed a picomole-scale, real-time photoreaction screening platform in which a handheld laser source is coupled with nanoelectrospray ionization mass spectrometry.

- David Nagib and colleagues have developed a new method of selectivity incorporating ammonia into C-H bonds adjacent to alcohols within complex molecules. The radical-mediated approach enables post-synthetic introduction of pharmacologically valuable C-N bonds into medicines.

RECENT BIOCHEMISTRY/BIOMEDICAL RELATED DISCOVERIES

- Dehua Pei and colleagues designed peptides that can inhibit proteins that heretofore have been "undruggable" due to lack of deep binding pockets, such as those involved in protein-protein interactions."
- Marcos Sotomayor and colleagues obtained X-ray crystal structures of cadherin proteins that are essential for hearing, balance, and brain wiring, with implications for our understanding of some types of deafness and epilepsy.
- Vicki Wysocki and colleagues developed a new enzyme–substrate pair detection platform based on native mass spectrometry.

RECENT FACULTY AWARDS

- *Heather Allen*, 2017 Saddleback College Alumna of the Year Award
- *Abraham Badu-Tawiah*, 2016 DOE Early Career Award, 2017 American Association for Mass Spectrometry Research Award for Young Scientists
- *Caroline Breitenberger,* 2016 President and Provost's Award for Distinguished Faculty Service
- *Anne Co*, 2016 Lumley Interdisciplinary Research Award
- *John Herbert*, 2016 Von Humboldt Research Prize
- *Christopher Jaroniec*, 2016 AAAS Fellow, 2017 Varian Young Investigator in Biological NMR Awardee
- *Susan Olesik*, 2016 OSU Glass Breaker Award, 2016 Analytical Sciences Power List
- *Claudia Turro*, 2016 ACS Morley Award, 2017 OSU Distinguished Scholar Award
- *Yiying Wu*, 2016, 40 Under 40 for Midwest Energy
- *Vicki Wysocki*, 2017 Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry