

# 2016 Cottrell Scholars

Through its Cottrell Scholar program, Research Corporation for Science Advancement nurtures outstanding teacher-scholars recognized for innovative, high-quality research as well as academic leadership skills. In addition to the 24 new scholars awarded \$100,000 each this year, two accomplished Cottrell Scholars have received RCSA's TREE Award (Transformational Research and Excellence in Education). The TREE Award celebrates integration of outstanding research and science education at America's universities and colleges.

2016  
Cottrell Scholar  
Awardees



**NANDINI ANANTH**  
Assistant Professor of Chemistry,  
Cornell University  
*Quantum Dynamic Investigations  
of Photo-induced Electron Transfer  
Catalyzed by Transition Metal  
Complexes*

**JOHN M. ANTOS**  
Assistant Professor of Chemistry,  
Western Washington University  
*Structural Characterization of  
Substrate Promiscuity in Bacterial  
Sortases*

**TAMARA BOGDANOVIC**  
Assistant Professor of Physics,  
Georgia Institute of Technology  
*Shedding Light on Supermassive  
Black Holes*

**EVA-MARIA SCHOETZ COLLINS**  
Assistant Professor of Physics,  
University of California, San Diego  
*Unraveling the Role of Mechanics for  
Tissue Self-organization In Vivo*

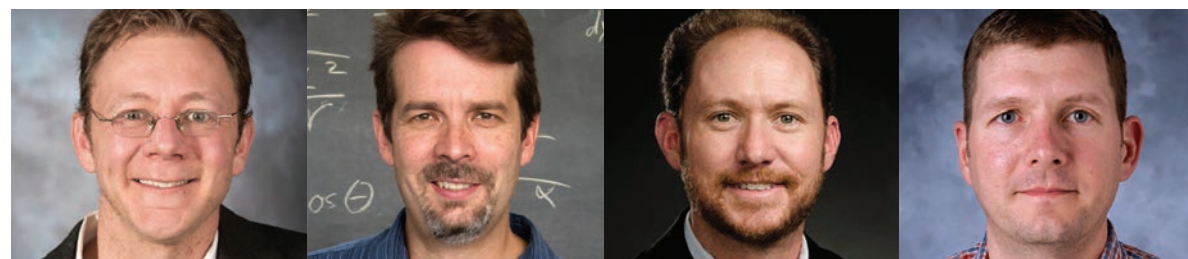


**KATHRYN L. HAAS**  
Assistant Professor of Chemistry,  
Saint Mary's College, Indiana  
*Transporting Cu(I) as Cargo and  
Using Cu(III) as a Killer Cofactor*

**ELIZA KEMPTON**  
Assistant Professor of Physics,  
Grinnell College  
*Atmospheric Structure and Emission  
Spectrum Calculations for Extrasolar  
Super-Earths: Looking Toward JWST  
and Beyond*

**DUŠAN KEREŠ**  
Assistant Professor of Physics,  
University of California, San Diego  
*Using Cosmological Hydrodynamic  
Simulations to Constrain Evolution of  
Galaxies and Their Gaseous Halos*

**DMYTRO KOSENKOV**  
Assistant Professor of Chemistry,  
Monmouth University  
*Exciton Energy Transfer in  
Light Harvesting Proteins with  
Covalently Bound Pigments:  
The Role of Molecular Vibrations*



**WILLIAM C. K. POMERANTZ**  
Assistant Professor of Chemistry,  
University of Minnesota, Twin Cities  
*Fluorinated Peptides and Proteins  
for <sup>19</sup>F MRI and Integrated Research  
Experiences in an Organic Chemistry  
Lab Course*

**AARON ROMANOWSKY**  
Assistant Professor of Physics,  
San Jose State University  
*The Nature and Nurture of Galaxies:  
Dynamics, Dark Matter, and  
Data Mining*

**MICHAEL J. ROSE**  
Assistant Professor of Chemistry,  
University of Texas at Austin  
*Imparting Precious Metal Properties  
to First-Row Metals with  
Heavy Atom Ligands*

**SCOTT K. SHAW**  
Assistant Professor of Chemistry,  
University of Iowa  
*Characterization and Control of  
Molecular Architectures within  
Thin Fluid Films*

2016  
TREE Awardees



**RIGOBERTO HERNANDEZ**  
Chemistry, Georgia Institute of  
Technology, Cottrell Scholar 1999

**VINCENT ROTELLO**  
Chemistry, University of Massachusetts,  
Amherst, Cottrell Scholar 1996

"RCSA believes the right combination of high-caliber research integrated with modern, interactive educational tools creates the perfect environment for scientific breakthroughs and outstanding learning outcomes for the next generation of U.S. scientists."

Robert Shelton, President, Research Corporation for Science Advancement



**JAHAN DAWLATY**  
Assistant Professor of Chemistry,  
University of Southern California  
*A New Handle in Solar-to-Fuel  
Light Harvesting: Creating Protons  
Where They are Most Needed*

**RAFAEL M. FERNANDES**  
Assistant Professor of Physics,  
University of Minnesota, Twin Cities  
*A Tale of Two States: Interplay between  
Magnetism and Superconductivity in  
Quantum Materials*

**SERGEY FROLOV**  
Assistant Professor of Physics,  
University of Pittsburgh  
*Experimental Investigation of One-  
Dimensional Topological Phases*

**SHARON GERBODE**  
Assistant Professor of Physics,  
Harvey Mudd College  
*Interactions between Impurities and  
Dislocations in Small Colloidal Crystals*



**AARON LECONTE**  
Assistant Professor of Chemistry,  
The Claremont Colleges  
*Biochemical Characterization and  
Engineering of Luciferases through  
Statistical Coupling Analysis*

**THOMAS MAIMONE**  
Assistant Professor of Chemistry,  
University of California, Berkeley  
*Redesigning Natural Products for  
the Treatment of Human Disease*

**BRENT C. MELOT**  
Assistant Professor of Chemistry,  
University of Southern California  
*Design of Safe and Sustainable  
Materials to Enable Large-Scale  
Energy Storage*

**MAIKEN H. MIKKELSEN**  
Assistant Professor of Physics,  
Duke University  
*Exploring the Interplay between  
Nanoscale Design and Optical  
Properties of Materials: A Research  
and Educational Approach*



**LEVI STANLEY**  
Assistant Professor of Chemistry,  
Iowa State University  
*Catalyst Design and Development to  
Unlock the Synthetic Potential of  
Olefin Hydroacylation Reactions*

**LAUREN WATERS**  
Assistant Professor of Chemistry,  
University of Wisconsin, Oshkosh  
*Manganese Homeostasis in Bacteria:  
Characterization of a Mn-Regulated  
Small Protein and Identification of  
Novel Mn Exporters*

**DI XIAO**  
Assistant Professor of Physics,  
Carnegie Mellon University  
*Topological Excitons in  
Gapped Dirac Materials*

**YAN YU**  
Assistant Professor of Chemistry,  
Indiana University at Bloomington  
*Exploiting Nanomaterials to  
Unravel Trafficking Inside Cells*

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