The Frontiers in Chemistry Series dates to 1941. The speakers are sponsored by local industrial and government laboratories, and the University. The lectures are free.

SCHEDULE The lectures are on Thursdays at 4:30 p.m., except for the February 2 lecture which will be at 11:30 a.m. Coffee and tea are available before the lectures.

LOCATION The lectures are in the Goodyear Lecture Hall (Clapp 108).

PARKING Parking is available at all Case visitor parking lots. Please bring your parking stub for validation.

DINNER The lectures are generally followed by dinner at a local restaurant. Those who wish to may join the dinner (participants pay the restaurant individually). Dinner reservations are required by the Monday preceding the lecture.

INQUIRIES AND DINNER RESERVATIONS
Stephanie Ohtola
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ONLINE INFORMATION
www.case.edu/chem/
Gold is an excellent example of a material that changes its properties on the nanometer scale. It captures and enhances the electromagnetic field of light, converts light energy into thermal energy, and binds drug molecules. By tuning the properties of gold nanoparticles, we were able to accomplish what the title suggests.

Mostafa A. El-Sayed
Julius Brown Chair and Regents Professor
Department of Chemistry & Biochemistry
Georgia Institute of Technology

Case Lecturer
campus host C. Burda

Impact of Nanoparticles and Other Emerging Compounds on Society November 3, 2011
This talk will focus on the application of simple peptides as catalysts for a variety of intriguing reactions. The utility of the catalysts for selective modification of natural product scaffolds will be a particular emphasis.

Vicki L. Colvin
Kenneth S. Pitzen-Schumberger Professor of Chemistry
Department of Chemistry
Rice University

NASA Lecturer
campus host T. Gray

Semiconductor Nanocrystals in Biological and Biomedical Applications November 10, 2011
This talk will explore challenges and solutions to applying semiconductor nanocrystals, a quantum dots, in biological and biomedical imaging, at the cellular level, and also in vivo. We will also review recent work in creating quantum dot complexes that can both image and “sense” their microenvironment, and the application of quantum dots in understanding the optimization of size and shape in nanoscale drug delivery schemes.

Mounig G. Bawendi
Lester Wolfe Professor
Department of Chemistry
Massachusetts Institute of Technology

BASF Lecturer
campus host C. Burda

Chemistry & Biology of Natural Products

Natural Products, Synthetic Catalysts, Unnatural Products February 2, 2012 note: lecture at 11:30
The lecture will focus on the application of simple peptides as catalysts for a variety of intriguing reactions. The utility of the catalysts for selective modification of natural product scaffolds will be a particular emphasis.

Scott J. Miller
Irene du Pont Professor of Chemistry
Department of Chemistry
Yale University

Energizer Lecturer
campus host R. Viswanathan

Studies in Natural Product Synthesis March 8, 2012
This talk will focus on advances in heterocyclic chemistry made as a consequence of studying palau amine and related alkaloids.

Phil S. Baran
Professor
Department of Chemistry
Skaggs Institute for Chemical Biology
Scripps Research Institute

Lubrizol Lecturer
campus host G. Tochtrop

Synthesis of Natural and Unnatural Products March 22, 2012
The development of new chemical reactions and their application to the synthesis of naturally occurring compounds as well as molecules of design will be presented. Specifically, recent work from our laboratory on the synthesis of phenazines as a key step in the construction of diverse chemical structures, and the design and synthesis of new cancer chemotherapeutic agents will be discussed.

Jeffrey D. Winkler
Merriam Professor of Chemistry
Department of Chemistry
University of Pennsylvania

Case Lecturer
campus host A. Pearson

Sensing and Self-Assembly with Hierarchical Nanomaterials November 17, 2011
Our research exploits the synergy between the sizes of nanomaterials and biomolecules to develop high-performance sensing systems and complex self-assembled optical materials. Recent work with metal and semiconductor based materials will be highlighted.

Shana O. Kelley
Professor and Director
Division of Biomolecular Science
University of Toronto

Innovation Chemical Technologies Lecturer
campus host A. Samia