

## Fellowship Awardees for 2004-2005



**Erik J. Alexanian**

Sponsor: GlaxoSmithKline  
University: Princeton University  
*Advisor: Erik J. Sorensen*

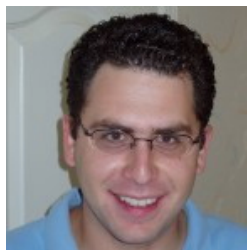
Erik J. Alexanian graduated from Harvard University, Cambridge, MA with an A.B. *cum laude* in Chemistry. He is currently a fourth year graduate student with Professor Erik J. Sorensen at Princeton University, Princeton, NJ. Erik contributed to a successful total synthesis of the furanosteroid viridin and is currently developing new transition metal-mediated synthetic methodologies for application to the total synthesis of the cytotoxic bisguanidine alkaloid palau'amine.



**Irwin Chen**

Sponsor: Wyeth Research  
University: Massachusetts Institute of Technology  
*Advisor: Alice Ting*

Irwin Chen graduated from Harvard University, Cambridge, MA with an A.B. *magna cum laude* in Chemistry. He is currently a fourth year graduate student in the laboratory of Professor Alice Ting at Massachusetts Institute of Technology, Cambridge, MA. Irwin's research involves the development of an enzymatic site-specific labeling methodology for proteins of living cells. He has developed a new approach using biotin ligase, which efficiently ligates a ketone analog of biotin to a 15-amino acid peptide, to successfully label cell surface proteins bearing this peptide tag with biophysical probes.



### **Andrew D. Cohen**

Sponsor: Aventis Pharmaceuticals

University: Johns Hopkins University

*Advisor: John P. Toscano*

Andrew D. Cohen graduated with an A.B. *cum laude* in Chemistry from Princeton University, Princeton, NJ. He is currently a fourth year graduate student with Professor John P. Toscano at Johns Hopkins University, Baltimore, MD. Andrews research is in the general area of mechanistic organic photochemistry using time-resolved infrared (TRIR) spectroscopy. Using TRIR spectroscopy, he has explored the photochemistry of ketone and enone triplet states, N-acylnitroindolines, diazeniumdiolates (NONOates), and oxadiazole-N-oxides, the latter a precursor to the first acylnitroso species directly observed in solution.



### **Jennifer M. Heemstra**

Sponsor: Nelson J. Leonard ACS DOC Fellowship, sponsored by Organic Syntheses, Inc.

University: University of Illinois at Urbana-Champaign

*Advisor: Jeffrey S. Moore*

Jennifer M. Heemstra received a B.S. in Chemistry from University of California at Irvine, Irvine, CA. She is currently a fourth year graduate student in the laboratory of Professor Jeffrey S. Moore of University of Illinois at Urbana-Champaign, Urbana, IL. Jennifer's research focuses on using *m*-phenylene ethynylene oligomers as synthetic enzyme mimics. She has utilized hydrogen bonding to template folding, and shown that folding promotes the methylation of DMAP-functionalized oligomers. She has also shown that methylation can enhance folding stability through pyridinium- interactions. She has also studied the kinetics of this process, and devised a novel indicator for measuring pKa values in acetonitrile.



### **Audris Huang**

Sponsor: Pfizer, Inc.

University: University of California at Irvine

*Advisor: Larry E. Overman*

Audris Huang graduated from the University of Illinois at Urbana-Champaign, Urbana, IL with a B.S. *cum laude* in Chemistry. Prior to attending graduate school, she worked as a medicinal chemist at Pharmacia Corporation for four years. Audris is currently a fourth year graduate student in Professor Larry E. Overman's laboratory at the University of California at Irvine, Irvine, CA. Her research is directed towards the total synthesis of the complex marine alkaloid palau'amine. She has also developed methodology that involves a chiral electrophile mediated dialkylation and utilized it to complete a practical total synthesis of phenserine.



### **Peter D. Jarowski**

Sponsor: Organic Reactions, Inc.

University: University of California at Los Angeles

*Advisors: Ken N. Houk and Miguel A. Garcia-Garibay*

Peter D. Jarowski received his B.S. in Chemistry from New York University, New York, NY. He is currently a third year graduate student with Professors Ken N. Houk and Miguel A. Garcia-Garibay at University of California at Los Angeles, Los Angeles, CA. Peter has implemented molecular mechanics and hybrid QM-MM methods to model functional solids to find methods to model the rotational potential of molecules in crystals and crystal dynamics. He has also determined the conjugative stabilization of diynes and the structures and strain energies of expanded polyhedranes by computational methods.



### **Jennifer E. Klare**

Sponsor: Organic Syntheses, Inc.

University: Columbia University

*Advisors: Colin Nuckolls*

Jennifer E. Klare earned a B.A. in Chemistry (with high honors) from Smith College, Northampton, MA. Jennifer is currently a fourth year graduate student at Columbia University, New York, NY in Professor Colin Nuckolls laboratory. Jennifer is interested in the field of single molecule electronics, in which she has synthesized a series of cruciform p-systems for molecular electronic applications, and characterized their self-assembled monolayers. In related work, Jennifer has developed an in situ approach to diversify and extend the monolayers in a controlled, stepwise fashion.



### **Tamara E. Munsch**

Sponsor: Schering-Plough Research Institute.

University: Purdue University

*Advisor: Paul G. Wenthold*

Tamara Munsch received a B.S. in Chemistry from Kansas State University, Manhattan, KS. She is a fourth year graduate student with Professor Paul G. Wenthold at Purdue University, West Lafayette, IN. Tamara's research includes thermochemical studies of open-shell organic molecules, such as triradicals and nitrene radicals, as well as reactivity studies of distonic diradical anions using flowing afterglow-triple quadrupole mass spectrometry. She has also carried out experimental studies of 5-dehydro-1,3-quinodimethane (5-dehydro-m-xylene, DMX), the first known example of an open-shell doublet hydrocarbon.



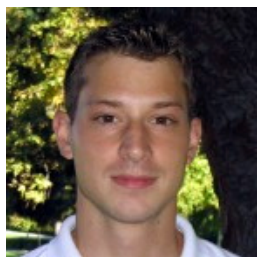
### **David A. Nicewicz**

Sponsor: Novartis Pharmaceuticals.

University: University of North Carolina at Chapel Hill

*Advisor: Jeffrey S. Johnson*

David Nicewicz earned his B.S. *cum laude* in Chemistry from University of North Carolina at Charlotte, Charlotte, NC. He is currently a fourth year graduate student in the laboratory of Professor Jeffrey S. Johnson at University of North Carolina, Chapel Hill, NC. David's research is focused on the development of enantioselective tandem cyanation/Brook rearrangement/C-acylation for the synthesis of densely functionalized malonic acid derivatives. He has also developed a new multi-component coupling of an acyl silane with various terminal alkynes and aldehydes.



### **Jason T. Roland**

Sponsor: Albany Molecular Research, Inc.

University: University of California at Irvine

*Advisor: Zhibin Guan*

Jason T. Roland received his B.S. in Chemistry from the Ohio State University, Columbus, OH. He is currently a fourth year graduate student working with Professor Zhibin Guan at University of California at Irvine, Irvine, CA. Jason's research involves the synthesis and study of biomimetic polymers. He has developed a new polymer that contains a series of intramolecularly hydrogen-bonded 2-ureido-4-pyrimidone (UPy) domains that break upon stretching, mimicking the unfolding of titin, an important connective protein.



**Jennifer M. Schomaker**

Sponsor: Eli Lilly and Company.

University: Michigan State University

*Advisor: Babak Borhan*

Jennifer M. Schomaker graduated from Saginaw Valley State University where she earned a B.S. in Chemistry. Jennifer worked at Dow for several years before beginning graduate school. Jennifer is currently a fourth year graduate student at Michigan State University in Professor Babak Borhans laboratory. Jennifer's research has resulted in the total syntheses of (+)-tanikolide and haterumalide NA. She is also interested in the development of new synthetic methodologies for the application to total synthesis, as exemplified by the development of a novel and diastereoselective approach to 2,3-disubstituted tetrahydrofurans using a sulfoxonium ylide.



**W. Michael Seganish**

Sponsor: The Procter & Gamble Company.

University: University of Maryland at College Park

*Advisor: Philip DeShong*

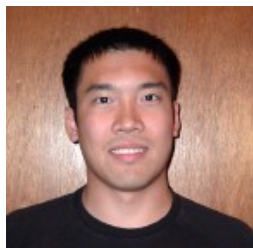
W. Michael Seganish received a B.S. in Physiology/Neurobiology and Biochemistry *cum laude* from University of Maryland at College Park, College Park, MD. He is currently a fourth year graduate student with Professor Philip DeShong at University of Maryland at College Park, College Park, MD. Michaels research is focused on developing new methodology for the synthesis and palladium-catalyzed cross-coupling of aryl siloxanes, and their application towards the total syntheses of the alkaloids, colchicine and allocolchicine.



### **Raissa M. Trend**

Sponsor: Bristol Myers Squibb Foundation.  
University: California Institute of Technology  
*Advisor: Brian Stoltz*

Raissa M. Trend graduated from the University of Chicago, Chicago, IL with a B.A. (Special Honors) in English languages and Literature. She then returned to school at the University of Wisconsin, Madison where she studied chemistry for 2 years. She is currently a fourth year graduate student in Professor Brian Stoltz's laboratory, at the California Institute of Technology, Pasadena, CA where she has been involved in the development of novel enantioselective palladium-catalyzed oxidation chemistry. She has also devised an experimental model for the aerobic kinetic resolution of secondary alcohols, which involved the preparation of an organometallic analog of a key intermediate thought to be important in the enantio-determining step.



### **Jimmy Wu**

Sponsor: Merck Research Laboratories.  
University: Harvard University  
*Advisor: David A. Evans*

Jimmy Wu graduated with an A.B. *cum laude* in Chemistry from Princeton University, Princeton, NJ. Prior to going to graduate school he spent 2 years as an associate chemist in the process research group at Merck. He is currently a fourth year graduate student at Harvard University, Cambridge, MA in Professor David A. Evans laboratory, where he has developed catalytic enantioselective aldol additions to glyoxylate esters using C<sub>2</sub>-symmetric Sc(III)-complexes as chiral Lewis acids. He has also developed highly enantioselective quinone Diels-Alder and ene reactions, using chiral rare-earth metal complexes.

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