

DOC Graduate Research Symposium
University of California, Santa Barbara, July 14-17, 2011

THURSDAY, JULY 14

3:00 pm - 6:30 pm Arrival and Dormitory Check-in at the Santa Rosa Hall
5:30 pm - 6:30 pm Registration and Dinner Formal Lounge, Santa Rosa Hall

THURSDAY EVENING *Presiding: Gary A. Molander (University of Pennsylvania)*

6:30 pm - 7:15 pm **Richmond Sarpong** Multicultural Center Theater (MCT)
University of California, Berkeley

Strategies and Tactics for the Synthesis of Complex Natural Products

7:15 pm - 7:25 pm Questions

7:25 pm - 7:45 pm **Jeffrey S. Cannon** MCT
University of California, Irvine

*Investigation of the Scope and Mechanism of the Palladium-Catalyzed Synthesis of
Enantioenriched Allylic Esters from Prochiral (Z)-Allylic Alcohol*

7:45 pm - 8:05 pm **Jennifer A. Dabrowski** MCT
Boston College

*Copper(I)-Catalyzed Enantioselective Allylic Substitution of Alkynylaluminum Reagents to
Allylic Phosphates*

8:05 pm - 8:25 pm **Derek M. Dalton** MCT
Colorado State University

*Favoring CO Migration in the Rhodium Catalyzed [2+2+2] Cycloaddition and Application to
Natural Product Synthesis*

8:25 pm - 8:45 pm **Juana Du** MCT
University of Wisconsin, Madison

Brønsted Acid Activation of Enones in Visible Light Photocatalysis

8:45 pm - 9:05 pm **Jason R. Zbieg** MCT
The University of Texas at Austin

*Controlling Selectivity in Novel Transition Metal Catalyzed Carbon-Carbon Bond Forming
Hydrogenations*

9:15 pm - 11:45 pm Reception Formal Lounge, Santa Rosa Hall

FRIDAY, JULY 15 *Presiding: P. Andrew Evans (The University of Liverpool)*

8:15 am - 9:00 am Continental breakfast Formal Lounge, Santa Rosa Hall

9:00 am - 9:45 am **Kate Ashton** Multicultural Center Theater (MCT)
Amgen

Structure-Based Drug Design: BACE, A Case Study

9:45 am - 9:55 am Questions

9:55 am - 10:15 am **Pin-Nan Cheng** MCT
 University of California, Irvine
 β -Sheet Macrocycles that Mimic and Antagonize Amyloid Aggregation and Reduce Amyloid Oligomer Cytotoxicity

10:15 am – 10:40 am Coffee Break Lagoon Plaza

10:40 am - 11:00 am **Angie Garcia** MCT
 University of California, Riverside
Progress in the Development of Therapeutic Drugs for CNS Disorders: Synthetic and Theoretical Studies of Cannabinoid Analogues

11:00 pm - 11:20 am **Derek M. Ryan** MCT
 University of Rochester
Self-assembly and Hydrogelation of Phenylalanine Derivatives

11:20 pm – 11:40 am **Daniel R. Dreyer** MCT
 The University of Texas at Austin
Graphite Oxide as a Metal-Free Catalyst: Forays into Carbocatalysis

11:40 pm - Noon **Group Photograph** Friendship Court/Lagoon Plaza

12:00 pm - 3:00 pm Lunch and Poster Session 1 Formal Lounge & Patio, Santa Rosa Hall

3:00 pm - 5:00 pm **WORKSHOP 1: Academic Life:** P. Andrew Evans MCT
 Gary A. Molander, University of Pennsylvania
 Sonja Krane, ACS Publications
 Miles A. Fabian, NIGMS

FRIDAY EVENING *Presiding: Thomas R. Pettus (University of California, Santa Barbara)*

5:00 pm - 6:30 pm Dinner Dining Room, Faculty Club

6:30 pm - 7:15 pm **Anna K. Mapp** Multicultural Center Theater (MCT)
 University of Michigan
Small Molecule Transcriptional Regulators

7:15 pm - 7:25 pm Questions

7:25 pm - 7:45 pm **Leah S. Witus** MCT
 University of California, Berkeley
Optimization of Protein Bioconjugation Reactions using Combinatorial Peptide Libraries

7:45 pm - 8:05 pm **Matthew E. Belowich** MCT
 Northwestern University
Template-Directed Synthesis of Polyrotaxanes Under Thermodynamic Control

- 8:05 pm - 8:25 pm **Lisa M. Johnson** MCT
 University of Wisconsin, Madison
Design of α/β Peptidic Foldamers that Mimic α Peptide Inhibitors of Viral Membrane Fusion
- 8:25 pm – 8:45 pm **Nathaniel I. Shank** MCT
 Carnegie Mellon University
Development of Fluorescent Probes for In Vivo Applications
- 8:45 pm - 9:05 pm **Matthew J. Kryger** MCT
 University of Illinois at Urbana-Champaign
Efforts Towards Mechanochemically Induced Self-Healing of Polymers
- 9:15 pm – 11:45 pm Reception Formal Lounge, Santa Rosa Hall
- SATURDAY, JULY 16** *Presiding: Gary A. Molander (University of Pennsylvania)*
- 8:15 am - 9:00 am Continental breakfast Formal Lounge, Santa Rosa Hall
- 9:00 am - 9:45 am **David J. Lythgoe** Multicultural Center Theater (MCT)
 Sanofi-Aventis
Process Chemistry in Pharmaceuticals
- 9:45 am - 9:55 am Questions
- 9:55 am - 10:15 am **Phillip A. Inglesby** MCT
 The University of Liverpool
Rhodium-Catalyzed Carbocyclizations and Ene-Cycloisomerizations of Alkenylidenecyclopropanes: Total Synthesis of Complex Natural Products
- 10:15 am – 10:40 am Coffee Break Lagoon Plaza
- 10:40 am - 11:00 am **Jennifer Ciesielski** MCT
 University of Rochester
Scope and Limitations of a β -Iodoallenolate Cyclization; Efforts Towards the Total Synthesis of Phomactin A
- 11:00 am - 11:20 am **W. Christopher Boyd** MCT
 University of California, Berkeley
Cobalt-Mediated Vinylic C-H Functionalization of Alkenes
- 11:20 pm – 11:40 am **Peter K. Dornan** MCT
 University of Toronto
Rhodium-Catalyzed Approaches to Medium-Sized Heterocycles
- 11:40 pm - 12:00 am **Sarah M. Bronner** MCT
 University of California, Los Angeles
Indolyne Regioselectivities and Synthetic Application

12:15 pm - 3:00 pm Lunch and Poster Session 2 Formal Lounge & Patio, Santa Rosa Hall
 3:00 pm – 5:00 pm **WORKSHOP 2: Industrial Life:** Gary A. Molander MCT
 Aaron R. Thornton, Aldrich Chemical Co.
 Catherine A. Faler, ExxonMobil Chemical
 Daniel D. Vanderlende, Dow Chemicals
 6:00 pm - 11:00 pm BBQ Dining Room, Faculty Club

SUNDAY, JULY 17 *Presiding: P. Andrew Evans (The University of Liverpool)*

8:15 am - 9:00 am Continental breakfast Formal Lounge, Santa Rosa Hall
 9:00 am - 9:45 am **Carlos G. Gutiérrez** Multicultural Center Theater (MCT)
 California State University, Los Angeles

Proton as Protecting Group: Discriminating Between Amine Functionalities in Polyamines

9:45 am - 9:55 am Questions
 9:55 am - 10:15 am **Andrey Solovyev** MCT
 University of Pittsburgh

Chemistry of Complexes between N-Heterocyclic Carbenes and Boranes

10:15 am – 10:40 am Coffee Break Lagoon Plaza
 10:40 am - 11:00 am **Svitlana Kulyk** MCT
 Temple University

Taming the Complexity of Enyne-Pyridone Photocycloadditions

11:00 pm - 11:20 pm **Vinson R Espejo** MCT
 University of Utah

Synthetic Studies Towards Epidithiodiketopiperazine Natural Products

11:20 pm – 11:40 pm **Danielle M. Schultz** MCT
 University of Michigan

Recent Advances in Intramolecular Alkene Carboamination Reactions

11:40 pm - 12:00 am **Erika A. Crane** MCT
 Northwestern University

Enantioselective Synthesis of (-)-Exiguolide by Iterative Stereoselective Dioxinone-Directed Prins Cyclizations

12:15 pm - 2:00 pm Lunch Formal Lounge, Santa Rosa Hall
 2:00 pm Depart

FRIDAY, JULY 15: POSTER SESSION 1

- 1. Abela, Alexander R.; University of California, Santa Barbara**
Room Temperature C-H Activation Catalyzed by Cationic Palladium
- 2. Andrews, Robert S.; University of North Carolina at Chapel Hill**
Visible Light-Mediated Photoreduction of Glycosyl Bromides for C-Glycoside Synthesis
- 3. Baker, Matthew B.; University of Florida**
Selective Desymmetrization of a Benzotrifuranone Scaffold
- 4. Burke, Daniel J.; University of California, Santa Barbara**
Ketenes in the Synthesis and Functionalization of Polymers
- 5. Crapster, J. Aaron; University of Wisconsin-Madison**
The Design and Construction of Novel Discretely Folded Peptoids
- 6. Greene, Allison K.; Boston College**
New insights into Palladium Catalyzed Intramolecular Arylation Reactions for the Synthesis of Geodesic Polyarenes
- 7. Grenning, Alexander J.; The University of Kansas**
New Approaches to Allylic Alkylation: Decarboxylative Allylation and Deacylative Allylation
- 8. Hanhan, Nadine V.; University of California, Davis**
Catalytic Asymmetric Synthesis of Hydroxy Oxindoles and Spirooxindoles
- 9. Huang, Shenlin; University of California, Santa Barbara**
Total Synthesis of (+)-Korupensamine B and related natural products via an Atropselective Intermolecular Biaryl Coupling
- 10. Joshi-Pangu, Amruta; The City College of New York**
Nickel-Catalyzed Cross-Couplings of Secondary and Tertiary Alkyl Nucleophiles with Aryl Halides

- 11. Khedri, Zahra; University of California, Davis**
Chemoenzymatic Synthesis of Structurally Defined Sialic Acid Containing Sialosides and Biological Studies of their Functions
- 12. Kramer, Jessica R.; University of California, Los Angeles**
Glycopolypeptides by Polymerization of Glycosylated N-Carboxyanhydrides
- 13. Liu, Ruzhang; University of Kansas**
Synthetic Studies Toward Pinnaic Acid and Alkaloid 205B
- 14. Lutz, Kelly E.; Northwestern University**
Traceless Bond Construction through the [3,3] Sigmatropic Rearrangement of N-Allylhydrazones
- 15. Osbourn, Joshua M.; University of Pittsburgh**
The Thermal Allene-yne [2+2] Cycloaddition Reaction: Exploring the Mechanism and Application to Carbocyclic Spirooxindoles

SATURDAY, JULY 16: POSTER SESSION 2

- 16. Patil, Dadasaheb V.; Georgia Institute of Technology**
The Design and Application of Interesting Versions of the Nazarov Cyclization in Natural Product Synthesis
- 17. Ramadhar, Timothy R.; University of Toronto**
Synthetic and Theoretical Investigations of Aryl- and Aliphatic-Claisen Rearrangements
- 18. Ratnikov, Maxim O.; University of Maryland**
Oxidation of Phenols as Versatile Methodology in Building Heterocycles
- 19. Shrestha, Ruja; University of Rochester**
Nickel-Catalyzed Reductive Conjugate Addition of Organic Halides to Enones to Form Silyl Enol Ethers

- 20. Sikervar, Vikas, Purdue University**
Synthesis of Highly Substituted A-ring 1,25-Dihydroxyvitamin D3 Analogs from Diene Sulfone
- 21. Smith, Genessa M.; Colorado State University**
Progress Toward the Total Synthesis of Citrinadins A & B
- 22. Steward, Kimberly M.; University of North Carolina at Chapel Hill**
Strategies for the Synthesis and Use of β -Stereogenic α -Keto Esters
- 23. Stivala, Craig E.; University of California, Santa Barbara**
Direct Enantioselective Alkylation of Arylacetic Acids with Chiral Lithium Amides as Traceless Chiral Auxiliaries
- 24. Tan, Yichen; University of Illinois at Urbana at Urbana-Champaign**
Pd-Catalyzed Amination of C-H Bonds with Oxime Ester and Mechanistic Studies on Pd-Catalyzed Direct Arylation
- 25. Taylor, Buck L. H.; University of California, Irvine**
Stereospecific Cross-Coupling of Alkyl Ethers to Form Tertiary Stereocenters
- 26. Topczewski, Joseph J.; University of Iowa**
Cascade Cyclizations and the Schweinfurthins
- 27. Wall, Brian D.; Johns Hopkins University**
Design and Synthesis of π -Conjugated Oligopeptides to Tune π - π Interactions in Self-Assembled Bioelectronic Materials
- 28. Watkins, Davita L.; University of Memphis**
Synthesis and Photochromism Studies of Angled Spironaphthooxazine Dimer
- 29. Worthy, Amanda D.; Boston College**
Regio- and Stereoselective Reactions Using a Catalytic Directing Group