

DOC Graduate Research Symposium

Boston College, July 15-18, 2010

THURSDAY, JULY 15

3:00 pm to 6:30 pm Arrival and Dormitory Check-in at the 110 St Thomas More Hall
BC Welcome Center

5:30 pm - 6:30 pm Registration and Dinner Merkert Foyer

THURSDAY EVENING *Presiding: P. Andrew Evans (The University of Liverpool)*

6:30 pm - 7:15 pm **Amir H. Hoveyda** Merkert 127
Boston College

Recent Adventures in Catalyst Discovery and Development

7:15 pm - 7:25 pm Questions

7:25 pm - 7:45 pm **Brett P. Fors** Merkert 127
Massachusetts Institute of Technology

Development of Pd Catalysts for C–N Cross-Coupling Reactions

7:45 pm - 7:50 pm Questions

7:50 pm - 8:00 pm **Zarko V. Boskovic** Merkert 127
University of California - Santa Barbara

A Shift In Regioselectivity of Copper Hydride Catalyzed Reductions: An Inroad to Chiral Allylic Alcohols

8:00 pm - 8:05 pm Questions

8:05 pm - 8:25 pm **Ye Zhu** Merkert 127
Texas A&M University

Asymmetric Hydrogenation of Acid Sensitive Vinyl Ethers with Iridium Catalyst and the Relative Metal Hydride Acidity Study

8:25 pm - 8:30 pm Questions

8:30 pm – 8:40 pm **Aaron R. Thornton** Merkert 127
Emory University

Metallonitrene/Alkyne Cascade Reactions: Development of a Versatile Process for Organic Synthesis

8:40 pm - 8:45 pm Questions

8:45 pm - 9:05 pm **Erica L. Lanni** Merkert 127
University of Michigan

Evidence for Ligand-Dependent Mechanistic Changes in Nickel-Catalyzed Chain-Growth Polymerizations

9:05 pm - 9:10 pm Questions

9:10 pm – 11:45 pm Reception Merkert Foyer

FRIDAY, JULY 16 *Presiding: Gary Molander (University of Pennsylvania)*

8:30 am - 9:00 am Continental breakfast Merkert 129

9:00 am - 9:45 am **Anabella Villalobos** Merkert 127
Pfizer Pharmaceuticals

*Medicinal Chemistry Design: Development of a CNS Multi Parameter Optimization (MPO)
Design Tool*

9:45 am - 9:55 am Questions

9:55 am - 10:15 am **Trisha L. Andrew** Merkert 127
Massachusetts Institute of Technology

Structure-Property Relationships in the Design of Organic Chromophores

10:15 am - 10:20 am Questions

10:20 am - 10:40 am Coffee Break Merkert 129

10:40 am - 10:50 am **Gregory B. Kuzmanich** Merkert 127
University of California - Los Angeles

*Photonic Amplification by a Singlet-State Quantum Chain Reaction in the
Photodecarbonylation of Crystalline Diarylcyclopropanones*

10:50 am - 10:55 am Questions

10:55 am - 11:15 am **Semra Colak** Merkert 127
University of Massachusetts - Amherst

Novel Dually Functional Zwitterionic Polymers

11:15 am - 11:20 am Questions

11:20 am - 11:30 am **Natalie J. Smith** Merkert 127
Boston College

*Progress Toward Pentabenzocorannulene: A Potential Stepping Stone to Carbon
Nanotubes*

11:30 am - 11:35 am Questions

11:35 am - Noon **Group Photograph** Merkert Foyer

12:00 pm - 3:00 pm Lunch and Poster Session 1 Merkert Foyer

3:00 pm - 5:00 pm **WORKSHOP 1: Academic Life:** P. Andrew Evans Merkert 127
Larry Scott, Boston College
Darla Henderson, ACS Publications
John Schwab, NIGMS

FRIDAY EVENING *Presiding: Larry Scott (Boston College)*

5:00 pm - 6:30 pm Dinner Walsh Function Room

6:30 pm - 7:15 pm **Suzanne Walker** Merkert 127

Harvard University

New Targets for Antibiotics

7:15 pm - 7:25 pm Questions

7:25 pm - 7:45 pm **Timothy A. Wencewicz** Merkert 127

University of Notre Dame

Synthetic Utility and Application of Hydroxamic Acids in the Design and Development of New Antibiotics

7:45 pm - 7:50 pm Questions

7:50 pm - 8:00 pm **Alison C. Donnelly** Merkert 127

The University of Kansas

Engineering an Antibiotic to Fight Cancer

8:00 pm - 8:05 pm Questions

8:05 pm - 8:25 pm **Michele R. Richards** Merkert 127

University of Alberta

Conformational Analysis of Galactofuranosides

8:25 pm - 8:30 pm Questions

8:30 pm – 8:40 pm **Pamela G. Cohn** Merkert 127

University of Florida

Synthesis and Applications of Push-Pull Purines

8:40 pm - 8:45 pm Questions

8:45 pm - 9:05 pm **Shane L. Mangold** Merkert 127

University of Wisconsin - Madison

Design and Synthesis of Small Molecule Inhibitors of the Lectin DC-SIGN: Implications for the Inhibition of Pathogen Dissemination in Dendritic Cells

9:05 pm - 9:10 pm Questions

9:10 pm – 11:45 pm Reception Merkert Foyer

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

8:30 am - 9:00 am Continental breakfast Merkert 129

9:00 am - 9:45 am **Alfredo Castro** Merkert 127
Infinity Pharmaceuticals

Harnessing Nature's Hedgehog Pathway Inhibitor, Cyclopamine, to make a Drug

9:45 am - 9:55 am Questions

9:55 am - 10:15 am **Stephen S. Gonzales** Merkert 127
University of Pennsylvania

Synthetic Adventures with (+)-Nodulisporic Acid A

10:15 am - 10:20 am Questions

10:20 am – 10:40 am Coffee Break Merkert 129

10:40 am - 10:50 am **Fang Wang** Merkert 127
University of Southern California

Trifluoromethylation of Cinchona Alkaloids: Emergence of a New Conformational Stabilizer and Indicator

10:50 am - 10:55 am Questions

10:55 pm - 11:15 am **Douglas C. Friedman** Merkert 127
Northwestern University

A Light-Gated STOP–GO Molecular Shuttle

11:15 pm - 11:20 am Questions

11:20 pm – 11:30 am **David K. Bedke** Merkert 127
University of California - Irvine

Syntheses of Chlorosulfolipids

11:30 pm - 11:35 am Questions

11:35 pm - 11:55 am **Jason C. Green** Merkert 127
University of California - Santa Barbara

Synthesis of Cedrenes by Oxidative Dearomatization

11:55 am - Noon Questions

12:15 pm - 3:00 pm Lunch and Poster Session 2 Merkert Foyer

3:00 pm – 5:00 pm **WORKSHOP 2: Industrial Life:** Gary A. Molander Merkert 127
Josephine S. Nakhla, Aldrich Chemical Co.
Elizabeth P. Cormier, FDA
Daniel D. Vanderlende, Dow Chemicals

6:00 pm - 22:30 pm Boston-at-Night Buses from Merkert

SUNDAY, JULY 18 *Presiding: Gary Molander (University of Pennsylvania)*

8:30 am - 9:00 am Continental breakfast Merkert 129

9:00 am - 9:45 am **Richard D. Broene** Merkert 127
Bowdoin College

Ligand Control in Cobalt-Mediated alpha Olefin Dimerization.

9:45 am - 9:55 am Questions

9:55 am - 10:15 am **Laura T. Kilman** Merkert 127
Boston College

Enantioselective Platinum-Catalyzed Diboration of Unsaturated Hydrocarbons: Versatile Tools for Synthesis

10:15 am - 10:20 am Questions

10:20 am - 10:40 am Coffee Break Merkert 129

10:40 am - 10:50 am **Michael A. Ischay** Merkert 127
University of Wisconsin - Madison

Visible Light Photocatalysis of Cyclobutane-Forming Reactions

10:50 am - 10:55 am Questions

10:55 pm - 11:15 pm **Lei Liu** Merkert 127
University of Pittsburgh

Structurally and Stereochemically Diverse Tetrahydropyran Synthesis via Oxidative C-H Bond Cleavage

11:15 pm - 11:20 pm Questions

11:20 pm - 11:30 pm **Vanessa M. Marx** Merkert 127
Dalhousie University

Recent Advances in the Interrupted Nazarov Cyclization of Allenyl Vinyl Ketones

11:30 pm - 11:35 pm Questions

11:35 pm - 11:55 am **Yili Shi** Merkert 127
University of California - Irvine

Catalyzed Catalysis Using Lewis Acidic Gold and Lewis Basic Palladium: Synthesis of Substituted Butenolides and Isocoumarins

11:55 am - Noon Questions

12:00 pm - 2:00 pm Lunch Merkert Foyer

14:00 Depart

FRIDAY, JULY 16: POSTER SESSION 1

- 1. Alnasleh, Bassam K.; University of Kansas**
Formal Nucleophilic Substitution of Bromo Cyclopropanes
- 2. Baranczak, Aleksandra E.; Vanderbilt University**
Progress Toward the Total Synthesis of Dideoxy Lomaiviticinone
- 3. Chang, Jonah J.; University of California, Los Angeles**
Enantiospecific Formal Total Synthesis of (+)-Fawcettimine
- 4. Cong, Huan; Boston University**
Electron Transfer-Initiated Diels-Alder Cycloadditions of 2'-Hydroxychalcones
- 5. Devarie Baez, Nelmi O.; Washington State University**
Application of S-Nitrosothiols in Organic Synthesis.
- 6. Emerson, Christopher R.; Oregon State University**
The Role of Functionalized Chiral Carbenoids in Stereospecific Reagent Controlled Homologation: A Synthesis of Epibatidine
- 7. Finke, Aaron; University of Illinois at Urbana-Champaign**
N-AlkylDABCOonium Trihalozincates: Privileged Scaffolds for Non-Centrosymmetric Solids
- 8. Hayden, Lauren E.; Georgia Tech.**
Conjugated Oligomers for Band Gap Manipulation in Organic Field Effect Transistors
- 9. Howell, Jennifer; Colorado State University**
Progress Towards the Total Synthesis of Tetrapetalone A
- 10. Kelley, Brandon; University of Pennsylvania**
Nucleophilic Ring-Opening of an Ethynyl Aziridine and its Application Towards Total Synthesis

11. Kelly, Brendan; Columbia University

Development of a Novel Paradigm for Nucleophilic Substitution: Aromatic Cation Activation of Alcohols

12. Klauber, Eric; Rutgers University

Development of Hydrogen-Bonding Catalysts as Anion Binders: Applied to the Kinetic Resolution of Amines

13. Kraye, Michael; North Carolina State University

De Novo Synthesis of Stable Bacteriochlorins Including Bacteriochlorophyll Analogues

14. Li, Wei; University of Michigan

New Strategies for Efficient and Selective Coupling Reactions

15. Lightburn, Thomas; Boston College

Catalytic Scaffolding Ligands: An Efficient Strategy for Directing Reactions

16. Mundal, Devon; Northwestern University

New Reactions from Under-Explored Compounds: The Chemistry of N-Allylhydrazones

SATURDAY, JULY 17: POSTER SESSION 2

17. Nibbs, Antoinette; Northwestern University

Catalytic Asymmetric Alkylation of Substituted Isoflavanones

18. Osman, Sami; University of Pittsburgh

Studies on FR901464 and analogues

19. Park, Jongwoo; University of Florida

Self-Assembled Dinuclear Salen Complexes through Hydrogen Bonding for Asymmetric Catalysis

20. Prokofjevs, Aleksandrs; University of Michigan

Boremium Ions for C-H Bond Functionalization

- 21. Sharma, Indrajeet, Wayne State University**
Novel Methodologies for Peptide and Peptide Thioester Synthesis
- 22. Singh, Swapnil; Temple University**
An Efficient Asymmetric Synthesis of Silanediol Protease Inhibitors
- 23. Smith, Sean M.; University of Nebraska-Lincoln**
Catalytic Asymmetric Hydroboration: Remarkably Efficient Enantioswitching Strategies
- 24. Vieira, Erika; Boston College**
Development of a Catalytic Enantioselective Allylation of Imines
- 25. Wang, Lihong; University of Alberta**
Formation of Carbocycles by Intramolecular Conjugate Displacement: Scope and Mechanistic Insights
- 26. Wommack, Andrew J.; Boston College**
Bidirectional Synthesis of Ketones from Monomeric Formaldehyde by Catalytic C-H Insertion with Diazoalkanes
- 27. Wong, Douglas; Louisiana State University**
Synthetic Efforts Toward Aboa and Apoa, Two Amino Acids Characteristic of the Theonellamides
- 28. Young, Andrew; University of Illinois, Urbana-Champaign**
Intermolecular Allylic C-H Alkylation of Unactivated alpha-Olefins
- 29. Zhang, Su; Arizona State University**
Exploring the Functional Properties of Unnatural Nucleic Acids
- 30. Zhou, Quan; Brandeis University**
Synthetic Progress toward Parnafungins
- 31. Zottig, Victor; University of Virginia**
The Reactivity and Properties of Dihapto-Coordinated Phenols