2025

Graduate Research Symposium

Division of Organic Chemistry
American Chemical Society

SAN DIEGO STATE UNIVERSITY 1897

GRADUATE RESEARCH SYMPOSIUM

July 17 - 20, 2025

DOC Graduate Research Symposium

San Diego State University, San Diego, CA, July 17-20, 2025

THURSDAY, JULY 17

1:30 pm – 4:30 pm Registration and **Check-In – Tula Center**

2:30 pm – 4:30 pm Industrial Poster Session **– Tula Center**

4:30 pm – 5:45 pm Pizza Dinner – **Tula Center**

THURSDAY EVENING ***Presiding: Byron Purse – San Diego State*** **– Tula Center**

5:45 pm – 6:00 pm **Welcome – P. Andrew Evans**

6:00 pm – 6:50 pm **Andy McNally – Colorado State University**
Transforming Azines – Inside and Out

6:50 pm – 7:10 pm **Katherine Burton**
Princeton University
Rapid Access to 3-Substituted Bicyclo[1.1.1]pentanes

7:10 pm – 7:30 pm **Matthew Elardo**
University of Washington
Spectroscopic Analysis of Force-Induced Hardy-Cope Rearrangements in Bullvalene-Centered Polymers

7:30 pm – 7:50 pm **Julia Noel**
University of Chicago
The Order of the Rings: Strategies and Tactics Toward the Total Synthesis of Cinncassiol F

7:50 pm – 8:10 pm **Marcus Sak**
Harvard University
Catalytic Principles in Phosphonium Dealkylation Towards P-Stereogenic Compounds

8:10 pm – 8:30 pm **Cade MacAllister**
University of Wisconsin-Madison
Oxygen Migration into Carbon–Carbon Single Bonds by Photochemical Oxidation

8:45 pm – 11:30 pm Reception and **Poster Session 1 – Tula Center**

FRIDAY, JULY 18 ***Presiding: Nicola Webb, Briston Myers Squibb*** **– Tula Center**

7:45 am – 9:00 am Breakfast (Students) – **The Garden**

9:00 am – 9:40 am **David Thaisrivongs – Merck**
The Largest Small Molecule: Design of Convergent Biocatalytic Cascades for the Manufacture of Enlicitide

9:40 am – 10:00 am **Samson Zacate**
Cornell University
Catalyst-Controlled Regiodivergent Oxidation of Unsymmetrical Diols

10:00 am – 10:20 am **Nicholle Chew**
Indiana University Bloomington
Probing Chemoselectivity through new Redox-Switchable Catalyst Design

10:20 am – 10:50 am Coffee Break – **Tula Center**

10:50 am – 11:40 am **Benjamin Cravatt – Scripps Research**
Activity-Based Proteomics – Target and Ligand Discovery on a Global Scale

11:40 pm – 12:00 pm **Manik Sharma**
Emory University
Enzymatic Halide Recycling Enabled by Vanadium-Dependent Haloperoxidases for Biocatalytic Reaction Development

12:00 pm – 12:15 pm **Group Photograph – TBA**

12:15 pm – 2:30 pm Lunch and **Poster Session 1 – Tula Center**

WORKSHOPS: *Presiding – Scott Sutton* – Pfizer

WORKSHOP 1: Academia and Entrepreneurship

2:30 pm – 3:00 pm **P. Andrew Evans – Academic Life**
Navigating Academic Life in a Research 1 Chemistry Department

3:00 pm – 3:30 pm **Erick M. Carreira – ACS Publications**
Ten Tips for Scholarly Publishing

3:30 pm – 4:00 pm **Chuck Frazier – Temporal Agriculture**
Building from Scratch: Startups, Entrepreneurship, and Transforming Ideas into Successful Products

4:00 pm – 4:15 pm Coffee Break – **Tula Center**

4:15 pm – 5:15 pm **WORKSHOP 2: Academic Life**

Nicholas Ball (Pomona), Erick Carreira (ETH), Christina Cooley (Trinity), Benjamin Cravatt (Scripps), P. Andrew Evans (Queen's), Rudy Jazzar (SDSU), Julia Kalow (Northwestern), Andy McNally (Colorado State), Byron Purse (SDSU),

5:15 pm – 6:30 pm Dinner – **Student Union-Goldberg Courtyard**

FRIDAY EVENING *Presiding*: *Hillary Nguyen,* Johnson and Johnson – Tula Center

6:30 pm – 7:10 pm **Evan Hurlow – Cambrex**
Development and Demonstration of an Organocatalyzed Asymmetric Povarov Cyclization Featuring Exceptionally Low Catalyst Loading

7:10 pm – 7:30 pm **Ivan Hernandez**
University of California, Santa Barbara
Structural Investigations of Phthalazinone Derivatives as Allosteric Inhibitors of Human DNA Methyltransferase 3A

7:45 – 9:15 pm **WORKSHOP 3: Industrial Life**

Please see the assignments in the tables at the end of the document.

9:15 pm – 11:30 pm Reception and **Poster Session 2 – Tula Center**

SATURDAY, JULY 19 ***Presiding: Christina Cooley, Trinity University*** **– Tula Center**

7:45 am – 9:00 am Breakfast (Students) – **The Garden**

9:00 am – 9:40 am **Thomas Stratton and Kenneth Matthews – Gilead**

Lenacapavir: A Story of Innovation from Discovery through Commercialization

9:40 am – 10:00 am **Gabriella Cooper**

University of California, Los Angeles

Heterocycle-Mediated Hydrogen Bond Networks Enable Passive Permeability of Peptidomimetic Macrobicycles

10:00 am – 10:20 am **Juntao Sun**

Scripps Research

A General Platform for Cu(II)-Catalyzed Hydrofunctionalization of Unactivated Alkynes via π-Lewis Acid Activation

10:20 am – 10:40 am Coffee Break – **Tula Center**

10:40 am – 11:30 am **Joseph Kincaid – Pharmablock**

MT Scale Continuous Flow Manufacturing in ACS Green Chemistry Award-Winning Projects

11:30 am – 11:50 am **Andrew Smith**

University of California, Berkeley

Simple Generalizations of Stereoselectivity Drive the Algorithmic Discovery of New Enantioselective Solutions

11:50 am – 12:10 pm **Noah Bartfield**

Yale University

Total Synthesis of Macrocyclic Haloimidazole Natural Products

12:10 am – 12:30 pm **Cody Ng**

University of British Columbia

Novel Visible-Light-Mediated [2+2]-Cycloadditions for the Synthesis of Azetidines

12:30 pm – 2:30 pm Lunch and **Poster Session 2 – Tula Center**

SATURDAY AFTERNOON ***Presiding: Jason Green, Vividion*** **– Tula Center**

2:30 pm – 3:20 pm **Nicholas Ball – Pomona College**

Expanding the Toolbox of Sulfur-Fluoride Exchange (SuFEx)

3:20 pm – 3:40 pm **Kyra Samony**

Temple University

Dual Hydroxytrifluoroethylation and Trifluoroacetylation Strategies via Designer Masked Reagents

3:40 pm – 4:10 pm Coffee Break **– Tula Center**

4:10 pm – 4:30 pm **Sumeet Sahoo**
Purdue University
Dicobalt-Catalyzed N=N Coupling Reactions of Tertiary Alkyl Azides to Form Azoalkanes

4:30 pm – 4:50 pm **Connor Saludares**
University of Texas at Austin
Asymmetric Ruthenium-Catalyzed Carbonyl Allylation and tert-Prenylation via Hydrogen Transfer to π-Unsaturated Hydrocarbon: Application Toward the Synthesis of Bafilomycin A1

4:50 pm – 5:10 pm **Justine Drappeau**
University of North Carolina at Chapel Hill
Site-Selective C(sp3)–H Functionalization of Diverse Methyl (Hetero)arenes Using Amidyl Radicals

5:10 pm – 5:30 pm **Cristian Vasquez Tapia Vera**
Colorado State University
Direct Aziridine Synthesis through a New Base-Promoted Oxidative Cascade Process

5:30 pm – 8:30 pm Dinner TBD

8:30 pm Drinks and Games: **Aztecs Lanes**

SUNDAY, JULY 20 ***Presiding: Rudy Jazzar, SDSU*** **– Tula Center**

7:45 am – 9:00 am Breakfast (Students) – **The Garden**

9:00 am – 9:50 am **Julia Kalow – Northwestern University**
Molecular Engineering in Four Dimensions with Dynamic Polymer Networks

9:50 am – 10:10 am **Bo Couture**
University of Texas at Dallas
Biocatalytic C(sp3)−H Pyridomethylation of N-Heterocycles via Enzymatic Activation of Pyridyltriazoles

10:10 am – 10:40 am **Achyut Ranjan**
Texas A&M University
Synergizing Computation & Experiment for Mechanistic Insights and Sustainable Reaction Design

10:40 am – 11:00 am Coffee Break – **Tula Center**

11:00 am – 11:20 am **Leah Patterson**
University of California, Davis
Structurally Diverse Silyl Lipids to Modulate Liposome and Lipid Nanoparticle Properties for mRNA Delivery

11:20 am – 11:40 am **Surya Pratap Singh**
University of Oklahoma
Carbenes as Catalytic Frontiers: Unlocking Sustainable Pathways to Stereoselective

Glycosylations

11:40 am – 12:00 pm **Taylor Spiller**
University of Michigan
Copper Mediated Functionalization of Aryl Halides via Silver Nanoparticle Generated Aryl Radicals

12:00 pm – 1:00 pm Lunch – **Tula Center**

12:00 pm – 2:00 pm Check out and Depart

THURSDAY PM & FRIDAY **– POSTER SESSION 1 – Tula Center**

1. **Kyle Abo – University of Illinois, Urbana-Champaign**
Development of a Library of Novel Anticancer Electrophilic Compounds via the Complexity-to-Diversity Approach

2. **Jón Buldt – University of California, Davis**
How Mechanism Drives Innovation in Strain-Release Pentafluorosulfanylation

3. **Matthew Carson – University of Pennsylvania**
Total Synthesis of Aporphine Alkaloids via Photocatalytic Oxidative Phenol Coupling and Biological Evaluation at the Serotonin 5-HT2 and Adrenergic α1A Receptors

4. **Minh Y Dang – University of Wisconsin-Madison**
Photochemical Engines for Alkene Dicarbofunctionalizations

5. **Nhu Dang – San Diego State University**
Ni-Doped Perovskite for Photocatalytic Benzylic C–H Amination

6. **Justin DeBow – University of California, Riverside**
Milder Generation of Aryloxenium Ions via Anchimeric Assistance and Total Synthesis of Eudesmanolide Sesquiterpene Lactone Adducts

7. **Brady Dehnert – University of California, Los Angeles**
Synthesis through C(sp3)–C(sp²) Bond Scission

8. **Amethyst Demeritte – Montana State University**
Design, Synthesis and Biological Evaluation of Imidazo[1,2-α]pyrimidinium Derivatives

9. **Vivek Gangadharan Pillai – University of Rochester**
Ligand Denticity and Substrate Chelating Ability Interact to Control Chemoselectivity in Nickel-Catalyzed Amide Cross-Coupling

10. **Elguja Gojashvili – San Diego State University**
Rationalizing Steric and Electronic Parameters in the Assembly of Carbene Copper Hydride Nanoclusters

11. **Dayne Goss – Stanford University**
The Synthesis and Biological Evaluation of N1-Modified Saxitoxin Congeners

12. **Diego Granados – Princeton University**
Iridium Polypyridyl Carboxylates as Excited-State PCET Catalysts for the Functionalization of Unactivated C–H Bonds

13. **Palak Gupta – University of Florida**

Chemical Synthesis of Tagged and Natural Phosphatidylinositol Phosphates (PIPs)

14. Ryan Harbit – Florida State University
Synthesis of Receptor Selective Psychedelics

15. Many Hemati – Boston College
Metalloradical Catalysis for Enantioselective Synthesis of β-Lactams

16. Beeta Heydari – San Diego State University
Leveraging Conformational Control in Diarylamines to Obtain Selective HER4 Inhibitors in Ovarian Cancer

17. Han-Hsiang Hsu – Texas A&M University
Functionalization of Pyridines at the C4 Position via Metalation and Capture

18. Xiaoyu Huo – Texas Tech University
Copper(II) Quinoxolinol Complexes for Catalytic Reactions of Alcohols

19. Sal Kargbo – University of Minnesota
Energy-Activated and Diversifiable Aryne Precursors from Carboxylic Acids

20. Lebogang Kgoadi – University of Deleware
Ni-Catalyzed Synthesis of Axially-Chiral Benzamides via Cross-Electrophile Coupling

21. Dawson Konowalchuk – University of Alberta
Chemo- and Enantioselective Cross-Coupling of Symmetrical Dihaloalkenes

22. Yihuan Lai – Cornell University
Electrochemical Approaches to Reductive Transformation in Organic Synthesis

23. Mariami Basilaia – San Diego State University
Developing atroposelective methodologies towards pharmaceutically relevant scaffolds

***FRIDAY PM & SATURDAY* – POSTER SESSION 2 – Tula Center**

24. Windsor Lundy – University of Deleware
Enantioselective α-Arylation of Amino Acid Derived Alkylpyridinium Salts

25. Kameron Medine – University of Illinois, Urbana-Champaign
Automated Modular Synthesis of Fatty Acids

26. Ian Merski – University of Utah
Efforts Towards the Total Synthesis of the Neoansamycins and Ansalactams

27. Julianna Mouat – University of Wisconsin-Madison
Translation of Nickel-Catalyzed C(sp2)-C(sp3) Cross-Electrophile Coupling to Non-Amide Solvents

28. Chandler Nelson – University of California, Santa Barbara
Environmentally Friendly Miyaura Borylations Allowing for Green, 1-pot Borylation/Suzuki–Miyaura Couplings

29. Liam O'Grady – University of Deleware
The Total Synthesis and Works of (–)-Psiguadial A

30. Marcus Vinicius Pinto Pereira Junior – Yale University
Harnessing Peptide-Based Thiols for Enantioselective H-Atom Transfer Reactions

31. **Luka Pochkhua – San Diego State University**
Electrochemical Synthesis of Hydropyridines and Mechanistic Insights into PCET in N-Alkylated Pyridinium Amides

32. **Jarett Posz – Indiana University**
Developing Methods to Access Boron-Based Building Blocks

33. **Carlos Quintanilla – University of California, Santa Barbara**
Chiral Bifunctional Phosphine Ligands Enable Cooperative Asymmetric Au(I) Catalysis

34. **Divya Radhakrishnan – University of Florida**
Enantioselective Alkynylation of 2-Mercaptopyrimidine

35. **Angela Ruiz – Indiana University**
Studies Toward the Total Synthesis of Cyathin D

36. **Georgia Scherer – University of California, Los Angeles**
Strained Cyclic 7-Membered Allenes as Building Blocks for Heterocycle Synthesis

37. **Katie Scotchburn – University of Toronto**
Synthesis of Cyclopropylamine Derivatives from Cyclopropanols and Sulfinamides via Electrophilic Homoenolate Chemistry

38. **Ana Shalamberidze – San Diego State University**
Design and Synthesis of Fluorescent Nucleoside Analogues for Detection of Noncanonical Nucleobases in DNA

39. **Emily Sherman – University of North Carolina, Chapel Hill**
Accessing Complex Scaffolds via Crystallization-Driven Stereoconvergent Platform

40. **Matthew Spock – University of California, Davis**
Identification of Stereodivergent C-H Directing Abilities of Sulfonimidamides via the Synthesis of N-Sulfonimidoyl Lactams in the Castagnoli-Cushman Reaction

41. **Cole Stearns – University of Florida**
Mixed Amide Paracyclophane Assemblies Emulating Supramolecular Copolymers

42. **Jason Wu – Cornell University**
Cross Carbonyl-Olefin Metathesis (XCOM) of Unactivated Olefins

43. **Jihyeon Yeo – Yale University**
Co(III)-Catalyzed Sequential C–H Bond Addition to Dienes and One-Carbon Electrophiles: Syntheses of α-Quaternary Aldehydes and Amides

44. **Yiwei Zhang – Brandeis University**
Total Synthesis of Enteropeptin by Catalytic Markovnikov Hydrothiolation

45. **Victoria Zottarelli – University of Washington**
Contra-Thermodynamic Isomerization of Alkenes and Alkynes Facilitated by Selenium Catalysis

46. **Bahar Heydari – San Diego State University**
Leveraging Atropisomerism in Quinolones to Obtain a Mutant Selective c-KIT Inhibitor in GIST

47. **Emily Latif – University of California, San Diego**
Synthesis and Photochemical Reactivity of Novel Frustrated Lewis Pair Polymers

Industrial Workshop Panels – Organized by Student *Last* Name

Group A (*Angeles*)	**Group B** (*Cooley*)	**Group C** (*Evans*)	**Group D** (*Purse*)
Last Name: *Abo – Gogoi*	***Last Name:*** *Gojiashvili – MacAllister*	***Last Name:*** *Medine – Samony*	***Last Name:*** *Scherer– Zottarelli*
Location: Patio	*Location:* Aztlan	*Location:* Lecture Hall	*Location:* Metzli
Jaika Doerfler – Amgen	Joseph Kincaid – Pharmablock	Evan Hurlow – Snapdragon	Chuck Frazier – Temporal Ag.
Johnny Lee – Pfizer	Daniel Tao – Abbvie	Nicola Webb – BMS	Jesus Moreno – BMS
Hillary Nguyen – Janssen	Craig Zificsak – Adesis	Thomas Lyons – Takeda	Kenneth Matthews – Gilead
Sal Bernardino – Lilly	Annabel Ansel – Vividion	Luke Hanna – Janssen	Robert Dyer – Adesis
Thomas Stratton – Gilead	Ethan Wappes – Merck	Kevin Cole – Lilly	Donna Hayes – Merck
Jing Li – PharmaBlock	Andreas Termin – Vertex	Jennifer Allen – Amgen	Scott Sutton – Pfizer
Jitendra Gurjar – Novartis	Ving Lee – UDC	David Thaisrivongs – Merck	Ana Bulger – Amgen
Raymond Turro – Takeda	Lisa Barton – Genentech	Paul Armstrong – 3M	Samantha Green – Genentech
		Nick Cowper – Abbvie	

Speakers

Nickolas Ball, Pomona College
Benjamin Cravatt, Scripps Research Institute
Evan Hurlow, Snapdragon
Julia Kalow, Northwestern University
Joseph Kincaid, Pharmablock
Kenneth Matthews and Thomas Stratton, Gilead
Andy McNally, Colorado State University
David Thaisrivongs, Merck

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