

Week of June 6 - 13, 2025

Announcements, Shoutouts, and Accolades

Welcome to our summer new admits!

This week, we said hello to the newest members of our ASDRP community!

New Preprint publication from Njoo, Pazzi, Yamamoto Collaboration!

This week, a collaboration paper between the [Pazzi Lab](#), [Yamamoto Lab](#) and [Njoo Lab](#) went online after a year of hard work, and discloses a series of new silicon-containing anticancer natural product analogs, which the team has coined the name *siloxytecans*. This was led by seniors Isabella Lo (Harker '25, Caltech '29), Zane D'Souza (Bellarmine '25, UCI '29), Isa Baratoff (Los Altos '25, Orange Coast College '29), Lekhya Menta (Cal '25, UC Berkeley '29), Yining Xie (Cal '25, UC Berkeley '29) and juniors Sanika Vaidya (Lynbrook), Ashley Mo (Harker), Alyssa Yee-Xin Chia (King's Academy), Katelyn Li (Castilleja), Jessica Parvin (Leigh), Sripathy Sadagopan (American), Olivia Kwok (Los Altos), Jenny Zhang (Los Altos), Shreya Somani (Lynbrook), Thomas Sanchez (Amador) and Rebecca Chen (Saratoga). In the study, the team reported that these new compounds exhibit a unique blue fluorescence that allows scientists to directly track their cellular uptake as a function of their anticancer activity. [Read the full article here](#) (DOI: <https://doi.org/10.26434/chemrxiv-2025-jj5mn>).

Parents, Families and Friends of ASDRP can Donate - Any Time

Thank you to all of our families who helped us raise close to \$75,000 in only 4 months this past fall. Our goal for 2025 is to double that and reach \$150,000. Your generosity has a direct impact on student researchers and ASDRP's on campus and remote research teams. Many of our families utilize corporate matching benefits - thank you!

Financial donations can be made directly through our donation PayPal page. Options for one time and recurring donations are available. All donations are tax deductible and you can request that your donation be applied towards a specific laboratory. Check out donations webpage: www.asdrp.org/donations. If you need assistance, please contact David Linnevers @ david.linnevers@asdrp.org for more information.

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[NewsBytes]

On the Horizon: Upcoming Events

Friday, June 6, 2025 @ 5:00 PM - 7:00 PM, via Google Meet

Computational Resources Training, Part 1

Mandatory for all first year students who are involved in research that engages ASDRP's computing resources. Please see the Pre-Work Packet for student requirements and for Canvas joining instructions.

Friday, June 6, 2025 @ 6:00 PM - 7:00 PM, via Google Meet

Jupelli Lab Meet and Greet

Q&A session for students interested in Dr. Madhulika Jupelli's research group, open to all students interested in the Jupelli lab. Please see the Jupelli lab page (<https://sites.google.com/asdrp.org/jupelli>) for details.

Saturday, June 7, 2025 @ 9:30 AM - 10:00 AM, in person

Starting Fresh with Donuts at Dawn for Rising Freshmen

Come join us for donuts and pastries and other breakfast goodies as we start the weekend together with our freshmen. Rising freshmen should plan on attending Research 101 in person right after having their fill of breakfast with the Admin team. We will be serving breakfast items to our 9th graders at 9:30 AM - 10:00 AM while engaging in freshmen-specific discussions about what they are learning and how they are progressing.

Saturday, June 7, 2025 @ 10:00 AM - 11:30 AM, Zoom

Research 101, Module 1: "Introduction to Research"

Research 101 is mandatory for all first semester students, and covers the fundamentals of research methodology, best practices, and basic statistics and writing skills. Module 10 / Week 10, Michael Amadi will discuss practical applications towards developing an impactful research poster, which is a necessary skill towards students' later aspirations to present work in conferences or in papers. First Semester Students are required to join us at [10:00 AM PDT via Zoom](#).

Sunday, June 8, 2025 @ 3:00 PM - 7:00 PM

Summer 2025 Guest Speaker Series: Prof. Dr. Justin Du Bois, Stanford University Chemistry Department "The Molecular Mystique of Nature's Poisons" - Life Sciences Seminar Room, in person only.

This weekend, we are excited to be hosting Professor Dr. Justin Du Bois, Henry Dreyfus Professor of Chemistry and Professor, by courtesy, of Chemical and Systems Biology, at Stanford University. Dr. Du Bois will be visiting ASDRP and will be giving a guest lecture on some of the research from his laboratory at Stanford on redesigning small molecule toxins from venoms into highly exquisite modulators for sodium voltage gated channels, with potential therapeutic applications in chemical neuroscience. This is accomplished in the total synthesis of several challenging targets from nature, including tetrodotoxin, saxitoxin, gonyautoxin, aconitine, and batrachotoxin. The Du Bois laboratory has also developed several key innovations in Rh-catalyzed C-H amination, which is exploited in the total synthesis of several amine-containing natural products. Prof. Du Bois received his PhD in chemistry at the California Institute of Technology (Caltech) under Prof. Erick M. Carreira, and his B.Sc. in chemistry from UC Berkeley. Following his doctoral work, Dr. Du Bois received his postdoctoral training at the Massachusetts Institute of Technology (MIT) under Prof. Stephen Lippard. Currently, Dr. Justin Du Bois is the Henry Dreyfus Professor of Chemistry and Professor, by courtesy, of Chemical and Systems Biology at Stanford University, and founding member of the NSF Center for

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Selective C-H Functionalization and the Center for Molecular Analysis and Design (CMAD) at Stanford. Professor Du Bois will be sharing with our students the latest advances in his laboratory in developing total syntheses of naturally occurring toxins as leads for therapeutic development.

Monday, June 9, 2025 @ 10:00 AM - 11:30 AM, Google Meet

Summer 2025 Mini Course: "Absolutely Small: an Introduction to Quantum" (Dr. Larry McMahan)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

The purpose of this course is to give an overview of Quantum Physics and how it differs from the classical view of the physical world. An historic account of the discoveries leading to Quantum Theory will be presented, along with the equations used to prove those concepts. The results will be used to show how the internal structure of the atom was discovered, and how this affects everything from physics to chemistry to biology. You will not be required to have taken Calculus, but a few tenets of calculus will be presented to explain how the quantum equations were achieved.

Monday, June 9, 2025 @ 10:00 AM - 12:00 PM, In person only

Summer 2025 Mini Course: "Hit Identification to Lead Optimization in Medicinal Chemistry" (Dr. Edward Njoo)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

The success of synthetic chemistry in the identification and development of therapeutic leads is predicated on strategic design of target-driven small molecule programs in approaching molecular mechanisms of disease. In this series we will explore different strategies that have demonstrated clinical success. The content is built on hit-to-lead examples from JACS, J Med Chem or ACS Med Chem Letters on selected real world applications of each strategy. The aim is to broaden students' understanding of how drug discovery works beyond making "inhibitors" and how rational, iterative design based on first principles can drive improved potency or tolerability.

Monday, June 9, 2025 @ 2:00 PM - 3:00 PM, In person only

MestreNova License Distribution and Software Training (trainers: Dr. Edward Njoo / Dr. Harrison Rahn)

Mandatory prerequisite for NMR, Mass Spectrometry, HPLC, and FT-IR Core Trainings. Students who are required to use instrumentation that require MestreNova for data processing or interpretation are required to attend this training and to activate a license in person.

Tuesday, June 10, 2025 @ 10:00 AM - 11:00 AM, In person only

Summer 2025 Mini Course: "Theory and Practice in Separation Science" (Dr. Harrison Rahn)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

Separation is a key part of how scientists uncover new materials, medicines, and discoveries. In this course, students will dive into the art and science of separating mixtures, from pulling apart differently-sized molecules to isolating substances based on how they interact with their surrounding solvents. They'll explore how changes in phase, like dissolution or crystallization, help scientists create pure compounds, and how tools like chromatography and electrophoresis can sort complex mixtures with incredible precision. Along the way, students will see how mastering

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separation techniques is essential for planning experiments, solving real-world problems, and pushing the boundaries of chemical and biological research.

Tuesday, June 10, 2025 @ 7:00 PM - 8:30 PM, Zoom

Colloquia held online via Zoom (Weekly) Colloquia Website: www.asdrp.org/colloquia. Join us every Tuesday at 7:00 PM on Zoom for the ASDRP student researchers Colloquia. All are invited and student researchers need to attend. [Zoom Link](#)

Department of Chemistry, Biochemistry & Physics

"A concise synthesis of the A-ring oxetane of andrographolide" [Njoo Lab](#) (Organic Chemistry). Presenters: Rushika Raval (Irvington '26), Galen Liu (San Mateo '26), Andrew Chyu (Dublin '26)

Department of Computer Science & Engineering

"Drone Identification of invasive plant species" [McMahan Lab](#) (Machine Learning / Elec. Engineering)
Presenter: Chloe Ho

Wednesday, June 11, 2025 @ 10:00 AM - 11:30 AM

Summer 2025 Mini Course: "Techniques in the Quantification of Biological Phenomena" (Dr. John Wang / Dr. Edward Njoo)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

Remarkably, nearly all measurement of biological function takes place through an optical readout that exists as a proxy for the otherwise unobservable biological phenomena that is being studied. But, what exactly are we measuring? And, how do we go about measuring such things? From cell signaling pathways to surface marker expression, to proximity effects between intracellular agents, this mini course takes a survey of contemporary techniques in how molecular biologists and chemical biologists take precise measurements of biological phenomena, whether at the cellular, genetic, or molecular in scope.

Wednesday, June 11, 2025 @ 11:30 AM - 12:30 PM, In person only

Summer 2025 Mini Course: "Soft Matter Physics" (Dr. Joseph Pazzi)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

This mini-course will teach you the fundamental physics behind different soft materials we commonly see in everyday life and industry. What gives materials their properties and what are the different models to explain these properties. The course will demonstrate the link between microscopic structure and bulk properties in a variety of soft condensed matter systems including liquid crystals, polymers, colloidal systems and surfactants including biologicals like lipids. This course will have a focus on teaching macromolecular self assembly processes and understanding the physical structures that result. The course will also prepare you to carry out research and read cutting edge scientific articles in the field of biophysics and to write on a scientific topic.

Wednesday, June 11, 2025 @ 1:00 PM - 2:00 PM, Zoom

Summer 2025 Mini Course: "Social Minds: An Introduction to Social Psychology" (Sahar Jahanikia)

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Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

This course introduces students to the foundational concepts, theories, and real-world applications of social psychology. Through the exploration of classic experiments and contemporary research, students will develop a critical understanding of how individuals think about, influence, and relate to one another in social contexts. By the end of the course, students will be able to analyze social behavior through the lenses of cognition, persuasion, conformity, group dynamics, prejudice, altruism, and practical application in everyday life.

Wednesday, June 11, 2025 @ 8:00 PM - 9:00 PM, Google Meet

Summer 2025 Mini Course: "Introduction to Project Management in Research" (Prof. Clinton Cunha)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

As we grow in our lives, we have to find better ways to manage and deal with data, time, and other urgent tasks. In this mini-course, we will focus on the principles of project management and how they can be applied to improve your research project. We will talk about the following: The Project Life Cycle, Frameworks for Project Management, Working with Others, Project Management Software, Project Time Management, Project Planning, Project Implementation, Assessing Project Quality, Project Completion, Applying Project Management in your Research and Beyond. Each week, we will talk about important project management skills that will help you in your research project and beyond. Each class, there will be activities based on the principles of that topic and will have questions which could involve group work. At the end of the course, you will learn how to self-learn and continuously update your knowledge in Project Management.

Thursday, June 12, 2025 @ 10:00 AM - 11:00 AM, In person only

Summer 2025 Mini Course: "Theory and Practice in Separation Science" (Dr. Harrison Rahn)

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Separation is a key part of how scientists uncover new materials, medicines, and discoveries. In this course, students will dive into the art and science of separating mixtures, from pulling apart differently-sized molecules to isolating substances based on how they interact with their surrounding solvents. They'll explore how changes in phase, like dissolution or crystallization, help scientists create pure compounds, and how tools like chromatography and electrophoresis can sort complex mixtures with incredible precision. Along the way, students will see how mastering separation techniques is essential for planning experiments, solving real-world problems, and pushing the boundaries of chemical and biological research.

Thursday, June 12, 2025 @ 12:30 PM - 2:30 PM

ASDRP Summer Soccer Cup

Join us for a faculty- and student-run weekly pickup soccer games at Warm Springs Community Park / Booster Park. Led by Dr. Joseph Pazzi and Dr. Larry McMahan. Why? It is a great way to get to know your advisors outside of the lab and to make new friends!

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Thursday, June 12, 2025 @ 3:00 PM - 4:45 PM, Zoom

Research 201, Week 1, Module 1 / Lecture 1: (Dr. Larry McMahan / Dr. Harrison Rahn)

Research 201 is mandatory for all second-semester students at ASDRP. This course is mandatory for all second- and third-semester students at ASDRP. Research 201 covers general, advanced topics in literature surveys, with practicals on dissecting dense research papers, scholarly writing, referencing softwares, and more.

Thursday, June 12, 2025 @ 3:00 PM - 4:00 AM, Google Meet

Summer 2025 Mini Course: "Evolution of Astrophysics" (Professor Robert Downing)

Mini courses are free for all students currently enrolled at ASDRP. Students must be pre-registered and must join Canvas via the provided join codes.

The evolution of Astronomy & Astrophysics over the Millenia, & how they have not only led to the incredible precision today, but also to untold opportunity in Data Mining the immense repositories of observations warehoused by contributing Nations. Periodic exercises will be offered, to be completed at the discretion of the attendee. Practical application of varying types of Machine Learning will be demonstrated using current topics of interest: exoplanets, black holes, other civilizations...

Friday, June 13, 2025 @ 11:00 AM - 1:00 PM, In person only

Revvity Signals ChemDraw License Distribution and Software Training (trainers: Dr. Edward Njoo / Dr. Harrison Rahn)

ChemDraw is the industry leading software for molecular scientists to create professional chemical drawings for molecular structure. Attendance is mandatory for those who need ChemDraw for data processing or interpretation. Software license keys can only be activated in person, on campus.

Friday, June 13, 2025 @ 5:00 PM - 7:00 PM, via Google Meet

Computational Resources Training, Part 2

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End Note

Senior Celebration and Gala on May 26, 2025. Whether you were there in person, local and could not attend or one of our outstanding remote researchers, saying congratulations and goodbye is bittersweet. We are very proud of all of our seniors!



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