



ASDRP

Aspiring Scholars Directed Research Program

[NewsBytes]

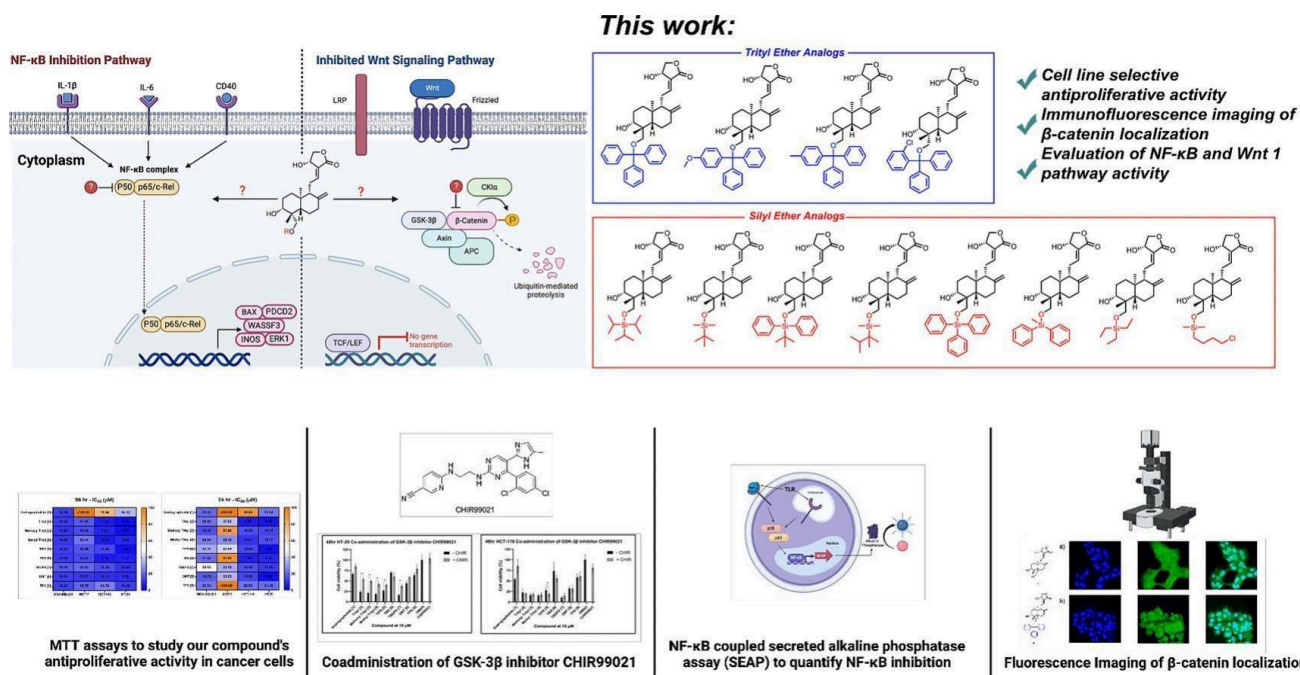
Week of March 8-14, 2025

Announcements, Shoutouts, and Accolades

Student Researchers and Faculty Publish anticancer small molecule research in *Bioorganic & Medicinal Chemistry Letters*

ASDRP principal investigators [Dr. Zane Chen](#), [Dr. Tracy Zhang](#) and [Dr. Edward Njoo](#) and students from their collaboration have published "[Synthesis, antiproliferative activity and biological profiling of C-19 trityl and silyl ether andrographidolide analogs in colon cancer and breast cancer cells](#)" in *Bioorganic Medicinal Chemistry Letters*. Over two years of student development and research collaboration went into the most recently published work by the three laboratories. Enjoy the read, which represents a year and a half of grueling work by some of our most senior students, followed by five months of wrangling with peer review.

A core aspect of ASDRP's mission is to foster principal investigator and student researcher laboratory interdisciplinary collaboration. It plays a crucial role in advancing knowledge, solving complex problems, and fostering innovation. Demonstrating the rewards and challenges working across departments is an important component of student researcher development. All three departments at ASDRP were directly involved:



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[Department of Chemistry](#), Aspiring Scholars Directed Research Program, [Department of Biological and Life Sciences](#), Aspiring Scholars Directed Research Program and the [Department of Computer Science & Engineering](#), Aspiring Scholars Directed Research Program

Congratulations to the students and principal investigators!

Tiffany Gu, [The Harker School](#) '25; Rushika Raval, [Irvington High School](#) '26; Zachary Bashkin, COIL '24 & UC Berkeley '28; Carina Zhou, [Mission San Jose High School](#) '25; Sanghyuk Ko, [Homestead High School](#) '25; Natalie Kong, [American High School](#) '25; Seoyeon Hong, [Leigh High School](#) '24 & UC Davis '28; Aditya Bhaskara, [Dougherty Valley High School](#) '25, Samarth Shah, [BASIS Independent Fremont](#) '25; Aditi Joshi, [Leigh High School](#) '24; Samahith Thellakal, [BASIS Independent Fremont](#) '26; Kaitlyn Rim, [Amador Valley High School](#) '27; Anushree Marimuthu, [Mission San Jose High School](#) '24; Srishti Venkatesan, [Leigh High School](#) '24 & MIT '28); Emma Wang, [Sequoia High School](#) '26, Sophia Li, [BASIS Independent Silicon Valley](#) '25; Aditi Jayabalan, [Fremont High School](#) '25; Alice Tao, [The Harker Upper School](#) '24 & UC Berkeley '28; Yilin Fang, [Los Gatos High School](#) '25; Lorelei Xia, [Irvington High School](#) '24; Aidan Chui, [Amador Valley High School](#) '24; Emily Shu, [Irvington High School](#) '24 & UC Berkeley '28; Dr. Tracy Zhang, Dr. Zhan Chen, and Dr. Edward Njoo.

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.

Research 101 and 201 are in FULL SWING!

This weekend is our 7th week of running this semester's rendition of Research 101, our foundations course for first semester students, and Research 201, our next-level advanced research methodology seminar for second and third semester students. This week in Research 101, Mr. Cunha covered the process of peer-reviewed publications, and how journals and reviewers referee peer reviewed publications from submission to publishing, which can take several months to years. Dr. Njoo joined in at the end of the Research 101 lesson this week as a guest, and shared some of his experiences both as an author and as a reviewer.

In Research 201, this week our course instructors Dr. Larry McMahan and Dr. Edward Njoo introduced the last module of Research 201: Developing a Research Plan. This module focused on turning goals into specific, strategic, and actionable plans, including developing task and resource management protocols, and setting

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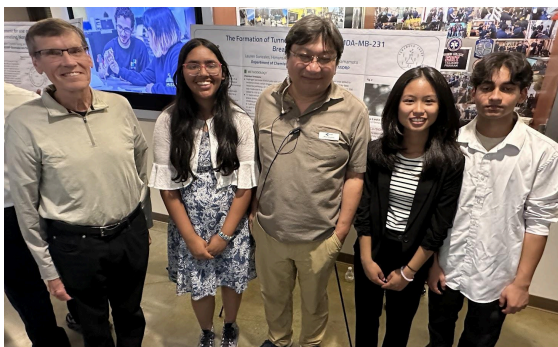
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both short term and long term research goals. The team also discussed the importance of “go / no-go” experiments in de-risking a scientific process, and gave students practical advice on developing rigorous and well thought-out processes that minimize time wasted in research. This week, students will practice implementing this into their prospectus.

Save the Date! [ASDRP Research Expo & Symposium](#) is March 22, 2025 - check your email to submit an abstract and register as an attendees



The *In Person ASDRP Summer 2024 Semester Research Symposium and Expo* showcases some of the original scientific findings of 1000+ high school student researchers who conducted research across 200+ projects in a wide array of STEM fields. Students come from throughout the Bay Area, across the U.S., and internationally! The Symposium features students presenting the research they completed throughout the Fall 2024 & Spring 2025 semester and during their participation in ASDRP.



The [Research Symposium & Expo](#) showcases the students' novel results to their peers, parents, community, and friends. Importantly, these scientific projects conducted by students are original research with cutting-edge results, completed on \$10M+ worth of donated research equipment with highly qualified research mentors, and are not traditional “science lab” projects whose results are known. This event is a premier opportunity for student researchers to be exposed to genuine research, scholarship, peer review, scientific reading and writing, and scientific presentation at a young age before college. At the completion of the Symposium, the students will be able to leverage their own published works in demonstrating their competitive advantage as they prepare to matriculate to college. We invite you to join us in the beginning of a wonderful journey for these young scientists. Please come, view research posters, ask the

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students questions, listen to oral presentations, support these great kids, celebrate their accomplishments, and have fun!

The event is held at [Mission College](#) in Santa Clara. Mission College continues to be an incredible partner and allows the ASDRP community to utilize the [Gillmor Center](#). The Gillmor Center is **118,000 square foot** three-story interdisciplinary classroom facility. A big thank you to [Dr. Omar Murillo](#), [Clement Lam](#), and [Brian Shively](#) who make our partnership with Mission College possible.



On the Horizon: Upcoming Events

Saturday, March 8, 2025 @ 10:00 - 11:30 AM

Research 101, Week 7/Module 7: “Parts of a Paper, The Peer Review Publication Process”, Mr. Amadi
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 7/Week 4, Mr. Amadi will cover a critical component to excellence in research and publication - the Peer Review Process. Many of our student researchers want to publish and publishing a rigorous scientific study takes determination, excellent writing, repeatable scientific experiments and high quality data. Understanding peer review critique and the peer review publication submission requirements will help our students move closer to their dream of publishing. Discussions will center around how, why and practical examples will be provided during the session. First Semester Students are required to join us at [10:00 AM PDT via Zoom](#).

Saturday, March 8, 2025 @ 12:00 - 1:30 PM

Research 201, Week 7, Module 3 / Lecture 3: “Developing and Delivering a Research Plan”, faculty-led
Module 3, Week 7, Lecture 3 of Research 201 kicks off up with identifying a feasibility plan and direct actionable steps towards accomplishing the research goals outlined in Module 2. This is by nature highly discipline specific, and will challenge students to identify how the ultimate goals of a research project should be approached and eventually realized. While a lot of this discussion may already exist within individual research groups, the aim of this is to have students articulate and fully understand specific actionables and the chosen techniques to accomplish the targeted research. Once students have identified the background, rationale, and aims of their area of research within their advisor’s group, the next skill they must build is developing a stepwise plan on short-term and long-term goals, as well as the feasibility and resources required for such goals, in order to achieve their research aims. All second and third semester students are required to join us at [noon on Zoom](#)

Saturday, March 8, 2025 @ 7:00 - 8:00 PM

Spring School Year Seminar: The Logic of Chemical Synthesis (Dr. Njoo) @ Seminar Room

This seminar meets on Saturday nights, with a focus on retrosynthetic analysis, strategies in atom- and step-economical total synthesis of natural products, and mechanistic study of named reactions. In person only, open to all students.

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Tuesday, March 11, 2025 @ 7:00 - 8:30 PM

Colloquia held online via Zoom (Weekly) Colloquia Website: www.asdrp.org/colloquia

★ Starostina Lab

"Machine Learning in Electron Microscopy Image Analysis: Particles Identification". RESEARCHERS: Sophia Hale, Saint Francis High School '25; Anderson Lu, BASIS Independent Silicon Valley '28; Anannya Kaur, Valley Christian Schools '26

★ Njoo Lab

"Synthesis, antiproliferative activity, and biological profiling of C-19 trityl and silyl ether andrographolide analogs in colon cancer and breast cancer cells". RESEARCHER: Rushika Raval, Irvington High '26

★ Starostina Lab

"Towards Predictive Maintenance: Tabor Factor Determination as a Function of Strengthening Mechanisms in Copper" RESEARCHERS: Anay Tailor, Dougherty Valley High School '27; Nicholas Wong, Dougherty Valley High School '26; Saketh Potturu, Dougherty Valley High School '26; Shouyo Tan, Los Altos High School '26, Timothy Park, Dublin High School '26; Erin Wu, Henry M. Gunn High School '26; Averi Mukhopadhyay, American High School '27

★ McMahan Lab

The Development of an AI-Enhanced Autonomous Drone for Pollution Monitoring and Emission Predicting" RESEARCHERS: Christon Rex, California High School '28; Haramrit Bal, Mountain House High School '27; Xiangtuo Cui, Basis Independent Silicon Valley '26; Rohan Devnani, Emerald High School '27; Trung Duong, Evergreen Valley High School '26; Komal Jasuja, Weston High School '27

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](#)

Wednesday, March 12, 2025 6:30 - 7:15 PM

ASDRP Bi-weekly Parent Fireside Chat via zoom

This week we will have a robust discussion of what it takes for a student researcher to prepare and be prepared for a Conference and our spring 2025 Research Symposium & Expo. All parents are invited and we invite you to participate and volunteer for the upcoming Expo! [Zoom Link](#)

Wednesday March 12, 2025 @ 7:30 - 8:30 PM

Meet the Department Chairs

In Person: Come and meet Dr. John Wang, Department of Biological & Life Science and Dr. Edward Njoo, Department Chair of Chemistry, Biochemistry & Physics at the ASDRP Campus in Fremont. Dr. Wang and Dr. Njoo will be sharing their current research and the research in the departments. Refreshments will be served!

COME JOIN US on Wednesday, March 12 @ 7:30 PM - 8:30 PM

CSE - On Zoom | Biology & Chemistry Departments - In Person Only



Larry N. McMahan, PhD
Computer Science & Engineering



Edward Njoo, PhD
Chemistry, Biochemistry, Physics



John Wang, PhD
Biological & Life Sciences

Refreshments | Meet and greet Faculty | Hear about current research

Via Zoom: Join Dr. Larry McMahan, Department of Computer Science & Engineering as he shares about his research and the various offerings in the Department of Computer Science. [Zoom Link](#)

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Saturday, March 15, 2025 @ 10:00 - 11:30 AM

Research 101, Week 8/Module 8: “Presenting Your Research”, Mr. Amadi

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 8/Week 8, Mr. Amadi will discuss how, why and the importance of high quality and refined research presentation. Presenting research is crucial for scientific progress, professional development, and knowledge dissemination. Here’s why it matters: Knowledge Sharing, Receiving Feedback & Improving Research, Professional Development & Recognition, Networking & Collaboration, Securing Funding & Support, Inspiring & Educating Others. Discussions will center around how, why and practical examples will be provided during the session. First Semester Students are required to join us at [10:00 AM PDT via Zoom](#).

Saturday, March 15, 2025 @ 12:00 - 1:30 PM

Research 201, Week 8, Module 3 / Practical 3: “Developing and Delivering a Research Plan”, faculty-led

Module 3, Week 8, Practical 3 of Research 201 continues with the practical application of identifying a feasibility plan and direct actionable steps towards accomplishing the research goals outlined in Module 2. Students will have developed a rigorous ability to articulate: The general and specific goals of their advisor’s research in which they are working, the collective of background information related to their field, including precedent and prior art in the field, the competitive landscape within a project area, as well as a justification for the approach, the specific aims and sub-aims of research within the project, specific audiences for which the proposal might be given to and actionable plans for accomplishing the goals of research, including a justification for the techniques employed, both short-term and long-term. All second and third semester students are required to join us at [noon on Zoom](#).

Saturday, March 15, 2025 @ 7:00 - 8:00 PM

Spring School Year Seminar: The Logic of Chemical Synthesis (Dr. Njoo) @ Seminar Room

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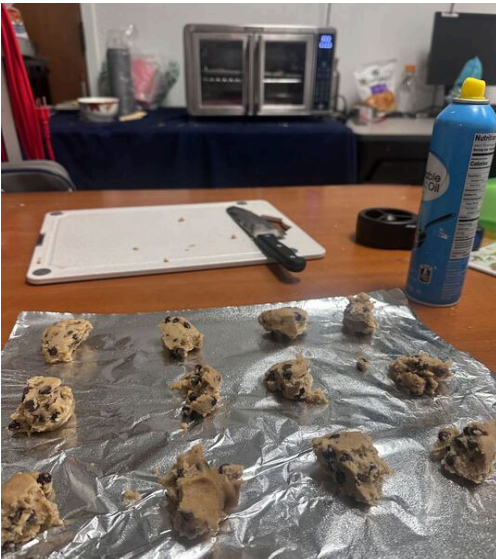
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End Note

There is always something cooking at ASDRP 😊



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