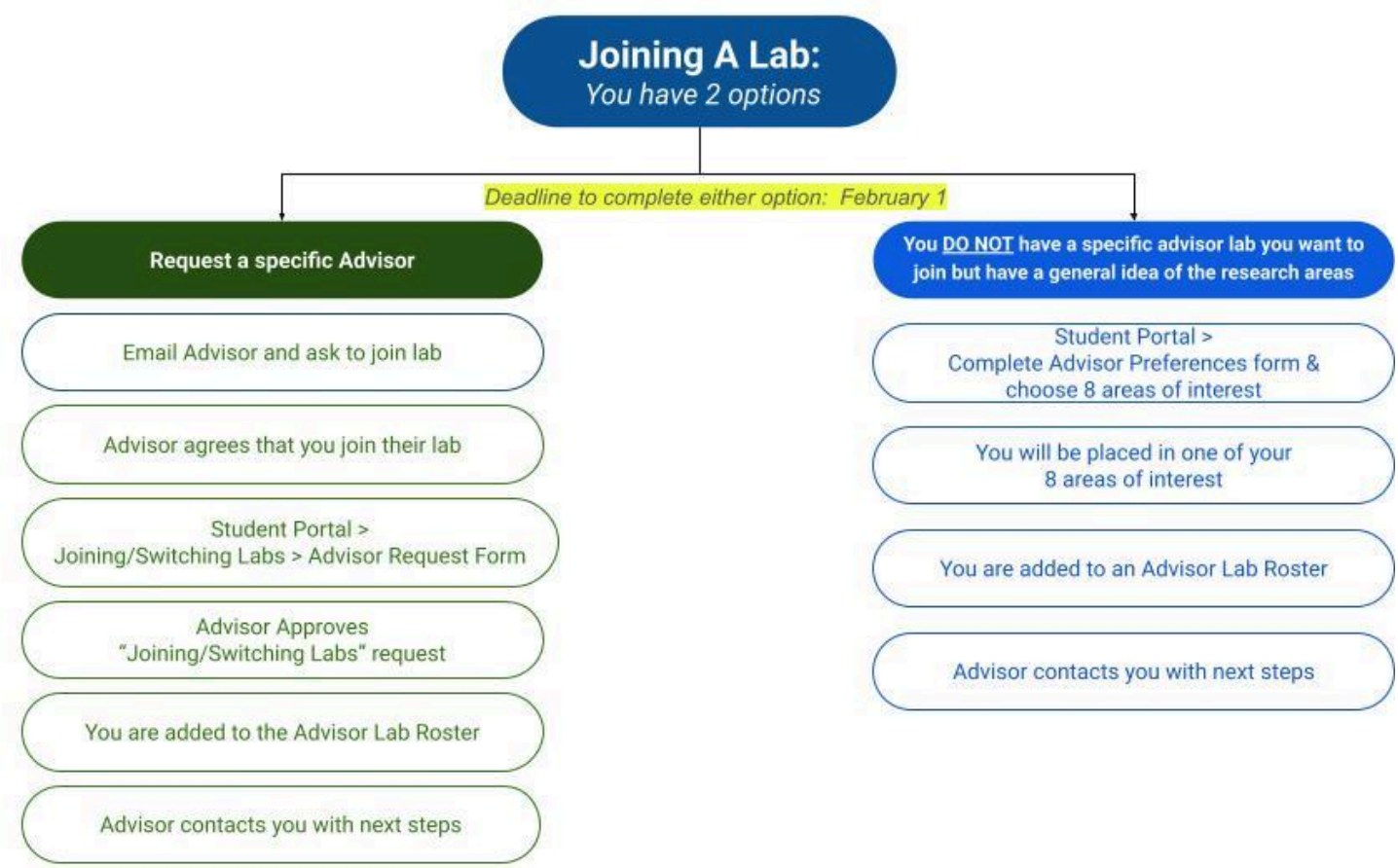
Joining a Research Group | New Admits for the Spring of 2025

Welcome to ASDRP 2025!

Space in many ASDRP research groups is limited, particularly groups where there are a lot of senior group members staying from the spring. All group joining requests are subject to approval by the principal investigator of the group, and space and placement in research groups is first come, first serve. Once a group is full, a principal investigator may choose to no longer accept new group members.

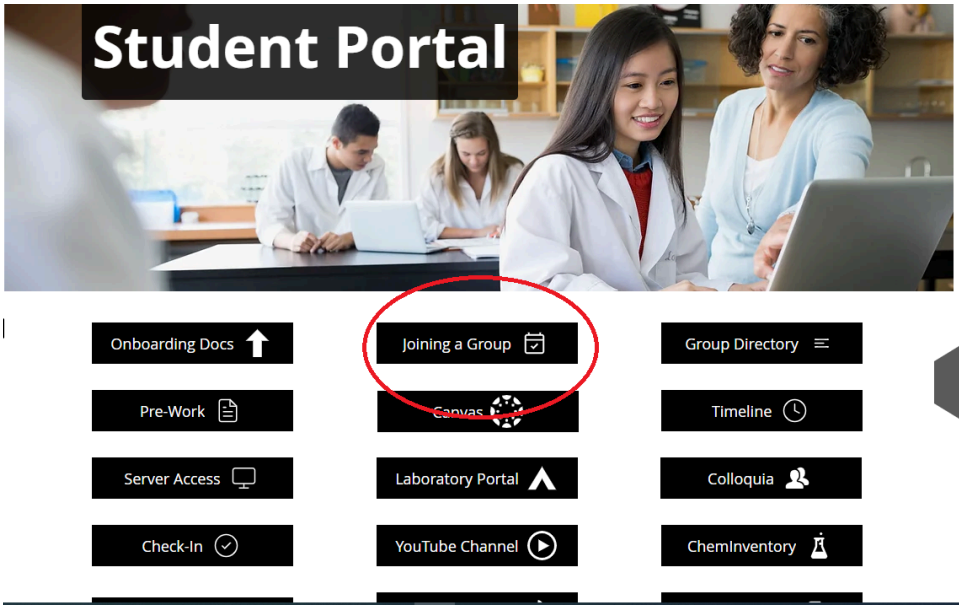


Instructions for joining a research group

1. Identify your top choices of groups to work in. See the other PDF for a brief description of what each group works on. Project-specific details may or may not be publicly available depending on the PI's willingness to publicly distribute intellectual property. *Some groups have additional requirements, including potential interviews and/or minimum prerequisites.* Follow the instructions on the next page to view prerequisites and requirements per group and follow the instructions accordingly.
2. If your preferred research lab requires permission to join or an interview, please email the appropriate faculty member. *All join requests must use the Advisor Request Form (see #5)*
3. Log into the **Student Portal** on the ASDRP Website (Link: https://www.asdrp.org/online-portal Password: **WeAreASDRP**). This will be your centralized location for finding all that you need to know about ASDRP!
4. **If you DO NOT have a specific advisor lab you want to join but have a general idea of the research areas** in which you are interested, complete all parts of the "**Advisor Preferences Form"** in the "Ground Zero" Module of Research 101.
    a. You MUST be enrolled in Research 101 on Canvas to access this form.
    b. Follow the instructions on the form very carefully.
5. **If you DO have a specific Advisor Lab you want to join, Choose>Joining/Switching Labs>Advisor Request Form in the student portal.** If you are requesting a specific advisor, you must complete the Advisor Request Form. Please note that you may switch advisors at any time during the semester, not just during semester transitions. The Advisor Request Form is available on your Student Portal and at this link: https://www.asdrp.org/joininglab (See below)
6. Deadline to request a specific advisor and/or submit your laboratory preferences: **Feb 1**

IMPORTANT REMINDER:

Your parents must complete the online parent orientation in order for you to be placed in a lab

7. 

Need help figuring this out? Check out the following three buttons:

RED BOX: Walk Through Video - If you need help with figuring this new process out, no worries! Watch this little video that we put together to make it make sense.
GREEN BOX: Advisor Request Form - Click this link to access the group switch / transfer request form, which will instantly notify advisors of your query.
PURPLE BOX: Labs Accepting Students - Need to know whether or not a group is still accepting students? Click the link to the real-time group tracker. Once a lab is full, their status will change from “OPEN” to “CLOSED.”

ASDRP is a production of Olive Children Foundation, a 501(c)(3) nonprofit organization in Fremont, California.

Principal Scientists | Spring 2025

Prerequisites / requirements for prospective group members

ABOUT YOUR DEPARTMENT LEADS | Spring 2025

The Department lead/chair role at ASDRP spans both a technical lead and an administrative lead role. All three department chairs at ASDRP operate their own research groups.

COMPUTER SCIENCE & ENGINEERING

Larry McMahan, PhD (Quantum Physics, Machine Learning) - The McMahan group works on machine learning, quantum mechanics, and electrical engineering. No prerequisites, though prior coding experience and the ability to conduct logical reasoning is a plus. Must be excited about research! Email Dr. McMahan at larry.mcamahan@asdrp.org for an interview.. **Group website: https://sites.google.com/asdrp.org/mcmahan**

BIOLOGICAL AND LIFE SCIENCES

John Wang, PhD (Molecular Biology) - Email Dr. Wang at john.wang@asdrp.org with a CV if you are interested in joining. The Wang lab is developing precision diagnostics and molecular tools for cancer diagnostics and antibody-based therapeutics. Additionally, Dr. Wang's group uses a combination of protein engineering, cell biology, genetic engineering, and molecular biology tools to develop antibody functionalization strategies that enable preparation of therapeutics. **Group Website: https://sites.google.com/asdrp.org/wang**

CHEMISTRY, BIOCHEMISTRY & PHYSICS

Edward Njoo, PhD (Organic Chemistry) - Email Dr. Njoo at edward.njoo@asdrp.org if you are interested in joining. Five openings, preferentially taking sophomores and juniors (and exceptional freshmen) who are serious and committed to year-round research in synthetic & physical organic chemistry. Must be willing to juggle multiple projects at once and must be committed to 20+ hours of laboratory research per week. By interview only, email njoogroup@asdrp.org and CC edward.njoo@asdrp.org to set up an interview. No prior research experience needed, just the willingness to learn a LOT and to work very hard who are comfortable being in a vibrant, elite, and dynamic group deeply passionate about molecular science. **Group website: www.njoolab.org / PW:WeAreASDRP**

Faculty Research Group Directory, *Spring 2025*

Asterisk (*) denotes remote researchers OK.

Highlighted rows indicate Department Chair

Investigator	Department	Field	Link(s)
Akl, Marx*	CSEN	Quantum Mechanics, Machine Learning, Comp Physics	marx.akl@asdrp.org **Group Website**
Amadi, Michael	BIOL	Biotechnology	michael.amadi@asdrp.org **Group Website**
Brah, Harman*	CHEM	Biophysics	harman.brah@asdrp.org **Group Website**
Chen, Zane	CHEM	Biochemistry	zane.chen@asdrp.org **Group Website**
Cunha, Clinton*	BIOL	Bioinformatics, Cancer Biology	clinton.cunha@asdrp.org **Group Website**
DeGrendele, Chris*	CSEN	Applied Physics & Mathematics	chris.degrendele@asdrp.org **Group Website**
Dharmale, Pragati*	CSEN	Machine learning & Artificial intelligence STEM applications	pragati.dharmale@asdrp.org **Group Website**
Downing, Robert*	CSEN	Data Science, Machine Learning	robert.downing@asdrp.org **Group Website**
Jahanikia, Sahar*	BIOL	Cognitive Science, Neuroinformatics	sahar.jahanikia@asdrp.org **Group Website**
Kushnerov, Martin	BIOL	Bioinformatics, Genetics	martin.kushnerov@asdrp.org **Group Website**
Laurienzo, Joseph*	CSEN	Applied Mathematics, Cognitive Informatics	joseph.laurienzo@asdrp.org **Group Website**
Lamichhane, Prabin*	CSEN	Data Science	prabin.lamichhane@asdrp.org **Group Website**
Liu, Dennis*	CSEN	Computer Science Software Engineering	dennis.liu@asdrp.org **Group Website**
Liu, Viktoriia*	CSEN	Applied Physics, Machine Learning	viktoriia.liu@asdrp.org **Group Website**

McMahan, Larry*	CSEN	Machine Learning, Quantum Mechanics	larry.mcmahan@asdrp.org **Group Website**
Mui, Phil	CSEN	Artificial Intelligence, Machine Learning	phil.mui@asdrp.org **Group Website**
Njoo, Edward	CHEM	Organic Chemistry, Chemical Biology	edward.njoo@asdrp.org **Group Website**
Pazzi, Joey	CHEM	Biomedical Engineering	joey.pazzi@asdrp.org **Group Website**
Poudyal, Bharat	BIOL	Biotechnology	bharat.poudyal@asdrp.org **Group Website**
Qin, Huifang*	CSEN	Artificial Intelligence	huifang.qin@asdrp.org **Group Website**
Renganathan, Gayathri	CHEM	Biochemistry & Pharmacology	gayathri.renganathan@asdrp.org **Group Website**
Salgotra, Vasudha	CHEM	Analytical Chemistry	vasudha.salgotra@asdrp.org **Group Website**
Starostina, Nataliya	CSEN	Materials Science	nataliya.starostina@asdrp.org **Group Website**
Subramaniam, Suresh*	CSEN	Data Science	suresh.subramaniam@asdrp.org **Group Website**
Wang, John	BIOL	Molecular Biology	john.wang@asdrp.org **Group Website**
Yamamoto, Akira	CHEM	Biomaterials Engineering	akira.yamamoto@asdrp.org **Group Website**
Zhang, Tracy	BIOL	Cancer Biology	tracy.zhang@asdrp.org **Group Website**

Group Descriptions

Marx Akl, PhD | Density Functional Theory / Quantum Mechanics | marx.akl@asdrp.org

Dr. Akl received his PhD from the Rensselaer Polytechnic Institute in Physics, and currently teaches at community colleges around the Bay Area. Dr. Akl's primary area of research is in using machine learning to identify ways to linearize density functional theory (DFT) calculations to understand electronic structure of novel nano and inorganic materials with unique physical properties.

Link to Group Website: https://sites.google.com/asdrp.org/akl

Michael Amadi, MS | Synthetic Biology & Biotechnology | michael.amadi@asdrp.org

The Amadi lab works on developing biotechnology solutions for a variety of societal problems including agriculture/agritech and genomics and disease detection. Tools used include genetic engineering, metabolomics by mass spectrometry, etc.

Link to Group Website: https://sites.google.com/asdrp.org/amadi

Harman Brah, MD | Biophysics & Computational Biochemistry | harman.brah@asdrp.org

The Brah group at ASDRP uses computer modeling and simulations to develop next-generation small molecule therapeutics targeting cancer, Alzheimer's disease, obesity, and more. This is accomplished through high throughput virtual screening and molecular dynamics simulations.

Link to Group Website: https://sites.google.com/asdrp.org/brah

Zane Chen, MD, PhD | Cancer Biochemistry, Molecular Biology | zane.chen@asdrp.org

Dr. Chen received his MD, PhD from Oregon Health Sciences University where he elucidated the mechanism of carnitine acetyltransferase enzymes. At ASDRP, Dr. Chen's lab interfaces biochemistry and molecular biology to address cell signaling pathways relevant in human diseases, particularly in cancers and in metabolic disorders related to diabetes.

Link to Group Website: Link to Group Website: https://sites.google.com/asdrp.org/chen-lab-asdrp

Clinton Cunha, MS | Bioinformatics & Cancer Biology | clinton.cunha@asdrp.org

The Cunha lab is interested in applying heavy duty data analysis and bioinformatics towards understanding gene expression and regulation patterns in colorectal cancer cells as a means to informing the next questions in cancer therapeutics.

Link to Group Website: https://sites.google.com/asdrp.org/cunha

Chris DeGrendele, PhD | Applied Physics | chris.degrendele@asdrp.org

The DeGrendele lab works on developing models for fluid dynamics that help to simulate challenging physical environments. We are looking for enthusiastic theoretical physicists and those interested in the intersection of applied mathematics and applied physics!

Link to Group Website: https://sites.google.com/asdrp.org/degrendele

Pragati Dhamale, MS | Machine learning & Artificial Intelligence | pragati.dharmale@asdrp.org
Pragati Dharmale has 14 years of academia / industry research experience and received her M. Eng in Digital electronics and M.S. in computer science from Southern New Hampshire University, NH. Her research interest includes application of EEG analysis with machine learning (ML) and artificial intelligence (AI), as well as STEM based applications designed for Raspberry PI with Python programming.
Link to Group Website: https://sites.google.com/asdrp.org/dharmale

Robert Downing, MS | Data Science & Machine Learning | robert.downing@asdrp.org
Prof. Downing's group at ASDRP is a diverse and dynamic group of aspiring data scientists. We see data and machine learning as being central to everything from environmental analysis to neuroscience to decryption of medieval manuscripts to searching the night sky for potentially habitable exoplanets.
Link to Group Website: https://sites.google.com/asdrp.org/downing

Sahar Jahanikia, MS | Cognitive Science & Neuroinformatics | sahar.jahanikia@asdrp.org
The Jahanikia "neuro lab" at ASDRP embodies cross-disciplinary research in the fields of cognitive science, neuroimaging by fMRI, application development, bioinformatics, and neuroinformatics - using data and cognitive science to understand human behavior.
Link to Group Website: www.jneurolab.org

Martin Kushnerov, MS | Genomics | martin.kushnerov@asdrp.org
The Kushnerov lab at ASDRP is recruiting new students interested in doing science at the interface of genetics, genomics, and bioinformatics.
Link to Group Website: https://sites.google.com/asdrp.org/kushnerov

Prabin Lamichhane, MS | Mathematics, Data Science & Statistics | prabin.lamichhane@asdrp.org
Prabin is experienced in utilizing a diverse set of tools, including Python, R, and SQL, to analyze large datasets, identify patterns, and develop data-driven strategies. Outside of the professional sphere, Prabin is an advocate for and actively participates in data science communities, attends industry conferences, and contributes insights to open-source projects and informatics.
Link to Group Website: https://sites.google.com/asdrp.org/Lamichhane

Joseph Laurienzo, MS | Applied mathematics | joseph.laurienzo@asdrp.org
Mr. Laurienzo received his BS in math and physics and MS in applied math from Case Western Reserve University, along with a BA in Japanese, and has collaborated with the University of Tokyo in condensed matter physics. Joseph's research interests include the application of novel mathematical techniques in the assessment of brain activity patterns and constructing cognitive and phenomenological models, as well as game theory, and research projects under his supervision will likewise embody this interdisciplinary spirit.
Link to Group Website: https://sites.google.com/asdrp.org/laurienzo

Dennis Liu, MS | Computer Science, Software Engineering | dennis.liu@asdrp.org
Dennis Liu, a product of Georgia Tech (Master's in Computer Science) and UC San Diego (cognitive science and computer science) with a specific interest in human-computer interactions. Mr. Liu comes to ASDRP with several years of experience from industry at IBM Quantum and at Vizio.

Link to Group Website: https://sites.google.com/asdrp.org/dennisliu

Viktoriia Liu, PhD | Quantum Mechanics and Computer Science | viktoriia.liu@asdrp.org
Dr. Liu received her PhD in physical chemistry from UC Riverside. Her lab at ASDRP works on using machine learning models to identify applications of multiple regression models and applied artificial intelligence for biological and biomedical applications, particularly focused on cancer detection and pathology detection.
Link to Group Website: https://sites.google.com/asdrp.org/liulab

Larry McMahan, MS, PhD | Quantum Mechanics & Computer Science | larry.mcmahan@asdrp.org
Dr. McMahan's research group at ASDRP focuses on two main arenas of research - quantum mechanics (quantum tunneling and computing) and machine learning platforms that have predictive capabilities in understanding societal phenomena such as crime rates, COVID-19 rates, etc.
Link to Group Website: https://sites.google.com/asdrp.org/mcmahan

Phil Mui, PhD | Artificial Intelligence & Machine Learning | phil.mui@asdrp.org
Dr. Mui's research group at ASDRP actively works on a number of areas related to the role of intrinsic biases in artificial intelligence and machine learning algorithms and their impact on society - issues such as biases intrinsic in facial recognition, occupational demographics, and news aggregators. Email Dr. Mui at phil.mui@asdrp.org for permission to join with a Curriculum Vitae and most recent resume.
Link to Group Website: https://sites.google.com/asdrp.org/mui

Edward Njoo, PhD | Organic & Medicinal Chemistry | edward.njoo@asdrp.org
The Njoo group at ASDRP focuses on organic chemistry as a means of developing next-generation small molecule therapeutics, identifying strategies for natural product total syntheses, developing more efficient catalyst platforms for C-C and C-F bond formation events, and using benchtop NMR for mechanistic probing and real time reaction monitoring. Email Dr. Njoo at edward.njoo@asdrp.org to request permission to join and to schedule an interview.
Link to Group Website: www.njoolab.org

Joseph Pazzi, PhD | Bioengineering | joey.pazzi@asdrp.org
Dr. Joseph Pazzi received his PhD in bioengineering from UC Merced. Joey has nearly a decade of experience in industry and in academic life science R&D and is starting up his research group here at ASDRP, where students will work on developing giant unilamellar vesicles (GUV's) and lignin-based biopolymers for new applications in drug delivery and medical diagnostics
Link to Group Website: https://sites.google.com/asdrp.org/pazzi

Bharat Poudyal, MS, PhD | Biotechnology & Agronomy | bharat.poudyal@asdrp.org
The Poudyal lab at ASDRP is doing science at the interface of biotechnology, plant biology, sustainable practice, and human health with a focus on crop engineering.
Link to Group Website: https://sites.google.com/asdrp.org/poudyal

Huifang Qin, MS, PhD | Artificial Intelligence | huifang.qin@asdrp.org
Dr. Qin received her PhD from UC Berkeley and has several years of experience in applied data science and machine learning models in industry. She is starting up several projects and is hoping to recruit ASDRP students interested in applied machine learning.
Link to Group Website: https://sites.google.com/asdrp.org/qin

Gayathri Renganathan, MPharm | Biochemistry & Chemical Biology | gayathri.renganathan@asdrp.org
Ms. Renganathan's research group focuses on using biochemistry and chemical biology to design and develop systems for biomedical application, including drug delivery, pharmaceutical analysis, lipid nanoparticle synthesis, and natural product / pharmacology research.
Link to Group Website: https://sites.google.com/asdrp.org/renganathan

Vasudha Salgotra, MS | Bioanalytical Chemistry | vasudha.salgotra@asdrp.org
Vasudha Salgotra is a research professional with a background in analytical chemistry and pharmacy. Her lab works on validating plate-based immunoassays (ELISAs) and other bioanalytical techniques to study the binding affinity of drugs to targets, and to study the absorption, distribution, metabolism, and excretion (ADME) properties to understand the pharmacokinetics of the compounds. Additionally this lab will focus on the use of in silico modeling software, in vitro experiments in the lab, and in vivo studies in animals to study the pharmacokinetic properties of small molecules and biologics.
Link to Group Website: https://sites.google.com/asdrp.org/salgotra

Ana Simoes-Pazzi, PhD | Data Science, Psychology, Analytics | ana.simoes-pazzi@asdrp.org
Ana Simoes is a Ph.D. in Psychological Sciences from the University of California, Merced, where she specialized in Quantitative Methods, Measurement, and Statistics. Her research focused on advanced statistical methods in psychology, such as factor analysis and structural equation modeling for both continuous and categorical variables. Ana is currently a lecturer at UC Merced, teaching undergraduate courses in psychology, including Introduction to Psychology, Analysis of Psychological Data, and Research Methods. Originally from Brazil, Ana combines her diverse academic background with practical skills in programming and data science. At ASDRP, she aspires to continue her research in the field of applied sports analytics.
Link to Group Website: https://sites.google.com/asdrp.org/simoes-pazzi

Nataliya Starostina, MS, PhD | Materials Science, Materials Engineering | nataliya.starostina@asdrp.org
Dr. Starostina is an expert in inorganic material, metallurgical engineering, and using electron microscopy to study nanomaterials. Dr. Starostina leads a group on developing next generation inorganic materials.
Link to Group Website: https://sites.google.com/asdrp.org/starostina

Suresh Subramaniam, MS | Data Science | suresh.subramaniam@asdrp.org
The Subramaniam group at ASDRP works on a variety of real-world applications of data science, including understanding patterns in COVID-19 spread, the housing market, image analysis and facial feature / emotion recognition platforms.
Link to Group Website: https://sites.google.com/asdrp.org/subramaniam

John Wang, PhD | Molecular & Cellular Biology | john.wang@asdrp.org

The Wang lab is developing precision diagnostics and molecular tools for cancer diagnostics and antibody-based therapeutics. Additionally, Dr. Wang's group uses a combination of protein engineering, cell biology, genetic engineering, and molecular biology tools to develop antibody functionalization strategies that enable preparation of therapeutics.

Link to Group Website: https://sites.google.com/asdrp.org/wang

Akira Yamamoto, MS | Biomaterials Engineering | akira.yamamoto@asdrp.org

The Yamamoto group at ASDRP is involved in working on engineering biomaterials and developing bioanalytical methods for application in the life sciences. Current projects include HPLC method development for ion pair analysis, site-specific antibody modification, RNA condensation, and photocurable hyaluronic acid hydrogel materials.

Link to Group Website: https://sites.google.com/asdrp.org/yamamoto

Tracy Zhang, PhD | Cancer Biology & Oncology | tracy.zhang@asdrp.org

Dr. Zhang is an experienced molecular & cellular, as well as oncology scientist with more than 10 years of experience in both industry and academia, interested in identifying and developing potent tumor targets and new drug candidates for tumor killing. Dr. Zhang has co-authored over twenty peer-reviewed research articles in cancer biology and molecular medicine.

Link to Group Website: https://sites.google.com/asdrp.org/zhang/home