



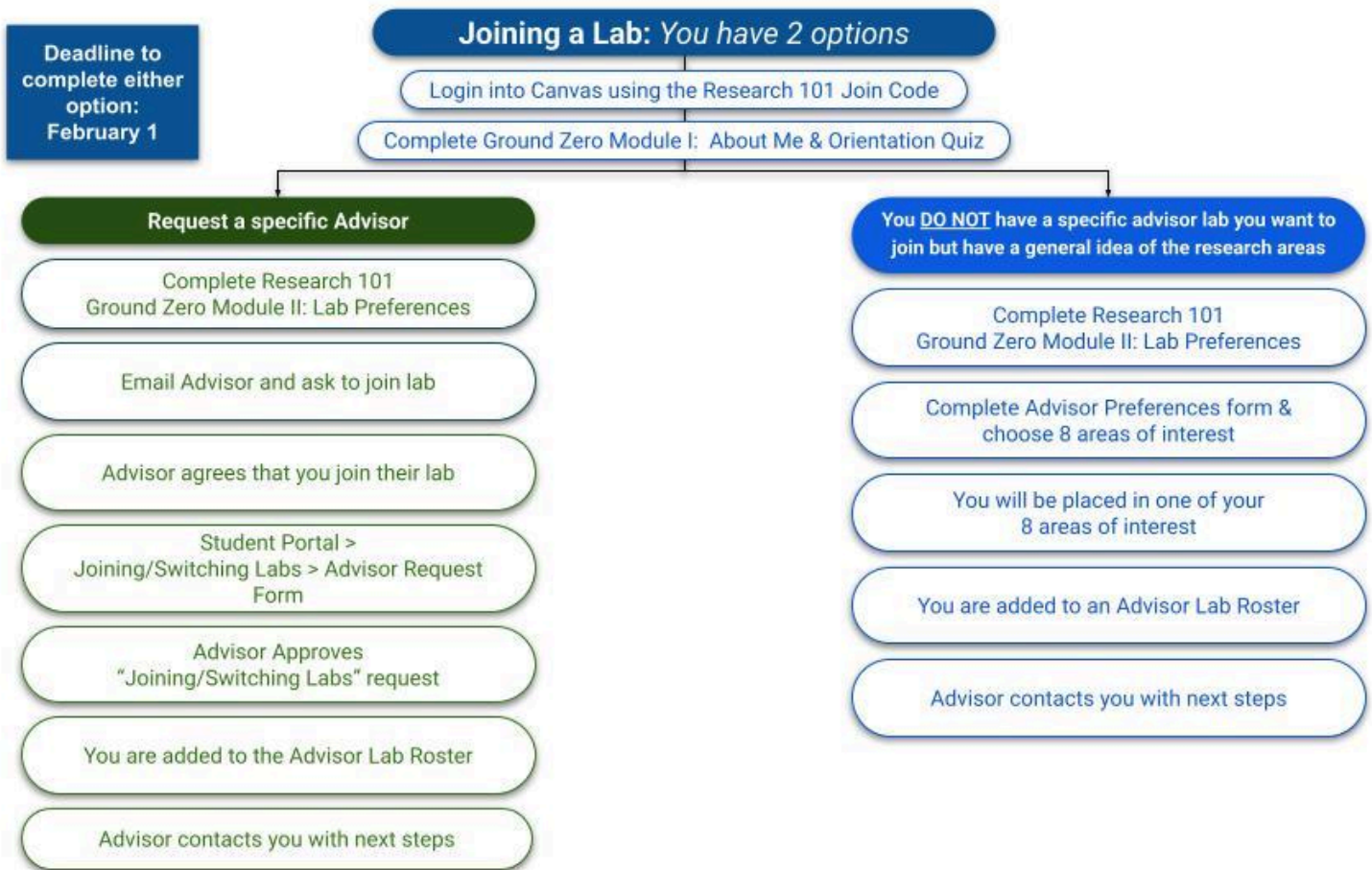
Joining a Research Group | New Admits for the Spring of 2025

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.

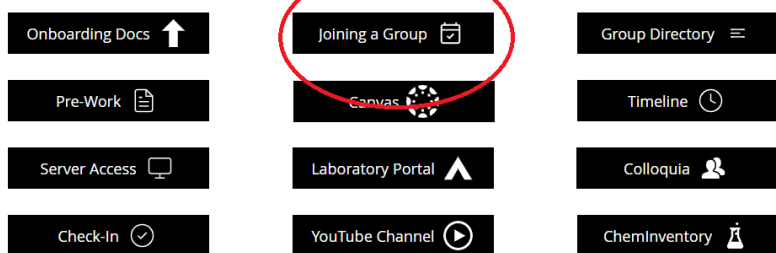
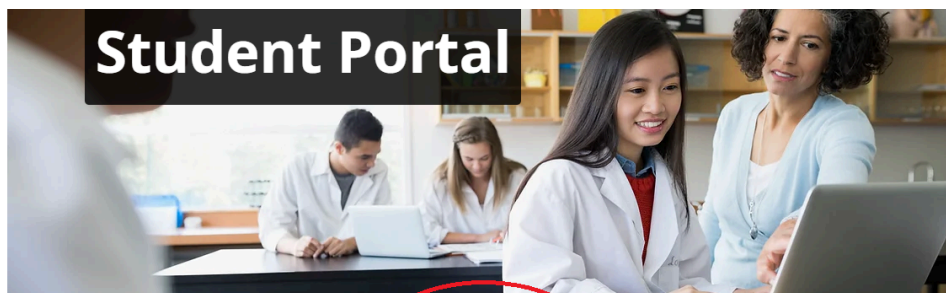
Instructions for joining a research group

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 advisor. 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. Log into **Canvas**. All new students must complete all parts of the "Ground Zero" Modules I & II of Research 101 **before** Requesting an advisor or Submitting Advisor preferences. Research 101 Ground Zero Modules are in Canvas. (see Pre-Work)
5. **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 (see *Pre-Work*)
 - b. Follow the instructions on the Advisor Preferences Form very carefully.
6. **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. The Advisor Request Form is available on your Student Portal (See below).
7. 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.



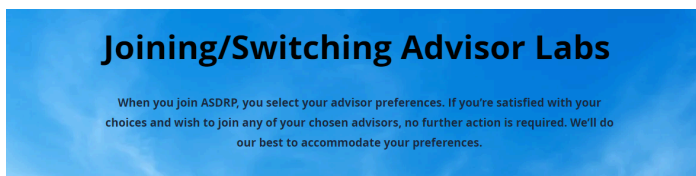
8.

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."



Resources

 [Instructions Doc](#)

<p>Walk-through Video</p> <p>Short 4-minute video explaining the full process and Advisor Request Form</p> 	<p>Advisor Request Form</p> <p>Are you a current student switching labs or a new student who wants to join a specific advisor's lab? Fill out this form</p> 	<p>Labs Accepting Students</p> <p>Check out the ASDRP Lab Availability sheet to see what labs are accepting submissions to join their labs</p> 
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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 /](http://www.njoolab.org/)
PW:WeAreASDRP

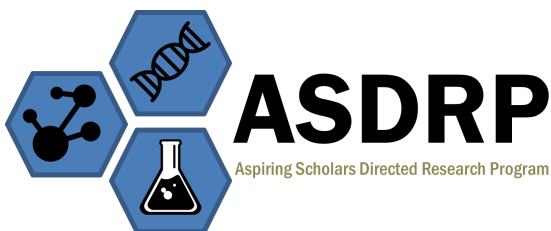


Faculty Research Group Directory, Spring 2025

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](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>



Viktoriiia Liu, PhD | Quantum Mechanics and Computer Science | viktoriiia.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>

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>