FOOTHILL COLLEGE
SCIENCE LEARNING INSTITUTE

SLI STEM Internships Summer 2022: Project Catalog

Updated 4/26/22 (added "with some flexibility" to requirements under #22 and #23)
TOTAL 28 PROJECTS as of 4/22/22 (added under "Computer Science")
CONTINUE TO CHECK BACK TO SEE IF THERE HAVE BEEN PROJECTS ADDED. THIS DOCUMENT WILL BE DATED EACH TIME IT IS UPDATED.

The following are the possible internship projects you will be working on this summer if selected. In your application, you will be asked to mark all that you are interested in. You may select no more than 5 to apply to.

There are two parts of this catalog:

- **Quick Links Table of Contents** – contains key information about each project. Click on the hyperlink to go to the full description below.
- **Project Full Descriptions** – read each project's full description to make sure this is a project you are interested in. In your application, you will want to explain your interest in each of your selected projects.

You will see that some projects are listed multiple times because they are interdisciplinary or cross disciplinary. Click here to see a complete Project List.

Read through each description carefully to see if

1) You have the skills that the mentor/ supervisor is asking for.
2) You have an interest in the project.
3) The modality works for you – several of these are in-person, either fully or partially. You will need to provide your own transportation to the institution and some have parking fees.
4) Use this as a guide as you fill out the application. READ IN FULL DETAIL!

All internships start on Monday, 6/27/22 with a half day training. Nine week internships run through Friday, 8/26/22, and ten week internships run through 9/2/22. Note that there are a few internships that run eight weeks and one internship that runs for six weeks. Read the schedule/ stipend carefully.

If you have any questions, please reach out to the SLI Director, Sophia Kim at kimsophia@fhda.edu or Marissa Yañez at yanezmarissa@fhda.edu. We are happy to provide support with the application process. Find out more at the website: https://foothill.edu/sli/internships/summer.html

---

QUICK LINKS TABLE OF CONTENTS

BE SURE TO REVIEW THE FULL DESCRIPTION BELOW THIS TABLE OF CONTENTS!
****Some projects are cross-disciplinary and may appear under multiple disciplines***

BIOLOGY/ CHEMISTRY				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/ Stipend**
1. Study of structure and function of protein from common mold @ Stanford	#Biochemistry #Molecular_Biology #Lab	The work requires manual dexterity as we used pipettors and tiny tools to handle crystals. Knowledge on preparing buffer solutions,	Fully In-person	**REGULAR**: 15 hours per week for 10

		using pH-meter, balances, calculating molarity, are good to have, but not necessary.		weeks / $2500
3. Wildfire generated toxins and ecosystem recovery @ Stanford	#Climate_Change #Environmental_Science #Field_Work #Lab	General chemistry and biology courses preferred but not required.	Fully In-person OR Hybrid - (some In-person hours & some remote hours)	**REGULAR**: 20 hours per week for 10 weeks / $3400
4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents @ Stanford	#Neuroscience #Data_Science #Computer_Science #Psychology	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.	Fully remote/ online	**MICRO**: 6-7 hours per week for 9 weeks / $1000
5. Exploring how plant compounds influence mammalian immune responses @ Stanford	#Molecular_Biology #Plant_Biology	A general biology class may provide helpful background, however all knowledge and skills related to this project will be taught during the internship	Fully in person preferred but flexible	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
18. Injectable Hydrogels for the Delivery of Gene-Based Myocardial Infarction Therapy @ Stanford	#Biotech #Chemistry #Lab #Medicine	Interest in science and a passion to develop tools for the betterment of society.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 9 weeks / $3000
21. Investigation for Protein Stabilizing Compounds in Liquid and Hydrogel Solutions @ Intact Therapeutics	#Biotech #Chemistry #Lab #Medicine	At least one quarter of Biology and/or Chemistry with Lab Required. Student should have a basic understanding of lab safety and how to document experiments. Basic data analysis/visualization using spreadsheets is helpful as well.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400

22. Synthesis and characterization of electroactive polymers @ SJSU	#Organic_Chemistry #Lab	at least two quarters of organic chemistry (chem 12A and 12B) (with some flexibility)	In-person	**REGULAR**: 30 hours per week for 8 weeks/ $4000
23. Synthesizing and characterizing thin films in nuclear science @ SJSU	#Chemistry #Lab	completion of Chemistry 1 series at Foothill (with some flexibility)	In-person	**REGULAR**: 30 hours per week for 8 weeks/ $4000
25. R&D/Quality Internship at Bulletproof 360	#Health #Nutrition #Biology #Chemistry	Biology/Chemistry or related field major with an interest in the food or CPG space	Fully remote/ online	**REGULAR**: 15 hours per week for 9 weeks / $2200

COMPUTER SCIENCE				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/Stipend**
4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents @ Stanford	#Neuroscience #Data_Science #Computer_Science #Psychology	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.	Fully remote/ online	**MICRO**: 6-7 hours per week for 9 weeks / $1000
6. Python and Matlab programming for particle accelerators @ SLAC	#Physics #Computer_Science	Python or Matlab experience would help, but is not required (can learn on the job). A course or two in physics would also help, but again is not required.	Flexible (Can be fully in-person OR hybrid OR fully remote)	**REGULAR**: 20 hours per week for 9 weeks / $3000
7. Software Engineering Intern @ Avenda Health	#Computer_Science #Biotech	Experience with a programming language such as Javascript, Python, C++ etc through coursework or personal projects. At least 1 quarter of computer-science or equivalent required.	Fully remote with in-person options if desired	**REGULAR:** 20 hours per week for 10 weeks / $3400

8. RISC-V Microprocessor Validation @ Aril Computer Corp	#Computer_Science #Engineering	At least 1 quarter of computer programming or equivalent required (CS 1A, 2A or 3A). Familiarity with C programming language is helpful. CS10 is ideal but not a requirement.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400
9. Research Associate @ iSono Health	#Computer_Science #Engineering #Machine_Learning	Interest in engineering and/or computer-science is preferable. Some basic coding experience is helpful, but not required as it can be taught during the internship.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400
10. Social media web scraping and data cleaning @ DARC (Stanford)	#Data_Science #Computer_Science	- Cumulative GPA of 2.5 or above - No prior internship experience - Financial Aid needs - Computer Science major or basic python programming skills (e.g., completion of at least 2 quarters of programming courses in python or equivalent) - Enrollment in the Data Analytics Certificate program is helpful	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 6 weeks / $2000
11. Identifying critical features of mini-earthquakes @ Stanford	#Computer_Science #Machine_Learning #Physics	Student should have an interest in learning machine learning methods! Some knowledge of waves (e.g. 1 quarter of Physics required, 2A or 4A), Basic python programming (e.g. 1 quarter of programming in Python or equivalent is required), Exposure to machine learning methods is helpful.	Hybrid (remote and in-person)	**REGULAR**: 15 hours per week for 9 weeks / $2200
15. Exploring radar for two-car target tracking @ Stanford	#Engineering #Computer_Science #Physics	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs and radars is preferred. Exposure to linear algebra and differential equations is helpful.	Fully remote/ online	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
16. Biomedical data fusion with machine learning @ Stanford	#Medicine #Computer_Science #Machine_Learning #Molecular_Biology	Coding: students should be comfortable coding in python, R or equivalent programming language (At least 1 quarter of computer-programming or equivalent is highly recommended). First basics of mathematics (for example, at least 1 quarter of calculus or Statistics is highly recommended). Some knowledge of molecular biology & medicine is a plus.	Flexible (Can be fully in-person OR hybrid OR fully remote depending on needs & preference of intern)	**REGULAR**: 20 hours per week for 10 weeks / $3400

26. AI Use Cases and ML Models Evaluation Project Intern @ Esperanto Technologies	#Computer_Science #AI	The projects in this area will require interns with some programming background (Python and C++), understanding of AI (deep learning) capabilities, and strong interest in use cases and marketing value propositions.	Flexible with in-person attendance at weekly meeting	**REGULAR**: 20 hours per week for 10 weeks / $3400 *(plus extra from company)*
27. AI Demo Project Intern @ Esperanto Technologies	#Computer_Science #AI	The projects in this area will require interns to use their backgrounds in computer programming (Python and/or C++) along with understanding of Esperanto's products to support our marketing efforts. Background in AI is useful but not necessary.	Flexible with in-person attendance at weekly meeting	**REGULAR**: 20 hours per week for 10 weeks / $3400 *(plus extra from company)*
28. AI Visualization Project Intern @ Esperanto Technologies	#Computer_Science #AI #Data_Visualization	The project in this area will require interns with strong computer programming backgrounds (Python and C++) as well interest and understanding in statistics and basics of visualization best practices. Familiarity with AI concepts are useful but not necessary.	Flexible with in-person attendance at weekly meeting	**REGULAR**: 20 hours per week for 10 weeks / $3400 *(plus extra from company)*

EMPOWERMENT				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/ Stipend**
24. SLI Summer Leadership Fellow @ Foothill College SLI	#Leadership #STEM_education #STEMimpact	interest in mentoring new students, experience with facilitating workshops (or interest in learning!), understanding of the various resources at Foothill to share with new students, STEM major preferable	In-person	**REGULAR**: total 240 hours over 8 weeks (schedule will vary from week to week) / $4000

ENGINEERING				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/ Stipend**
9. Research Associate @ iSono Health	#Computer_Science #Engineering #Machine_Learning	Interest in engineering and/or computer-science is preferable. Some basic coding experience is helpful, but not required as it can be taught during the internship.	Flexible (Can be fully in-person OR hybrid OR fully	**REGULAR**: 20 hours per week for 10 weeks / $3400

			remote depending on needs & preference of intern)	
12. Mechanical behavior of additive manufactured polymers and composites @ SJSU	#CAD #Engineering	At least 1 quarter of calculus based physics (Physics 4A) is required. Engineering 35 (Statics) is helpful. Basic knowledge of statistics is helpful. Materials and mechanics background would be good. Hands on lab skills will be needed.	Fully in person	**REGULAR**: 15 hours per week for 9 weeks / $2200
13. New materials as inks for 3D bio-printing @ Stanford	#3D_Printing #CAD #Engineering #Medicine	Prior coursework in biology, chemistry, and/or physics is encouraged. Experience with 3D modeling (CAD) and/or 3D printing is also helpful but not required.	Fully in person OR Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 9 weeks / $3000
14. R&D and Manufacturing Intern @ Potrero Medical	#Health #Engineering #CAD #Medical_Technology	-Strong Mathematics and Writing required (At least Math 1A and English 1A required) -Laboratory testing and Lab Report writing experience preferred -3D modeling (CAD) and engineering drawing generation is helpful -Physics coursework is helpful -General machine shop knowledge (hand tools) is helpful	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400
15. Exploring radar for two-car target tracking @ Stanford	#Engineering #Computer_Science #Physics	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs and radars is preferred. Exposure to linear algebra and differential equations is helpful.	Fully remote/ online	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000

MEDICINE/ BIOTECH				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/Stipend**
2. Product Intern @ Digbi Health	#Health #Medicine #Nutrition #Science_Communication	A passion and interest in food, nutrition, health. Basic understanding of common types of cuisine. Excellent written communication skills. Science research experience is preferable	Fully remote/ online	**REGULAR**: 20 hours per week for 10 weeks / $3400

		but not required. A strong command of the English language and the ability to write a compelling story is a plus		
13. New materials as inks for 3D bio-printing @ Stanford	#3D_Printing #CAD #Engineering #Medicine	Prior coursework in biology, chemistry, and/or physics is encouraged. Experience with 3D modeling (CAD) and/or 3D printing is also helpful but not required.	Fully in-person OR Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 9 weeks / $3000
14. R&D and Manufacturing Intern @ Potrero Medical	#Health #Engineering #CAD #Medical_Technology	-Strong Mathematics and Writing required (At least Math 1A and English 1A required) -Laboratory testing and Lab Report writing experience preferred -3D modeling (CAD) and engineering drawing generation is helpful -Physics coursework is helpful -General machine shop knowledge (hand tools) is helpful	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400
16. Biomedical data fusion with machine learning @ Stanford	#Medicine #Computer_Science #Machine_Learning #Molecular_Biology	Coding: students should be comfortable coding in python, R or equivalent programming language (At least 1 quarter of computer-programming or equivalent is highly recommended). First basics of mathematics (for example, at least 1 quarter of calculus or Statistics is highly recommended). Some knowledge of molecular biology & medicine is a plus.	Flexible (Can be fully in-person OR hybrid OR fully remote depending on needs & preference of intern)	**REGULAR**: 20 hours per week for 10 weeks / $3400
17. Research and Development Intern @ Digbi Health	#Biotech #Health #Nutrition #Science_Communication	Excellent written communication skills. A strong command of the English language and the ability to write a compelling story is a must. Ability to read complex research material. Ability	Fully remote/ online	**REGULAR**: 20 hours per week for 10 weeks / $3400

		to work in dynamic, fast-paced working conditions.		
18. Injectable Hydrogels for the Delivery of Gene-Based Myocardial Infarction Therapy @ Stanford	#Biotech #Chemistry #Lab #Medicine	Interest in science and a passion to develop tools for the betterment of society.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 9 weeks / $3000
19. Quality Associate @ iSono Health	#Lab #Biotech #Medical_Technology	A student with laboratory experience is preferred (ideally at least 1 quarter of a STEM class that includes a lab)	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400
21. Investigation for Protein Stabilizing Compounds in Liquid and Hydrogel Solutions @ Intact Therapeutics	#Biotech #Chemistry #Lab #Medicine	At least one quarter of Biology and/or Chemistry with Lab Required. Student should have a basic understanding of lab safety and how to document experiments. Basic data analysis/visualization using spreadsheets is helpful as well.	Hybrid (remote and in-person)	**REGULAR**: 20 hours per week for 10 weeks / $3400

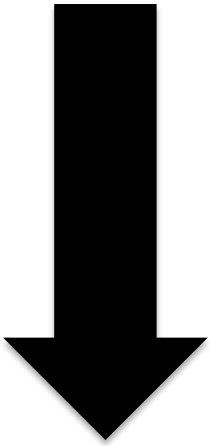
PHYSICS				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/ Stipend**
6. Python and Matlab programming for particle accelerators @ SLAC	#Physics #Computer_Science	Python or Matlab experience would help, but is not required (can learn on the job). A course or two in physics would also help, but again is not required.	Flexible (Can be fully in-person OR hybrid OR fully remote)	**REGULAR**: 20 hours per week for 9 weeks / $3000
11. Identifying critical features of mini-earthquakes @ Stanford	#Computer_Science #Machine_Learning #Physics	Student should have an interest in learning machine learning methods! Some knowledge of waves (e.g. 1 quarter of Physics required, 2A or 4A), Basic python programming (e.g. 1 quarter of programming in Python or equivalent is required), Exposure to machine learning methods is helpful.	Hybrid (remote and in-person)	**REGULAR**: 15 hours per week for 9 weeks / $2200
15. Exploring radar for two-car target tracking @ Stanford	#Engineering #Computer_Science #Physics	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs	Fully remote/ online	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000

		and radars is preferred. Exposure to linear algebra and differential equations is helpful.		

PSYCHOLOGY				
Project Title	**Keywords**	**Required Skills**	**Modality**	**Schedule/ Stipend**
4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents @ Stanford	#Neuroscience #Data_Science #Computer_Science #Psychology	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.	Fully remote/ online	**MICRO**: 6-7 hours per week for 9 weeks / $1000
20. Lifting the Bar: Intervening At School to Reduce Juvenile Recidivism @ Stanford	#Psychology #Qualitative_Research	No prior research experience is required! We're looking for someone who is: - interested in social psychology and education - highly detail-oriented - passionate and curious - eager to learn - passionate about social/criminal justice * some experience with qualitative data (collecting/analyzing) helps but isn't required	Fully remote/ online	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000

KEEP READING BELOW FOR DETAILED DESCRIPTIONS OF THE ABOVE OPPORTUNITIES.

Make sure you read the details as you make your selections of what project you'd be interested in!



PROJECT FULL DESCRIPTIONS

BIOLOGY/ CHEMISTRY

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**1. Study of structure and function of protein from common mold @ Stanford**
Institution and affiliation	Stanford University/ ChEM-H Institute
Keywords	#Biochemistry, #Molecular_Biology, #Lab
Institution Address	290 Jane Stanford Way, Stanford, CA
Mentor/ Supervisor	Daniel Fernandez
Mentor short bio	I'm a quiet person that enjoys much doing research. You mostly find me around the lab, if not I enjoy much biking the area, watching soccer, or reading books.
Project description	Common mold disperses into the air as spores that float freely. In our body, the immune system keeps inhaled spores under control, so that the mold or fungus cell cannot grow. However, in hospitalized individuals undergoing transplants, or patients with depressed immune system, the fungus cell may grow causing tissue damage and breaking down the lung protein structure, debilitating it. The fungus uses specialized proteins to destroy lung protein. Our understanding of their mechanism of action is partial and we want to study in the laboratory what these proteins do and what three-dimensional structure they have. We will use methodologies from biochemistry, molecular biology, and crystallography to recombinantly produce, purify, and crystallize proteins of interest. The work will involve: a) producing the protein of interest ("production") using the well-known E. coli system; b) isolating the protein of interest ("purification") using advanced instruments like FPLC and diverse separative columns; c) preparing protein crystals ("crystallization") by mixing the protein sample with combinations of reagents in microplate format; d) handling crystals under the microscope and obtaining the three-dimensional structure by X-ray diffraction ("structure solution").
Required skills	The work requires manual dexterity as we used pipettors and tiny tools to handle crystals. Knowledge on preparing buffer solutions, using pH-meter, balances, calculating molarity, are good to have, but not necessary.
Modality	Fully in-person
Schedule/ stipend	**REGULAR**: 15 hours per week for 10 weeks / $2500
Selection process	Mentor will review a small (3 - 5) set of student applications and also interview finalists before making a final offer.

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**3. Wildfire generated toxins and ecosystem recovery at Stanford**
Keywords	#Climate_Change, #Environmental_Science, #Field_Work, #Lab

Institution	Stanford University
Lab website	https://soils.sites.stanford.edu/
Lab description	Research University- Fendorf Lab in Environmental and Soil Biogeochemistry
Company address	367 Panama Mall, Stanford, CA 94305
Mentor/ Supervisor	Claudia Avila
Project description	Elevated temperatures coupled with extended drought resulting from climate change have increased wildfire risks across California. Thirteen of the twenty most destructive wildfires on record have occurred within the past five years and are expected to increase in frequency and intensity. In addition to acute localized fire hazards, degraded air quality from smoke and dust impose disseminated and prolonged health risks. One large component of wildfire smoke and dust is derived from combustion of plant material; however, ash compositional differences and their associated exposure risks based on vegetation type and fire severity are poorly understood. Plant ash can contain concentrated toxic metals that originate from soils. When inhaled as smoke or dust, they can bring about harmful health effects. Additionally, the plant ash and thermally transformed surface soils represent the growth media for rebounding microbial communities. The physical-chemical alterations of plants and soils post-fire can affect bacterial and fungal community composition, which is important for ecological recovery initiatives. For example, heat generated by wildfires can alter soil properties that negatively impact the fungi and bacteria. These microorganisms can assist nutrient cycling and other ecosystem recovery functions. Here we have two proposed projects where we ask (1) how does varying fire severity and vegetation type affect ash toxicity? and (2) how does post-wildfire soil and ash influence microbial communities that serve as the basis for ecosystem recovery? We seek a summer intern to work on already established field sites in Sonoma, Napa, and Lake counties across the North Coast Range of California. Both projects include a wide range of soil analyses, such as lab extractions to measure metal content, and microscopic analysis of ash and soil particles. The projects diverge, however, with one (“plant project”) focusing on the plant species (and resulting ash) and the other (“microbial ecology project”) on the soil microbial communities serving as the basis for ecosystem recovery. For the plant project, additional lab-based measurements will include homogenizing and ashing different vegetation types, analyzing ash microscopically, and estimating toxicity by simulated lung fluid extractions. For the microbial ecology project, additional techniques include isolating, culturing and identifying fungal/bacterial communities in a range of post-wildfire soils using PCR and DNA sequencing. From pure cultures, we will archive representative isolates that can be applied for future recovery initiatives in wildland soils and plants.

	In both projects, field and lab experience will be gained but not required to apply. Some basic chemistry and biology coursework will be useful but by no means necessary, your mentors will help guide and teach you the skills necessary to continue as an independent researcher.
Mentor short bio	Holá! I am Claudia Christine Avila (she/her) and I am a postdoc at Stanford. I received my B.S. and Ph.D. from UC Riverside in Environmental Sciences but before those degrees I was a community college student at Riverside City College. I am a soil biogeochemist, which means I use a variety of tools that are shared in biology, chemistry, and geology to evaluate soils. In addition to my research, I was previously an adjunct faculty member at my CC alma mater and at Cal State San Marcos teaching Environmental Sciences, Biology, and Environmental Studies but I am an educator at heart so I live for mentorship and any opportunities to teach science hands-on. I am also a *chicana*, a mother, and a roller skater. (You can find more information at xingonadirtscience.com)
Required skills	General chemistry and biology courses preferred but not required.
# of interns	1
Modality	Fully in-person OR Hybrid (some in-person hours and some remote hours)
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Mentor will review a small (3 - 5) set of student applications and pick my 1 or 2 top choices to make offers to.

DISCIPLINE: BIOLOGY/ CHEMISTRY & COMPUTER SCIENCE & PSYCHOLOGY	
Project title	**4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents at Stanford**
Keywords	#Neuroscience, #Data_Science, #Computer_Science, #Psychology
Mentor/ Supervisor	Gabriel Reyes
Institution and affiliation	Stanford University/ Graduate School of Education
Institution address	485 Lasuen Mall, Stanford, CA
Project description	A growing number of cognitive neuroscientists are researching how poverty affects brain development and behavior, but a significant problem in the field is that many conceptualize poverty differently. Various measures currently exist to capture poverty — income, socioeconomic status (SES), income-to-needs ratio, questionnaires on material deprivation — but identifying which measure precisely and accurately captures the lived experiences of those from low-income backgrounds is not quite clear. To better understand how poverty impacts cognitive and neural systems integral to learning and memory, it is critical that we understand how this is defined and analyzed. Therefore, the purpose of this project is two fold: the first is to examine if different measures of poverty affect statistical analysis on behavioral outcomes in

	psychology using a open access data set (Fragile Families Study; n = 5000); the second is to interrogate whether these current measures are sufficient in elucidating how poverty affects development by establishing a new questionnaire that accurately captures these experiences. Student intern(s) who work on this project will be able to gain experience and support on statistical analysis, R programming, literature review in cognitive neuroscience articles, programming cognitive tasks using jsPsych, survey design using Qualtrics, or other skills that match their own learning goals relevant to this project.
Mentor short bio	My name is Gabriel Reyes, a current PhD student in Developmental and Psychological Sciences at Stanford University on a Knight-Hennessy Scholarship. Originally from Albuquerque, New Mexico and a son of Mexican immigrants, I was the first in my family to graduate from college as a Gates Millennium Scholar, where I earned my Sc.B. in Cognitive Neuroscience from Brown University, as well as an M.S. in Neuroscience & Education from Columbia University. As someone who was born into poverty, I am particularly passionate about science inclusion and promoting people who are systematically excluded from pursuing research experiences as a result of finances; I am a staunch believer that talent is everywhere but opportunities are not. The things I love most in the world are my family (especially my fiancé) , tacos, traveling, movies, and taking long walks (to get tacos).
Required skills	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6- 7 hours per week for 9 weeks / $1000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**5. Exploring how plant compounds influence mammalian immune responses at Stanford**
Keywords	#Biology #Molecular_Biology, #Plant_Biology
Mentor/ Supervisor	Jamie Blum
Institution and affiliation	Stanford University/ Chemical Engineering
Institution address	290 Jane Stanford Way, Stanford, CA

Project description	In this internship, the student will contribute to a project exploring how proteins in food are recognized and responded to by the immune system – leading to acceptance of food or development of food allergies. The student will gain some exposure and experience with molecular biology, immunology, and plant chemistry techniques. Specific goals for the summer may include: development of transgenic plants, profiling expression of genes/proteins in response to exposure to dietary compounds, or measuring induction of tolerance markers in response to food proteins.
Mentor short bio	Jamie is a first year postdoc in Chemical Engineering, with a background in cell biology and nutrition. Her research focuses on the effects of plant metabolites on mammalian consumers. Specifically, she is exploring the contribution of plant metabolites to the development of food allergies and development of tolerance. Outside of the lab, she enjoys escape rooms, knitting, and reading fiction.
Required skills	A general biology class may provide helpful background, however all knowledge and skills related to this project will be taught during the internship
# of interns	1
Modality	Fully in person preferred but flexible
Schedule/ stipend	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
Selection process	Foothill SLI team will match student with mentor

DISCIPLINE: BIOLOGY/ CHEMISTRY & MEDICINE/BIOTECH	
Project title	**18. Injectable Hydrogels for the Delivery of Gene-Based Myocardial Infarction Therapy at Stanford**
Keywords	#Biotech, #Chemistry, #Lab, #Medicine
Company	Stanford University
Company website	https://web.stanford.edu/group/heilshorn/
Company description	The Heilshorn group designs materials that mimic the nano- and micro-scale order found in nature for applications in regenerative medicine, tissue engineering, and biology.
Company address	466 Lomita Mall, Stanford, CA 94305
Mentor/ Supervisor	Renato Navarro
Mentor Short Bio	I am a first-generation, non-traditional postdoctoral fellow in the Material Science and Engineering Department at Stanford University. As a child, my family and I illegally immigrated to the U.S., where my parents worked as migrant workers. My parents, unfortunately, received no formal education, leaving me with minimal guidance and mentorship in the pursuit of a college degree. Not understanding the importance of higher education, I did not attend college immediately after high school but instead pursued a military career. Through my military career, I had the opportunity to interact with officers who mentored me on the importance of higher education, which led me to attend college after my military service. Now I use my non-traditional background as a motivation to pursue an academic career where I can apply my knowledge of biomaterials and regenerative medicine to develop therapies for wounded warriors. Additionally, I try to leverage my unique

	background to mentor underrepresented minorities, first-generation students, and non-traditional students who initially did not see college as an option to achieve their higher education goals.
Project description	Delivery of therapeutics to mechanically active tissues, like the heart, have been notoriously difficult due to low retention and viability of the therapy. Our project will test the suitability of a gel made from recombinant hyaluronic acid (HA) and elastin-like protein (ELP) as a vehicle for a gene-based therapy for myocardial infarction. As part of the project, the student will learn recombinant protein expression and dynamic covalent chemistry strategies for gel fabrication, perform fluorometric assays to ensure therapy linkage with the hydrogel, and test the in-vitro performance of the gel for delivery of the gene-based therapy in rat cardiomyocytes.
Required skills	Interest in science and a passion to develop tools for the betterment of society.
# of interns	1
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: BIOLOGY/ CHEMISTRY & MEDICINE/BIOTECH	
Project title	**21. Investigation for Protein Stabilizing Compounds in Liquid and Hydrogel Solutions at Intact Therapeutics**
Keywords	#Biology #Biotech #Chemistry #Lab #Medicine
Company	Intact Therapeutics
Company website	https://intacttherapeutics.com/
Company description	Intact Therapeutics is a clinical stage, biopharmaceutical company focused on developing targeted therapies for the gastrointestinal tract based on technology developed at Stanford University. Intact's technology is designed to increase local exposure of therapy to diseases affecting the mucosal lining, thereby improving efficacy and increasing patient acceptance.
Company address	2627 Hanover St. Palo Alto, CA 94304
Mentor/ Supervisor	Chris Zhan
Mentor short bio	I am a first-generation immigrant who grew up in the east bay. I attended the Peralta Community Colleges before transferring to UC Berkeley, where I received a B.S. in Chemical Engineering and Material Science. I have 7 years of manufacturing and quality experiences in medical devices where I worked with formulations and drug delivery technologies. I am now a formulation scientist at Intact Therapeutics working on the development of a drug delivery platform using thermosensitive hydrogels.
Project description	Research, plan, and conduct investigational experiments. Prepare buffers, formulations, and other solutions. Assist in formulation characterization works such as protein activity, rheology, pH, and stability. Additional exposures to UV-Vis Spectroscopy, HPLC, electrophoresis, and other investigational techniques as needed.

Required skills	At least one quarter of Biology and/or Chemistry with Lab Required. Student should have a basic understanding of lab safety and how to document experiments. Basic data analysis/visualization using spreadsheets is helpful as well.
# of interns	1
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also MAY interview finalists before making a final offer.

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**22. Synthesis and characterization of electroactive polymers at SJSU**
Keywords	#Organic_Chemistry #Lab
Institution Address	One Washington Square, Duncan Hall, San José
Research Mentor	Dr. Philip Dirlam
Institution and affiliation	San Jose State University, Assistant Professor in Organic Chemistry
Project description	Dr. Dirham's research expertise is in materials chemistry. From his LinkedIn profile: I am versed in synthesis, purification, processing, and characterization of polymers, small molecules, and nano materials. I am also proficient in electrochemistry based techniques with a focus in electrochemical energy storage. Additionally, I have experience with sustainable polymers and green processing techniques for the preparation of foams and hydrogels.I am an educator in the chemical sciences.
Mentor short bio	Dr. Dirlam is a professor at San Jose State University. He guides students through their studies of organic chemistry. In the laboratory he mentors emerging undergraduate scientists in synthesis and characterization of electroactive polymers and their application in energy storage technology. See more on his LinkedIn profile
Required skills	at least two quarters of organic chemistry (chem 12A and 12B) (with some flexibility)
Modality	In- person
Schedule/ stipend	**REGULAR**: 30 hours per week for 8 weeks/ $4000
Selection process	Foothill SLI team will work with chemistry instructor Melody Esfandiari to select students from interested applicants

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**23. Synthesizing and characterizing thin films in nuclear science**
Keywords	#Chemistry #Lab
Institution Address	One Washington Square, Duncan Hall, San José
Research Mentor	Nicholas Esker

Institution and affiliation	San Jose State University, Assistant Professor, Nuclear Chemistry, Physical Chemistry
Project description	Are you interested in where the elements of the periodic table came from? How protons and neutrons come together for form nuclei? The Esker lab explores the extremes of nuclear binding by producing and studying isotopes far from stability in nuclear reactions at particle accelerators. These reactions usually happen between an accelerated ion beam and a thin film target. At SJSU, our group focuses on producing and characterizing these thin films using a variety of chemical and physical techniques. If you're interested in nuclear science, the border between chemistry and physics, or the material science of thin films, please consider reaching out to work in our lab!
Mentor short bio	Dr. Nicholas Esker is an assistant professor of chemistry at SJSU. Originally from Florida, he attended the Wilkes Honors College in Jupiter Fl for his Bachelors in Liberal Arts and Science. He attended UC Berkeley for his graduate studies. His doctoral work focused on building FIONA, a mass separator for superheavy elements. He joined the SJSU chemistry department in Aug 201, where he teaches physical chemistry and nuclear chemistry. His studies nuclear behavior far from stability, focusing on nuclear reactions using recoil mass spectrometry, thin-film production techniques (targetry), and nuclear science education / outreach.
Required skills	completion of Chemistry 1 series at Foothill (with some flexibility)
Modality	In- person
Schedule/ stipend	**REGULAR**: 30 hours per week for 8 weeks/ $4000
Selection process	Foothill SLI team will work with chemistry instructor Melody Esfandiari to select students from interested applicants

DISCIPLINE: BIOLOGY/ CHEMISTRY	
Project title	**25. R&D/Quality Internship at Bulletproof 360**
Keywords	#Health, #Nutrition, #Biology, #Chemistry
Company	Bulletproof 360
Company website	www.bulletproof.com
Company description	At Bulletproof, we believe that the right nutrients can help you tap into your potential and feel your best every day. We create products that fuel your path to greatness. The Bulletproof difference: We challenge nutrition norms to create products that help you feel your best. We provide clean coffee, keto-friendly snacks and proven supplements made with carefully selected ingredients.
Company address	1012 1st Ave #400 Seattle, WA 98104
Supervisor	Stephanie Hoffman
Project description	Collection and updating of all master formulas from co-manufacturing partners. Ensure master formulas, product specifications and current product label are all located in the same space. Ensure all outdated copies are archived. Collection and organization of all pertinent QA Documentation from all co-manufacturing partners.

	This will include the development of an organizational system, one which will alert the QA Leads to expiration dates of various documents, so that Bulletproof can remain within regulatory compliance for all co-man documents. Finally, each intern will pick one technical topic, do research to educate themselves, then present (30-45 minutes) to the Technical Team as part of our Technical Learning Series. (examples of past presentations: Agglomeration – what it is and how it can be useful in different product development scenarios, Rancidity – what it is, how to measure it, how to prevent it)
Required skills	Ideally, we'd like a Biology/Chemistry or related field major with an interest in the food or CPG space
# of interns	2
Modality	Fully remote
Schedule/ stipend	**REGULAR**: 15 hours per week for 9 weeks / $2200
Selection process	Mentor will review a small (3 - 5) set of student applications and also interview before making a final offer.

COMPUTER SCIENCE

DISCIPLINE: BIOLOGY/ CHEMISTRY & COMPUTER SCIENCE & PSYCHOLOGY	
Project title	**4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents at Stanford**
Keywords	#Neuroscience, #Data_Science, #Computer_Science, #Psychology
Mentor/ Supervisor	Gabriel Reyes
Institution and affiliation	Stanford University/ Graduate School of Education
Institution address	485 Lasuen Mall, Stanford, CA
Project description	A growing number of cognitive neuroscientists are researching how poverty affects brain development and behavior, but a significant problem in the field is that many conceptualize poverty differently. Various measures currently exist to capture poverty — income, socioeconomic status (SES), income-to-needs ratio, questionnaires on material deprivation — but identifying which measure precisely and accurately captures the lived experiences of those from low-income backgrounds is not quite clear. To better understand how poverty impacts cognitive and neural systems integral to learning and memory, it is critical that we understand how this is defined and analyzed. Therefore, the purpose of this project is two fold: the first is to examine if different measures of poverty affect statistical analysis on behavioral outcomes in psychology using a open access data set (Fragile Families Study; n = 5000); the second is to interrogate whether these current measures are sufficient in elucidating how poverty affects development by establishing a new questionnaire that accurately captures these experiences.

	Student intern(s) who work on this project will be able to gain experience and support on statistical analysis, R programming, literature review in cognitive neuroscience articles, programming cognitive tasks using jsPsych, survey design using Qualtrics, or other skills that match their own learning goals relevant to this project.
Mentor short bio	My name is Gabriel Reyes, a current PhD student in Developmental and Psychological Sciences at Stanford University on a Knight-Hennessy Scholarship. Originally from Albuquerque, New Mexico and a son of Mexican immigrants, I was the first in my family to graduate from college as a Gates Millennium Scholar, where I earned my Sc.B. in Cognitive Neuroscience from Brown University, as well as an M.S. in Neuroscience & Education from Columbia University. As someone who was born into poverty, I am particularly passionate about science inclusion and promoting people who are systematically excluded from pursuing research experiences as a result of finances; I am a staunch believer that talent is everywhere but opportunities are not. The things I love most in the world are my family (especially my fiancé) , tacos, traveling, movies, and taking long walks (to get tacos).
Required skills	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6- 7 hours per week for 9 weeks / $1000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: COMPUTER SCIENCE & PHYSICS	
Project title	**6. Python and Matlab programming for particle accelerators at SLAC**
Keywords	#Physics, #Computer_Science
Company	SLAC National Accelerator Laboratory
Company website	https://www6.slac.stanford.edu/
Mentor/ Supervisor	Nicole Neveu
Mentor Short Bio	I was born and raised in Houston, Texas where I got my undergraduate degree in Electrical Engineering at the local college, University of Houston. Without knowing what I was getting into, I moved north to get my PhD in Physics at Illinois Tech in Chicago. After graduation and too much snow, I moved to SLAC for my 'postdoc'. I've decided to stay for a while, and now I'm an Associate Scientist at SLAC. I love accelerators and I've been having fun working on them! As for other things: I'm addicted to coffee and I have too many succulents/board games/books.

Company description	SLAC is a Department of Energy (DOE) lab with a variety of science and engineering research projects. We are home to one of the largest particle accelerators in the world, and are pushing boundaries in physics, chemistry, biology and engineering.
Company address	2575 Sand Hill Rd, Menlo Park, CA 94025
Project description	Particle accelerators at SLAC are used to make very strong and fast x-ray pulses. Scientists can use these x-rays to study materials on a tiny scale. Improving and studying the accelerator that makes the x-ray pulses is a critical research area at SLAC. In an accelerator control room, software is used every day to control hardware, do physics calculations, and display data from the accelerator. There is always a need for updates, testing, and writing of new or existing code. In this project, you will look at measurements of a laser profile. This laser is used to generate electrons at the very start of the particle accelerator. In Python, you will stack these laser pulse measurements and calculate the width of the data. Knowing the stacked pulse width will help us make better predictions in simulation and during experiments.
Required skills	Python or Matlab experience would help, but is not required (can learn on the job). A course or two in physics would also help, but again is not required.
# of interns	1
Modality	Flexible (Can be full in-person OR Hybrid OR Fully remote depending on needs/preference of student)
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Foothill SLI team will match student with mentor

DISCIPLINE: COMPUTER SCIENCE	
Project title	**7. Software Engineering Intern with Avenda Health**
Keywords	#Computer_Science, #Biotech
Company	Avenda Health
Company website	https://www.avendahealth.com/
Company description	Avenda Health is developing novel prostate cancer treatments that preserve patient quality of life using artificial intelligence and best-in-class technologies.
Company address	4130 Overland Ave, Culver City CA, 90230
Mentor/ Supervisor	Josh Shubert
Project description	Work on small feature + bug requests in a professional software development environment. Develop visualization tools that assist doctors in providing excellent care to patients. Additional projects may be available based on candidate skillset.
Required skills	Experience with a programming language such as Javascript, Python, C++ etc through coursework or personal projects. At least 1 quarter of computer-science or equivalent required.
# of interns	1 - 2

Modality	Fully remote/online. However, is some students want to work hybrid or in-person the opportunity is available.
Schedule/ stipend	**REGULAR:** 20 hours per week for 10 weeks / $3400
Selection process	Supervisor will review a small (3 - 5) set of student applications and also interview finalists before making a final offer.

DISCIPLINE: COMPUTER SCIENCE	
Project title	**8. RISC-V Microprocessor Validation with Aril Computer Corp**
Keywords	#Computer_Science
Company	Aril Computer Corp
Company website	www.arilinc.com
Company description	Aril Inc. is a developer of an embedded processor computing technology designed to optimize systems microarchitecture. The company develops RISC-V technology for embedded computing SOCs and domain-specific services, enabling industrial clients with specific alternatives requiring performance, security, safety and efficiency. (For more information visit: www.arilinc.com and https://riscv.org/)
Company address	100 Los Gatos Saratoga Rd Los Gatos 95032
Mentor/ Supervisor	To Be Determined
Project description	Learn to write programs in RISC-V assembly language and then write programs that target specific portions of the processor to improve validation of correctness.
Required skills	At least 1 quarter of computer programming or equivalent required (CS 1A, 2A or 3A). Familiarity with C programming language is helpful. CS10 is ideal but not a requirement.
# of interns	1-2 interns
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview finalists before making a final offer.

DISCIPLINE: COMPUTER SCIENCE & ENGINEERING	
Project title	**9. Research Associate with iSono Health**
Keywords	#Computer_Science, #Engineering, #Machine_Learning
Company	iSono Health
Company website	www.isonohealth.com
Company description	iSono Health is a medical device startup developing a platform for accessible and personalized breast imaging with automated 3D ultrasound and AI.
Company address	395 Oyster Point Blvd, Suite 501, South San Francisco, CA 94080

Mentor/ Supervisor	to be determined
Project description	The intern will help with data collection, curation and annotation for different machine learning projects.
Required skills	Interest in engineering and/or computer-science is preferable. Some basic coding experience is helpful, but not required as it can be taught during the internship.
# of interns	1
Modality	Flexible (Fully in-person, Hybrid or Fully Remote depending on needs of intern)
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview finalists before making a final offer.

DISCIPLINE: COMPUTER SCIENCE	
Project title	**10. Social media web scraping and data cleaning with DARC at Stanford**
Keywords	#Data_Science #Computer_Science
Institution/ department	Data, Analytics, and Research Computing (Research Hub, Stanford GSB) at Stanford University
Department website	https://www.gsb.stanford.edu/faculty-research/darc (https://rcpedia.stanford.edu/)
Department description	The mission of DARC (Data, Analytics, and Research Computing) is solving challenging technical questions to facilitate faculty research at the Stanford Graduate School of Business (GSB) and contributing to knowledge. The DARC team engages directly with faculty members, preparing large-scale datasets, assisting with data analysis, and consulting on research design. The staff provides expertise on machine learning, text processing, and cloud services, drawing from a rich technical background to support Stanford GSB's research agenda. As part of the research process, the DARC team supports transfer, transformation, and query of terabyte-scale datasets using a mix of on-premise and cloud technologies and manages the on-premise Stanford GSB research servers, providing the storage, memory, and processing necessary for computationally intensive research.
Institution address	655 Knight Way, MBA Class of 1968 Building, Stanford, CA 94305
Mentor/ Supervisor	Wonhee Lee
Project description	This project is designed to introduce our summer intern to common, yet very important, tasks in social science research — data collection and cleaning. The intern will learn how to collect data from the web and clean messy data for analysis. Since we live in the era of social media, in which a massive number of opinions and facts are shared, we will choose social media sites such as Twitter and Reddit to extract data for interesting topics (i.e., what makes people smile, attitudes towards COVID vaccines etc.). Specific tasks the intern will engage in include the following: • Learn how social science research is conducted

	• Learn how to use the APIs of social media sites to gain access to and pull their data • Learn how web data is displayed in HTML and how to parse it • Extract data programmatically using APIs and Python • Examine the pulled data and identify issues • Develop data cleaning strategies and clean the data programmatically • Document the data collection and cleaning process The responsibilities of and expectations for the intern are as follows: • Participate in the initial onboarding meeting prior to the internship to discuss the content and schedule of the internship • Provide input with regard to the topics of research interest and what he or she wants to gain from this internship • Make efforts to complete weekly assignments in time • Maintain good communication with and contact the supervisor when problems arise • Be open to constructive feedback and incorporate it into his or her work We are hoping to work with someone who is passionate about data analytics in social science research and wants to learn not just specific data skills but the overall research process. Please apply if you are interested in our project!
Required skills	Preferences will be given to applicants who meet the following criteria: • Cumulative GPA of 2.5 or above • No prior internship experience • Financial Aid needs • Computer Science major or basic python programming skills (e.g., completion of at least 2 quarters of programming courses in python or equivalent) • Enrollment in the Data Analytics Certificate program is helpful
# of interns	1
Modality	Hybrid - some in-person hours and some remote hours (if possible pending COVID restrictions, the ability to go 100% remote is possible if needed)
Schedule/ stipend	**REGULAR**: 20 hours per week for 6 weeks / $2000
Selection process	Mentor will review a small (3 - 5) set of student applications and also interview finalists before making an offer.

DISCIPLINE: COMPUTER SCIENCE & PHYSICS	
Project title	**11. Identifying critical features of mini-earthquakes at Stanford**
Keywords	#Computer_Science, #Machine_Learning, #Physics
Institution	Stanford University
Institution website	www.stanford.edu
Institution description	Undergraduate, graduate, and lifelong learning through teaching and research.

Institution address	397 Panama Mall, Room 324
Mentor/ Supervisor	Anthony Clark
Project description	Would you like to teach a computer to do something? What if that "something" needed to be done thousands or millions of times? We need "someone" to identify when mini-earthquakes (that we generate in the lab) reach the surface of our little rock samples. These arrival times help us locate where the quake originated within the sample. You will pick some of these arrival times by hand, and help us teach a computer to pick the rest. Specifically, we are building an artificial neural network ("fake brain") that will learn how to accurately do this time-consuming (for humans) task very rapidly. We want someone with some python programming experience to help optimize our code for future users.
Required skills	Student should have an interest in learning machine learning methods! Some knowledge of waves (e.g. 1 quarter of Physics required, 2A or 4A), Basic python programming (e.g. 1 quarter of programming in Python or equivalent is required), Exposure to machine learning methods is helpful.
# of interns	1
Modality	Hybrid
Schedule/ stipend	**REGULAR**: 15 hours per week for 9 weeks / $2200
Selection process	Mentor will review a small (3 - 5) set of student applications and also interview before making a final offer.

DISCIPLINE: ENGINEERING & COMPUTER SCIENCE & PHYSICS	
Project title	**15. Exploring radar for two-car target tracking at Stanford**
Keywords	#Engineering, #Computer_Science
Mentor/ Supervisor	Adyasha Mohanty
Institution and Affiliation	AeroAstro at Stanford University
Project Description	The project shall involve designing algorithms for target tracking using a RADAR sensor for a two-car setup within a filtering framework. The first few weeks will involve replicating existing filtering algorithms that use RADAR for collision avoidance or target tracking. In the second half of the project, the student will conceptualize and code a new algorithm. This algorithm will be used by the follower car to track the leader car and always maintain a safe distance from it, without risking collision at any timestep.
Institution Address	496 Lomita Mall, Stanford, CA
Short Bio	I am a third-year PhD student in AeroAstro at Stanford. My research revolves around designing algorithms for safe perception of autonomous cars. I also get excited by opportunities to mentor students, DEI initiatives and startups that are working on cutting-edge autonomy. I am involved in multiple leadership positions on campus and I love having an impact in anyway possible. My hobbies include

	dancing/zumba, traveling around the world and just meeting different people and having engaging conversations!
Required Skills	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs and radars is preferred. Exposure to linear algebra and differential equations is helpful.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
Selection Process	Research mentor will review 3 - 5 applications and select 1 or 2 to make offers to

DISCIPLINE: MEDICINE/ BIOTECH & BIOLOGY/ CHEM & COMPUTER SCIENCE	
Project title	**16. Biomedical data fusion with machine learning at Stanford**
Keywords	#Medicine, #Computer_Science, #Machine_Learning, #Molecular_Biology
Institution	Stanford University
Lab website	http://gevaertlab.stanford.edu/
Lab description	The Gevaert lab focuses on biomedical data fusion of complex diseases with a particular focus on oncology and cardiovascular diseases. We develop novel machine learning approaches that digest multi-omics, multi-modal or multi-scale data. Previously we pioneered data fusion work using Bayesian and kernel methods studying breast and ovarian cancer. Subsequent work concerned the development of methods for multi-omics data fusion. This resulted in the development of MethylMix, to identify differentially methylated genes, and AMARETTO, a computational method to integrate DNA methylation, copy number and gene expression data to identify cancer modules. Additionally, my lab focuses on linking molecular data with cellular and tissue-level phenotypes. This led to key contributions in the field of imaging genomics/radiogenomics involving work in lung cancer and brain tumors. Our work in imaging genomics is focused on developing a framework for non-invasive personalized medicine. In summary, my lab has an interdisciplinary focus on developing novel algorithms for multi-scale biomedical data fusion.
Company address	1265 Welch Road, Stanford, CA
Mentor/ Supervisor	to be determined
Project description	My lab focuses on biomedical data fusion: the development of machine learning methods for biomedical decision support using multi-scale biomedical data. Previously we pioneered data fusion work using Bayesian and kernel methods studying breast and ovarian cancer. Additionally, we developed computational algorithms for the identification of driver genes using multi-omics data. Furthermore, we are working on multi-scale biomedical data fusion methods, bridging the molecular using omics data, cellular using pathology data and tissue using medical imaging data.

	Students could work on any number of projects that match their particular interest(s). Projects range from analyzing data to developing machine learning methods for processing imaging data, omics data and/or clinical data.
Required skills	Coding: students should be comfortable coding in python, R or equivalent programming language (At least 1 quarter of computer-programming or equivalent is highly recommended). First basics of mathematics (for example, at least 1 quarter of calculus or Statistics is highly recommended). Some knowledge of molecular biology & medicine is a plus.
# of interns	2
Modality	Flexible (Fully in-person, Hybrid or Fully remote depending on needs of intern)
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Foothill SLI team will match student with company

DISCIPLINE: COMPUTER SCIENCE	
Project title	**26. AI Use Cases and ML Models Evaluation Project Intern @ *Esperanto Technologies***
Keywords	#Computer_Science, #AI
Institution	Esperanto Technologies
Lab website	https://www.esperanto.ai/
Lab description	Esperanto develops and markets RISC-V based hardware and associated software to enable efficient deployment of AI or HPC workloads in datacenters and near-edge environments. The company's proprietary technology enables highly compute-energy efficient computing systems at production scale.
Company address	800 W El Camino Real UNIT 410, Mountain View, CA 94040
Mentor/ Supervisor	Jin Kim
Project description	The real-world consists of many diverse use cases spread across multiple industry verticals; these vary from news feed recommendation to customers and customer perception about retail products to vision based autonomous driving and financial fraud detection. It is very difficult for a single product to be "best for everything" and as a result, it is important to understand the characteristics of different use cases to effectively target Esperanto's products and associated strategies. This project will involve analyzing disparate use cases across different industry verticals with Esperanto's data science and marketing professionals to create characterization of use cases where our products will provide superior values to our customers. The project will teach interns how companies analyze and target real-world market segments to develop applications and future technology and product roadmaps.
Required skills	The projects in this area will require interns with some programming background (Python and C++), understanding of AI (deep learning) capabilities, and strong interest in use cases and marketing value propositions.
# of interns	1 - 2
Modality	Flexible (Fully in-person, Hybrid or Fully remote depending on needs of intern) withweekly in-person meeting encouraged

Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400 (along with additional company pay to match their internship rate)
Selection process	Company will review 3 - 5 applications, possibly interview candidates, and select 1 or 2 to make offers to

DISCIPLINE: COMPUTER SCIENCE	
Project title	**27. AI Demo Project Intern @ *Esperanto Technologies***
Keywords	#Computer_Science, #AI
Institution	Esperanto Technologies
Lab website	https://www.esperanto.ai/
Lab description	Esperanto develops and markets RISC-V based hardware and associated software to enable efficient deployment of AI or HPC workloads in datacenters and near-edge environments. The company's proprietary technology enables highly compute-energy efficient computing systems at production scale.
Company address	800 W El Camino Real UNIT 410, Mountain View, CA 94040
Mentor/ Supervisor	Jin Kim
Project description	One of the challenges of marketing innovative AI systems to the market is to provide compelling demo applications that effectively communicate our key value propositions. This project will focus on building demo applications around real-world use cases with Esperanto's data scientists that demonstrate key attributes of our systems that provide insight into the advantages of Esperanto's products. These projects will expose interns to real world use cases, use of AI (deep learning) applications, and best practices on how to communicate value propositions to target audiences.
Required skills	The projects in this area will require interns to use their backgrounds in computer programming (Python and/or C++) along with understanding of Esperanto's products to support our marketing efforts. Background in AI is useful but not necessary.
# of interns	1 - 2
Modality	Flexible (Fully in-person, Hybrid or Fully remote depending on needs of intern) withweekly in-person meeting encouraged
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400 (along with additional company pay to match their internship rate)
Selection process	Company will review 3 - 5 applications, possibly interview candidates, and select 1 or 2 to make offers to

DISCIPLINE: COMPUTER SCIENCE	
Project title	**28. AI Visualization Project Intern @ *Esperanto Technologies***
Keywords	#Computer_Science, #AI, #Data_Visualization
Institution	Esperanto Technologies
Lab website	https://www.esperanto.ai/
Lab description	Esperanto develops and markets RISC-V based hardware and associated software to enable efficient deployment of AI or HPC workloads in datacenters and near-edge

	environments. The company's proprietary technology enables highly compute-energy efficient computing systems at production scale.
Company address	800 W El Camino Real UNIT 410, Mountain View, CA 94040
Mentor/ Supervisor	Jin Kim
Project description	Part of developing complex, modern AI systems (hardware and software) involves continuous and incremental analysis of system performance around different workloads for future improvements. One of the best ways to understand performance of AI systems is to analyze both the data consumed by the AI systems as well as evaluating the data created by these systems. Data visualization is an effective way to understand complex system behavior. This project will involve building a series of data visualization tools to facilitate understanding of data manifolds, computational characteristics of specific layers of deep learning models running on Esperanto systems, as well as more creative means of understanding outputs of AI systems built with Esperanto's hardware and software. The project will expose interns to various data visualization methods used in understanding AI systems.
Required skills	The project in this area will require interns with strong computer programming backgrounds (Python and C++) as well as interest and understanding in statistics and basics of visualization best practices. Familiarity with AI concepts are useful but not necessary.
# of interns	1 - 2
Modality	Flexible (Fully in-person, Hybrid or Fully remote depending on needs of intern) withweekly in-person meeting encouraged
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400 (along with additional company pay to match their internship rate)
Selection process	Company will review 3 - 5 applications, possibly interview candidates, and select 1 or 2 to make offers to

EMPOWERMENT

DISCIPLINE: EMPOWERMENT	
Project title	SLI Summer Leadership Fellow @ Foothill College SLI
Keywords	#Leadership, #STEM_education, #STEMimpact
Institution Address	Foothill College - 12345 El Monte Road, Los Altos Hills
Internship Mentor	Sophia Kim
Institution and affiliation	Foothill College, Science Learning Institute
Project description	The SLI Summer Leadership Fellow will support the PRE-STEM Summer Institute (7/18 - 8/5) which is a pre-college program for incoming STEM Foothill students which will be in-person at Foothill this summer. The role will involve organizing college readiness workshops, serving as a peer mentor for students working on data science social impact projects, and working with the whole institute team to build a supportive community for the participants. It's a great opportunity to build your

	leadership skills, use your knowledge of being a student at Foothill, and make a difference in the lives of students coming to Foothill who want to major in a STEM discipline. You will receive training before the program starts as well have planning time to get ready for the summer institute.
Supervisor short bio	Sophia Kim is the director of the Science Learning Institute (SLI) where she has served for two years, creating and running programs to advance equity in STEM. She has extensive experience mentoring and advising students and is excited for the opportunity to support YOU in your professional development and growth.
Required skills	interest in mentoring new students, experience with facilitating workshops (or interest in learning!), understanding of the various resources at Foothill to share with new students, STEM major preferable
Modality	In- person
Schedule/ stipend	**REGULAR**: total 240 hours over 8 weeks (schedule will vary from week to week) / $4000
Selection process	Foothill SLI team will select 4 -5 interns

ENGINEERING

DISCIPLINE: COMPUTER SCIENCE & ENGINEERING	
Project title	**9. Research Associate with iSono Health**
Keywords	#Computer_Science, #Engineering, #Machine_Learning
Company	iSono Health
Company website	www.isonohealth.com
Company description	iSono Health is a medical device startup developing a platform for accessible and personalized breast imaging with automated 3D ultrasound and AI.
Company address	395 Oyster Point Blvd, Suite 501, South San Francisco, CA 94080
Mentor/ Supervisor	to be determined
Project description	The intern will help with data collection, curation and annotation for different machine learning projects.
Required skills	Interest in engineering and/or computer-science is preferable. Some basic coding experience is helpful, but not required as it can be taught during the internship.
# of interns	1
Modality	Flexible
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview before making a final offer.

DISCIPLINE: ENGINEERING	
Project title	**12. Mechanical behavior of additive manufactured polymers and composites at SJSU**

Keywords	#CAD, #Engineering
Institution	San Jose State University/ Department of Chemical and Materials Engineering
Lab website	www.ozgurkeles.com
Project description	Students will create CAD files of basic test samples, will perform additive manufacturing of polymers/composites, perform tensile, bending, toughness tests on these samples, and present results.
Mentor/ Supervisor	Ozgur Keles
Mentor short bio	Dr. Keles is an Assistant Professor of Chemical and Materials Engineering at San Jose State University. He received his B.S. and M.S. degrees from the Department of Metallurgical and Materials Engineering at Middle East Technical University, and his Ph.D. in Materials Engineering from Purdue University. His current research interests are multi-scale material structure control using 3D printing, sustainability, materials informatics, and virtual reality in engineering education. Keles uses numerical and experimental approaches to improve strength and toughness of material systems, while making them lighter. Moreover, he investigates the effects of recycling on the mechanics of polymers. Keles is also a photographer and digital artist who uses aesthetically appealing images and computer visualizations to improve student engagement, aid student learning, and foster creativity in engineering students. His recent work uses virtual reality to facilitate learning of engineering concepts in pedagogically-designed environments.
Required skills	At least 1 quarter of calculus based physics (Physics 4A) is required. Engineering 35 (Statics) is helpful. Basic knowledge of statistics is helpful. Materials and mechanics background would be good. Hands on lab skills will be needed.
Modality	Fully in-person at San Jose State University
Schedule/ stipend	**REGULAR**: 15 hours per week for 9 weeks / $2200
Selection process	Foothill SLI team will match student with mentor

DISCIPLINE: ENGINEERING & MEDICINE	
Project title	**13. New materials as inks for 3D bio-printing at Stanford**
Keywords	#3D_Printing, #CAD, #Engineering, #Medicine
Company	Heilshorn Biomaterials Research Laboratory at Stanford University
Company website	https://web.stanford.edu/group/heilshorn/index.html
Company description	The Heilshorn group designs materials that mimic the nano- and micro-scale order found in nature for applications in regenerative medicine, tissue engineering, and biology. We are a collaborative team of research scientists and trainees spanning several disciplines and a range of educational experiences. We believe diversity in thought is at the core of successful interdisciplinary research and scientific advancement. To this end, we welcome contributions from all individuals, drawing on their own unique scientific and personal backgrounds. We actively foster a supportive and equitable learning environment through mutual respect, social connection, and mentorship.

Company address	Geballe Laboratory for Advanced Materials (GLAM) McCullough Building 476 Lomita Mall Stanford, CA 94305-4008
Mentor/ Supervisor	Lucia Brunel
Project description	The field of 3D bio-printing emerged from the application of engineering principles to address biological questions and challenges. 3D bio-printing is similar to traditional 3D printing, but the inks include embedded cells. This promising technology can be used to fabricate living devices for regenerative medicine and disease modeling. In this project, we are working to develop and validate new cell-compatible materials that function well as bio-inks. Interns will design physiologically-relevant CAD models, perform chemical synthesis of bio-ink materials, and characterize the mechanical and biochemical properties of the bio-inks to investigate the effect on their printability and suitability for living cells.
Mentor short bio	Lucia is a 3rd year PhD candidate in Chemical Engineering, with a background in polymer science and mammalian cell culture. Her research focuses on the design of hydrogel materials and crosslinking chemistries for 3D bio-printing with encapsulated cells. Currently, she is using 3D bio-printing to create bioengineered corneal substitutes to address the global shortfall of donor corneal tissue available for transplantation. Outside of the lab, she enjoys exploring the beaches, museums, and hikes in the Bay Area.
Required skills	Prior coursework in biology, chemistry, and/or physics is encouraged. Experience with 3D modeling (CAD) and/or 3D printing is also helpful but not required.
# of interns	2
Modality	Fully in-person at the company address location above, Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Company will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: ENGINEERING & MEDICINE	
Project title	**14. R&D and Manufacturing Intern at Potrero Medical**
Keywords	#Health, #Engineering, #CAD, #Medical_Technology
Company	Potrero Medical
Company website	https://potreromed.com/
Company description	We are a Silicon Valley-based predictive health company developing the next generation of medical devices with smart sensors and artificial intelligence. Founded in the historical Potrero Hill neighborhood, we emerged out of Theranova, a medtech incubator focused on tackling the biggest challenges in healthcare. Potrero is a place where the impossible becomes a reality. Our mission is to help clinicians transform patient care by developing a predictive technology platform for early detection of critical illnesses.

Company address	26142 Eden Landing RD
Mentor/ Supervisor	Dillon Arey
Project description	R&D: -Own 1-2 research projects, which may involve any/all of the following: Research, Prototyping, Experiment Design, Testing, Reports -Assist with design validation testing and report writing -Design and assist with engineering-level testing and evaluation -Assist with day-to-day R&D activities when appropriate Manufacturing: -Evaluate manufacturing processes for time and resource efficiency -Propose and implement process improvements, which may involve any/all of: Research, Fixture Building, Experiment Design, Testing, Reports -Assist with day-to-day operations activities when appropriate Interns may be focused primarily in R&D or primarily in Manufacturing, but will likely have the opportunity to cross over to other departments over the course of the internship.
Required skills	-Strong Mathematics and Writing required (At least Math 1A and English 1A required) -Laboratory testing and Lab Report writing experience preferred -3D modeling (CAD) and engineering drawing generation is helpful -Physics coursework is helpful -General machine shop knowledge (hand tools) is helpful
# of interns	3
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: ENGINEERING & COMPUTER SCIENCE & PHYSICS	
Project title	**15. Exploring radar for two-car target tracking at Stanford**
Keywords	#Engineering, #Computer_Science, #Physics
Mentor/ Supervisor	Adyasha Mohanty
Institution and Affiliation	AeroAstro at Stanford University
Project Description	The project shall involve designing algorithms for target tracking using a RADAR sensor for a two-car setup within a filtering framework. The first few weeks will involve replicating existing filtering algorithms that use RADAR for collision avoidance or target tracking. In the second half of the project, the student will conceptualize and code a new algorithm. This algorithm will be used by the follower car to track the leader car and always maintain a safe distance from it, without risking collision at any timestep.

Institution Address	496 Lomita Mall, Stanford, CA
Short Bio	I am a third-year PhD student in AeroAstro at Stanford. My research revolves around designing algorithms for safe perception of autonomous cars. I also get excited by opportunities to mentor students, DEI initiatives and startups that are working on cutting-edge autonomy. I am involved in multiple leadership positions on campus and I love having an impact in anyway possible. My hobbies include dancing/zumba, traveling around the world and just meeting different people and having engaging conversations!
Required Skills	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs and radars is preferred. Exposure to linear algebra and differential equations is helpful.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
Selection Process	Research mentor will review 3 - 5 applications and select 1 or 2 to make offers to

MEDICINE/ BIOTECH

DISCIPLINE: MEDICINE/BIOTECH	
Project title	**2. Product Intern with Digbi Health**
Keywords	#Health, #Medicine, #Nutrition, #Science_Communications
Company	Digbi Health
Company website	https://digbihealth.com/
Company description	Digbi is a leading value-based, Precision Digital Care Platform for inflammatory insulin, musculoskeletal, gut, skin comorbidities associated with gut and obesity. The risk of these illnesses varies significantly across ethnicity and gender because they are rooted in the interactions between a person's gut microbiome, genetics, and lifestyle risk factors. We are the first company that has successfully integrated gut microbiome, genetic, blood, and lifestyle based risk signals, and provides personalized care for a diverse workforce and their families. Our care programs are vetted and paid by large insurance payers and employers. We are actively pursuing human trials with leading medical schools. Our programs demonstrably deliver superior health outcomes and financial savings to payers and employers.
Company address	800 El Camino Real West Suite 180, Mountain View, CA 94040
Mentor/ Supervisor	To Be Determined
Project description	Read and synthesize research to develop care protocols for members Research nutrition pathways for specific weight-related illnesses. Develop food guides, meal plans, recipe book

	Analyze data on patient engagement, performance and feedback. Collaborate with cross-functional teams to iterate and provide feedback on product adoption.
Required skills	A passion and interest in food, nutrition, health. Basic understanding of common types of cuisine Excellent written communication skills. Science research experience is preferable but not required. A strong command of the English language and the ability to write a compelling story is a plus.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview before making a final offer.

DISCIPLINE: ENGINEERING & MEDICINE	
Project title	**13. New materials as inks for 3D bio-printing at Stanford**
Keywords	#3D_Printing, #CAD, #Engineering, #Medicine
Company	Heilshorn Biomaterials Research Laboratory at Stanford University
Company website	https://web.stanford.edu/group/heilshorn/index.html
Company description	The Heilshorn group designs materials that mimic the nano- and micro-scale order found in nature for applications in regenerative medicine, tissue engineering, and biology. We are a collaborative team of research scientists and trainees spanning several disciplines and a range of educational experiences. We believe diversity in thought is at the core of successful interdisciplinary research and scientific advancement. To this end, we welcome contributions from all individuals, drawing on their own unique scientific and personal backgrounds. We actively foster a supportive and equitable learning environment through mutual respect, social connection, and mentorship.
Company address	Geballe Laboratory for Advanced Materials (GLAM) McCullough Building 476 Lomita Mall Stanford, CA 94305-4008
Mentor/ Supervisor	Lucia Brunel
Project description	The field of 3D bio-printing emerged from the application of engineering principles to address biological questions and challenges. 3D bio-printing is similar to traditional 3D printing, but the inks include embedded cells. This promising technology can be used to fabricate living devices for regenerative medicine and disease modeling. In this project, we are working to develop and validate new cell-compatible materials that function well as bio-inks. Interns will design physiologically-relevant CAD models, perform chemical synthesis of bio-ink materials, and characterize the mechanical and biochemical properties of

	the bio-inks to investigate the effect on their printability and suitability for living cells.
Mentor short bio	Lucia is a 3rd year PhD candidate in Chemical Engineering, with a background in polymer science and mammalian cell culture. Her research focuses on the design of hydrogel materials and crosslinking chemistries for 3D bio-printing with encapsulated cells. Currently, she is using 3D bio-printing to create bioengineered corneal substitutes to address the global shortfall of donor corneal tissue available for transplantation. Outside of the lab, she enjoys exploring the beaches, museums, and hikes in the Bay Area.
Required skills	Prior coursework in biology, chemistry, and/or physics is encouraged. Experience with 3D modeling (CAD) and/or 3D printing is also helpful but not required.
# of interns	2
Modality	Fully in-person at the company address location above, Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Company will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: ENGINEERING & MEDICINE	
Project title	**14. R&D and Manufacturing Intern at Potrero Medical**
Keywords	#Health, #Engineering, #CAD, #Medical_Technology
Company	Potrero Medical
Company website	https://potreromed.com/
Company description	We are a Silicon Valley-based predictive health company developing the next generation of medical devices with smart sensors and artificial intelligence. Founded in the historical Potrero Hill neighborhood, we emerged out of Theranova, a medtech incubator focused on tackling the biggest challenges in healthcare. Potrero is a place where the impossible becomes a reality. Our mission is to help clinicians transform patient care by developing a predictive technology platform for early detection of critical illnesses.
Company address	26142 Eden Landing RD
Mentor/ Supervisor	Dillon Arey
Project description	R&D: -Own 1-2 research projects, which may involve any/all of the following: Research, Prototyping, Experiment Design, Testing, Reports -Assist with design validation testing and report writing -Design and assist with engineering-level testing and evaluation -Assist with day-to-day R&D activities when appropriate Manufacturing: -Evaluate manufacturing processes for time and resource efficiency -Propose and implement process improvements, which may involve any/all of: Research, Fixture Building, Experiment Design, Testing, Reports

	-Assist with day-to-day operations activities when appropriate Interns may be focused primarily in R&D or primarily in Manufacturing, but will likely have the opportunity to cross over to other departments over the course of the internship.
Required skills	-Strong Mathematics and Writing required (At least Math 1A and English 1A required) -Laboratory testing and Lab Report writing experience preferred -3D modeling (CAD) and engineering drawing generation is helpful -Physics coursework is helpful -General machine shop knowledge (hand tools) is helpful
# of interns	3
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: MEDICINE/ BIOTECH & BIOLOGY/ CHEM & COMPUTER SCIENCE	
Project title	**16. Biomedical data fusion with machine learning at Stanford**
Keywords	#Medicine, #Computer_Science, #Machine_Learning, #Molecular_Biology
Institution	Stanford University
Lab website	http://gevaertlab.stanford.edu/
Lab description	The Gevaert lab focuses on biomedical data fusion of complex diseases with a particular focus on oncology and cardiovascular diseases. We develop novel machine learning approaches that digest multi-omics, multi-modal or multi-scale data. Previously we pioneered data fusion work using Bayesian and kernel methods studying breast and ovarian cancer. Subsequent work concerned the development of methods for multi-omics data fusion. This resulted in the development of MethylMix, to identify differentially methylated genes, and AMARETTO, a computational method to integrate DNA methylation, copy number and gene expression data to identify cancer modules. Additionally, my lab focuses on linking molecular data with cellular and tissue-level phenotypes. This led to key contributions in the field of imaging genomics/radiogenomics involving work in lung cancer and brain tumors. Our work in imaging genomics is focused on developing a framework for non-invasive personalized medicine. In summary, my lab has an interdisciplinary focus on developing novel algorithms for multi-scale biomedical data fusion.
Company address	1265 Welch Road, Stanford, CA
Mentor/ Supervisor	to be determined
Project description	My lab focuses on biomedical data fusion: the development of machine learning methods for biomedical decision support using multi-scale biomedical data. Previously we pioneered data fusion work using Bayesian and kernel methods studying breast and ovarian cancer. Additionally, we developed computational algorithms for the identification of driver genes using multi-omics data. Furthermore, we are working on multi-scale biomedical data fusion methods, bridging the

	molecular using omics data, cellular using pathology data and tissue using medical imaging data. Students could work on any number of projects that match their particular interest(s). Projects range from analyzing data to developing machine learning methods for processing imaging data, omics data and/or clinical data.
Required skills	Coding: students should be comfortable coding in python, R or equivalent programming language (At least 1 quarter of computer-programming or equivalent is highly recommended). First basics of mathematics (for example, at least 1 quarter of calculus or Statistics is highly recommended). Some knowledge of molecular biology & medicine is a plus.
# of interns	2
Modality	Flexible (Fully in-person, Hybrid or Fully remote depending on needs of intern)
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Foothill SLI team will match student with company

DISCIPLINE: MEDICINE/ BIOTECH	
Project title	**17. Research and Development Intern at Digbi Health**
Keywords	#Biotech #Health #Nutrition #Science_Communication,
Company	Digbi Health
Company website	https://digbihealth.com/
Company description	Digbi Health is a leading value-based, Precision Digital Care Platform for inflammatory insulin, musculoskeletal, gut, skin comorbidities associated with gut and obesity. The risk of these illnesses varies significantly across ethnicity and gender because they are rooted in the interactions between a person's gut microbiome, genetics, and lifestyle risk factors. We are the first company that has successfully integrated gut microbiome, genetic, blood, and lifestyle based risk signals, and provides personalized care for a diverse workforce and their families. Our care programs are vetted and paid by large insurance payers and employers. We are actively pursuing human trials with leading medical schools. Our programs demonstrably deliver superior health outcomes and financial savings to payers and employers.
Company address	800 El Camino Real West Suite 180, City of Mountain View, CA 94040
Mentor/ Supervisor	To Be Determined
Project description	The Research and Development Intern will work to collaboratively select and define an area for in-depth investigation within a broad project brief. They will: • Identify existing knowledge and skills, and evaluate additional resources/skills required to effectively address identified issues. • Generate and present proposals that utilize peer, expert and stakeholder views and articulate a clear understanding of the project requirement.

	• Evaluate the effectiveness of the project process through reflective reporting and peer review. • Develop and present a resolved project outcome that demonstrates an understanding of, and engagement with, the major issues, challenges, and opportunities presented. • Assist with resources and paper writing
Required skills	• Excellent written communication skills. • A strong command of the English language and the ability to write a compelling story is a must. • Ability to read complex research material. • Ability to work in dynamic, fast-paced working conditions.
# of interns	2
Modality	Fully remote/ online
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview finalists before making an offer.

DISCIPLINE: MEDICINE/ BIOTECH & BIO/ CHEMISTRY	
Project title	**18. Injectable Hydrogels for the Delivery of Gene-Based Myocardial Infarction Therapy at Stanford**
Keywords	#Biotech, #Chemistry, #Lab, #Medicine
Company	Stanford University
Company website	https://web.stanford.edu/group/heilshorn/
Company description	The Heilshorn group designs materials that mimic the nano- and micro-scale order found in nature for applications in regenerative medicine, tissue engineering, and biology.
Company address	466 Lomita Mall, Stanford, CA 94305
Mentor/ Supervisor	Renato Navarro
Mentor short bio	I am a first-generation, non-traditional postdoctoral fellow in the Material Science and Engineering Department at Stanford University. As a child, my family and I illegally immigrated to the U.S., where my parents worked as migrant workers. My parents, unfortunately, received no formal education, leaving me with minimal guidance and mentorship in the pursuit of a college degree. Not understanding the importance of higher education, I did not attend college immediately after high school but instead pursued a military career. Through my military career, I had the opportunity to interact with officers who mentored me on the importance of higher education, which led me to attend college after my military service. Now I use my non-traditional background as a motivation to pursue an academic career where I can apply my knowledge of biomaterials and regenerative medicine to develop therapies for wounded warriors. Additionally, I try to leverage my unique background to mentor underrepresented

	minorities, first-generation students, and non-traditional students who initially did not see college as an option to achieve their higher education goals.
Project description	Delivery of therapeutics to mechanically active tissues, like the heart, have been notoriously difficult due to low retention and viability of the therapy. Our project will test the suitability of a gel made from recombinant hyaluronic acid (HA) and elastin-like protein (ELP) as a vehicle for a gene-based therapy for myocardial infarction. As part of the project, the student will learn recombinant protein expression and dynamic covalent chemistry strategies for gel fabrication, perform fluorometric assays to ensure therapy linkage with the hydrogel, and test the in-vitro performance of the gel for delivery of the gene-based therapy in rat cardiomyocytes.
Required skills	Interest in science and a passion to develop tools for the betterment of society.
# of interns	1
Modality	Hybrid, not fully remote
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick my 1 or 2 top choices to make offers to.

DISCIPLINE: MEDICINE/ BIOTECH	
Project title	**19. Quality Associate at iSono Health**
Keywords	#Lab, #Biotech, #Medical_Technology
Company	iSono Health
Company website	www.isonohealth.com
Company description	iSono Health is a medical device startup developing a platform for accessible and personalized breast imaging with automated 3D ultrasound and AI.
Company address	395 Oyster Point Blvd, Suite 501, South San Francisco, CA 94080
Mentor/ Supervisor	to be determined
Project description	The intern will help the company with testing and quality assurance activities for the software and/or hardware by performing test protocol and recording the results.
Required skills	A student with laboratory experience is preferred (ideally at least 1 quarter of a STEM class that includes a lab)
# of interns	1
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also interview before making a final offer.

DISCIPLINE: BIOLOGY/ CHEMISTRY & MEDICINE/BIOTECH

Project title	21. Investigation for Protein Stabilizing Compounds in Liquid and Hydrogel Solutions at Intact Therapeutics
Keywords	#Biology #Biotech #Chemistry #Lab #Medicine
Company	Intact Therapeutics
Company website	https://intacttherapeutics.com/
Company description	Intact Therapeutics is a clinical stage, biopharmaceutical company focused on developing targeted therapies for the gastrointestinal tract based on technology developed at Stanford University. Intact's technology is designed to increase local exposure of therapy to diseases affecting the mucosal lining, thereby improving efficacy and increasing patient acceptance.
Company address	2627 Hanover St. Palo Alto, CA 94304
Mentor/ Supervisor	Chris Zhan
Mentor short bio	I am a first-generation immigrant who grew up in the east bay. I attended the Peralta Community Colleges before transferring to UC Berkeley, where I received a B.S. in Chemical Engineering and Material Science. I have 7 years of manufacturing and quality experiences in medical devices where I worked with formulations and drug delivery technologies. I am now a formulation scientist at Intact Therapeutics working on the development of a drug delivery platform using thermosensitive hydrogels.
Project description	Research, plan, and conduct investigational experiments. Prepare buffers, formulations, and other solutions. Assist in formulation characterization works such as protein activity, rheology, pH, and stability. Additional exposures to UV-Vis Spectroscopy, HPLC, electrophoresis, and other investigational techniques as needed.
Required skills	At least one quarter of Biology and/or Chemistry with Lab Required. Student should have a basic understanding of lab safety and how to document experiments. Basic data analysis/visualization using spreadsheets is helpful as well.
# of interns	1
Modality	Hybrid - some in-person hours and some remote hours
Schedule/ stipend	**REGULAR**: 20 hours per week for 10 weeks / $3400
Selection process	Company will review a small (3 - 5) set of student applications and also MAY interview finalists before making a final offer.

PHYSICS

DISCIPLINE: COMPUTER SCIENCE & PHYSICS	
Project title	**6. Python and Matlab programming for particle accelerators at SLAC**
Keywords	#Physics, #Computer_Science
Company	SLAC National Accelerator Laboratory
Company website	https://www6.slac.stanford.edu/

Mentor/ Supervisor	Nicole Neveu
Mentor Short Bio	I was born and raised in Houston, Texas where I got my undergraduate degree in Electrical Engineering at the local college, University of Houston. Without knowing what I was getting into, I moved north to get my PhD in Physics at Illinois Tech in Chicago. After graduation and too much snow, I moved to SLAC for my 'postdoc'. I've decided to stay for a while, and now I'm an Associate Scientist at SLAC. I love accelerators and I've been having fun working on them! As for other things: I'm addicted to coffee and I have too many succulents/board games/books.
Company description	SLAC is a Department of Energy (DOE) lab with a variety of science and engineering research projects. We are home to one of the largest particle accelerators in the world, and are pushing boundaries in physics, chemistry, biology and engineering.
Company address	2575 Sand Hill Rd, Menlo Park, CA 94025
Project description	Particle accelerators at SLAC are used to make very strong and fast x-ray pulses. Scientists can use these x-rays to study materials on a tiny scale. Improving and studying the accelerator that makes the x-ray pulses is a critical research area at SLAC. In an accelerator control room, software is used every day to control hardware, do physics calculations, and display data from the accelerator. There is always a need for updates, testing, and writing of new or existing code. In this project, you will look at measurements of a laser profile. This laser is used to generate electrons at the very start of the particle accelerator. In Python, you will stack these laser pulse measurements and calculate the width of the data. Knowing the stacked pulse width will help us make better predictions in simulation and during experiments.
Required skills	Python or Matlab experience would help, but is not required (can learn on the job). A course or two in physics would also help, but again is not required.
# of interns	1
Modality	Flexible (Can be full in-person OR Hybrid OR Fully remote depending on needs/preference of student)
Schedule/ stipend	**REGULAR**: 20 hours per week for 9 weeks / $3000
Selection process	Foothill SLI team will match student with mentor

DISCIPLINE: COMPUTER SCIENCE & PHYSICS	
Project title	**11. Identifying critical features of mini-earthquakes at Stanford**
Keywords	#Computer_Science, #Machine_Learning, #Physics
Institution	Stanford University
Institution website	www.stanford.edu
Institution description	Undergraduate, graduate, and lifelong learning through teaching and research.
Institution address	397 Panama Mall, Room 324

Mentor/ Supervisor	Anthony Clark
Project description	Would you like to teach a computer to do something? What if that "something" needed to be done thousands or millions of times? We need "someone" to identify when mini-earthquakes (that we generate in the lab) reach the surface of our little rock samples. These arrival times help us locate where the quake originated within the sample. You will pick some of these arrival times by hand, and help us teach a computer to pick the rest. Specifically, we are building an artificial neural network ("fake brain") that will learn how to accurately do this time-consuming (for humans) task very rapidly. We want someone with some python programming experience to help optimize our code for future users.
Required skills	Student should have an interest in learning machine learning methods! Some knowledge of waves (e.g. 1 quarter of Physics required, 2A or 4A), Basic python programming (e.g. 1 quarter of programming in Python or equivalent is required), Exposure to machine learning methods is helpful.
# of interns	1
Modality	Hybrid
Schedule/ stipend	**REGULAR**: 15 hours per week for 9 weeks / $2200
Selection process	Mentor will review a small (3 - 5) set of student applications and also interview before making a final offer.

DISCIPLINE: ENGINEERING & COMPUTER SCIENCE & PHYSICS	
Project title	**15. Exploring radar for two-car target tracking at Stanford**
Keywords	#Engineering, #Computer_Science, #Physics
Mentor/ Supervisor	Adyasha Mohanty
Institution and Affiliation	AeroAstro at Stanford University
Project Description	The project shall involve designing algorithms for target tracking using a RADAR sensor for a two-car setup within a filtering framework. The first few weeks will involve replicating existing filtering algorithms that use RADAR for collision avoidance or target tracking. In the second half of the project, the student will conceptualize and code a new algorithm. This algorithm will be used by the follower car to track the leader car and always maintain a safe distance from it, without risking collision at any timestep.
Institution Address	496 Lomita Mall, Stanford, CA
Short Bio	I am a third-year PhD student in AeroAstro at Stanford. My research revolves around designing algorithms for safe perception of autonomous cars. I also get excited by opportunities to mentor students, DEI initiatives and startups that are working on cutting-edge autonomy. I am involved in multiple leadership positions on campus and I love having an impact in anyway possible. My hobbies include dancing/zumba, traveling around the world and just meeting different people and having engaging conversations!

Required Skills	Github, Programming, either in Python or in Matlab, Some exposure to multi-variable calculus required; familiarity and/or significant interest in sensors such as cameras, LiDARs and radars is preferred. Exposure to linear algebra and differential equations is helpful.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
Selection Process	Research mentor will review 3 - 5 applications and select 1 or 2 to make offers to

PSYCHOLOGY

DISCIPLINE: BIOLOGY/ CHEMISTRY & COMPUTER SCIENCE & PSYCHOLOGY	
Project title	**4. Redefining poverty: Examining how financial scarcity affects brain development and learning in children and adolescents at Stanford**
Keywords	#Neuroscience, #Data_Science, #Computer_Science, #Psychology
Mentor/ Supervisor	Gabriel Reyes
Institution and affiliation	Stanford University/ Graduate School of Education
Institution address	485 Lasuen Mall, Stanford, CA
Project description	A growing number of cognitive neuroscientists are researching how poverty affects brain development and behavior, but a significant problem in the field is that many conceptualize poverty differently. Various measures currently exist to capture poverty — income, socioeconomic status (SES), income-to-needs ratio, questionnaires on material deprivation — but identifying which measure precisely and accurately captures the lived experiences of those from low-income backgrounds is not quite clear. To better understand how poverty impacts cognitive and neural systems integral to learning and memory, it is critical that we understand how this is defined and analyzed. Therefore, the purpose of this project is two fold: the first is to examine if different measures of poverty affect statistical analysis on behavioral outcomes in psychology using a open access data set (Fragile Families Study; n = 5000); the second is to interrogate whether these current measures are sufficient in elucidating how poverty affects development by establishing a new questionnaire that accurately captures these experiences. Student intern(s) who work on this project will be able to gain experience and support on statistical analysis, R programming, literature review in cognitive neuroscience articles, programming cognitive tasks using jsPsych, survey design using Qualtrics, or other skills that match their own learning goals relevant to this project.

Mentor short bio	My name is Gabriel Reyes, a current PhD student in Developmental and Psychological Sciences at Stanford University on a Knight-Hennessy Scholarship. Originally from Albuquerque, New Mexico and a son of Mexican immigrants, I was the first in my family to graduate from college as a Gates Millennium Scholar, where I earned my Sc.B. in Cognitive Neuroscience from Brown University, as well as an M.S. in Neuroscience & Education from Columbia University. As someone who was born into poverty, I am particularly passionate about science inclusion and promoting people who are systematically excluded from pursuing research experiences as a result of finances; I am a staunch believer that talent is everywhere but opportunities are not. The things I love most in the world are my family (especially my fiancé) , tacos, traveling, movies, and taking long walks (to get tacos).
Required skills	No prior coursework is expected to be selected for this project. Enthusiasm and eagerness to learn about this project will be privileged more than any specific skillsets or knowledge. Students who have prior experience and/or a developing interest in psychology, neuroscience, education, statistics, computer science, or related fields may be preferred. I am more interested to know why a student would want to work on this project and what they would like to gain out of this experience.
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6- 7 hours per week for 9 weeks / $1000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.

DISCIPLINE: PSYCHOLOGY	
Project title	**20. Lifting the Bar: Intervening at School to Reduce Juvenile Recidivism at Stanford**
Keywords	#Psychology, #Qualitative_Research
Mentor/ Supervisor	Anmol Gupta
Institution/ affiliation	Stanford University/ Psychology
Project description	Lifting the Bar is a social psychological intervention designed to improve recidivism outcomes (e.g. returning to detention) for students transitioning out of juvenile detention by "sidelining" the bias that students face when returning to school. In the intervention, participants provide insights into their goals, challenges, and values, as well as their experiences in juvenile detention. For further information about the project, see also: https://www.youtube.com/watch?v=DolhAohOiOo The Foothill College intern will support many functions including background research, literature reviews, an analysis of the relevance of this work to other at-risk populations, qualitative data analysis and other project needs.

Mentor short bio	I'm interested in social psychological solutions to societal problems, especially pertaining to race, gender, and disability. In undergrad, I studied psychology and music, and I love to listen to and make music in my free time. Before coming to Stanford, I worked at the Center for Social Development and Education at UMass Boston, where I worked on program evaluations for inclusive in-school/after-school programming. I'm also a first-gen Indian American and grew up in Wisconsin! After Stanford, I hope to go to grad school to study social psychology.
Required skills	No prior research experience is required! We're looking for someone who is: - interested in social psychology and education - highly detail-oriented - passionate and curious - eager to learn - passionate about social/criminal justice * Some experience with qualitative data (collecting/analyzing) helps but isn't required
# of interns	1
Modality	Fully remote/ online
Schedule/ stipend	**MICRO**: 6 – 7 hours per week for 9 weeks / $1000
Selection process	Mentor will review a small (3 - 5) set of student applications and pick 1 or 2 top choices to make offers to.