



Los Alamos
NATIONAL LABORATORY

LANL INTERN PROJECT DESCRIPTION
BOOK FOR HIGH SCHOOL STUDENTS



TABLE OF CONTENTS

How to Use this Book

Biological Science

Chemistry

Computing and Information Technology (IT)

Earth and Space Sciences

Engineering

Materials Science

Mathematics

Non-Technical (non-STEM)

Physics

HOW TO USE THIS BOOK

Thank you for your interest in Los Alamos National Laboratory's High School Internship Program. Details about the program, the eligibility requirements, and the application process are available on the website [here](#).

The best thing you can do to improve your chances of getting an internship is to reach out to mentors working on projects that align with your academic and professional interests. When you reach out to mentors, be sure to share your resume, brief description of your interests and related experience, and ask about internship opportunities. You can also ask mentors to share your resume with anyone who might have internship opportunities, if they do not have any available.

You can use this book to identify mentors by doing the following steps:

1. Look in the Table of Contents to find discipline areas that interest you.
2. Read all of the project descriptions in the discipline areas that interest you. These project descriptions are examples of actual high school intern projects.
3. These project descriptions include the name of the organization that hired the intern, the name of the mentor that hired the student, and a description of the internship project. When available, a link to additional information on the hiring organization is included. Read the information about the hiring organization when it is available.
4. Create a list of the mentors who supervise projects that interest you.
5. Email the list of mentors to student_programs@lanl.gov and we will send you their email addresses so you can email them.
6. Students with advanced STEM knowledge and skills, can also review the Student Project Description Books available at the bottom of the webpage [here](#) to identify additional prospective mentors. These books contain internship project descriptions for students of all academic levels.

BIOLOGICAL SCIENCE

1. Organization Name

[Theoretical](#) Biology & Biophysics (T-6)

Mentor Name

Ethan Romero-Severson

Internship Project Description

The student will be working on developing epidemiological models of disease transmission focused on fitting COVID-19 data. Their work will involve using open source software to develop applications focused on analysis of public data.

2. Organization Name

Biosecurity & Public Health (B-10)

[Bioscience](#)

Mentor Name

Nileena Velappan

Internship Project Description

There will be 3-4 experimental biology projects that require preparation of microbiological media, a variety of solutions, glassware and general lab supplies. With this project the student will learn basics of molecular biology and microbiology procedures. Their learning experience will include preparation of liquid and solid microbiological growth media for bacteria and yeast, solutions at different molarity, setting up molecular biology reactions and working with many commonly used wet lab instruments. Their contribution will also help senior scientists concentrate more on complex experiments than routine lab maintenance.

CHEMISTRY

1. Organization Name

[Chemistry](#)- Actinide Analytical Chemistry (C-AAC)

Mentor Name

Jung Rim

Internship Project Description

The Student will be working on developing a data acquisition software to control and record data from a High Purity Germanium (HPGe) gamma spectrometer system. This will be written with the C++ programming language. They will be working to develop this code and remote into the LANL computer system to test the developed code. The student will also learn the basic aspects of gamma spectrometry, organizing the acquired data sets, and performing data analysis.

2. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics & Applications](#)

Mentor Name

George Goff

Internship Project Description

The student will be assisting the Actinide Chemistry Team in MPA-11 on a variety of projects related to chemical separations of actinides and critical materials. Their tasks will include doing literature reviews, creating a technical library/database, assisting with data analysis and archiving, as well as a variety of administrative tasks including performing inventory for lab supplies, annual property inventory, and helping set up and stock new lab and office space. They will also assist with Technical Report writing and editing for the Actinide Chemistry team members.

3. Organization Name

Center for Integrated Nanotechnologies (MPA-CINT)

[Materials Physics & Applications](#)

Mentor Name

Ekaterina Dolgoplova

Internship Project Description

The student will work on synthesis and characterization of hybrid crystalline materials. This work involves synthesis of small organic molecules of precursors, synthesis of hybrid frameworks, and characterization using different techniques (e.g., scanning electron microscopy,

fluorescence). No prior training is required, skills are dependent on the exact part of the project and we will teach all the necessary skills.

4. Organization Name

Physics & Chemistry of Materials (T-1)

[Theoretical](#)

Mentor Name

Benjamin Nebgen

Internship Project Description

The student will work on DR 20210087DR “Data Driven Modeling of Non-Equilibrium Dynamics in Chemical and Materials Systems” where they will build ML interatomic potentials for various material and chemical systems. The goal of the DR is to develop the next generation of ML potentials capable of tracking electronic variables and interface them to experimental measurements. During the summer, the student will aid us in developing a user-friendly Active Learning software package for interatomic potentials and deploy this package on Institutional Computing systems to construct interatomic potentials for modeling systems of interest to our experimental collaborators. This will include shocked metals such as Zn and self-assembling ionic liquid systems. Once constructed, these potentials will be used to predict various physical properties which will be compared to experiments done in the DR project. The results of these comparisons will be published.

5. Organization Name

[X-Theoretical Design](#)- Integrated Design & Assessment (XTD-IDA)

Mentor Name

Joseph Smidt

Internship Project Description

The student will be a new high school summer student to help us with our chemistry in the universe astrophysics campaign. Specifically they will learn how to run the Enzo radiation-hydrodynamics cosmology code to form new stars and galaxies. They will then take the already LANL-developed inline chemistry code to help us analyze when water first formed in our universe. The student will also help us develop some simple machine learning classification techniques for quantifying what early galaxies water is more likely to form in.

COMPUTING & INFORMATION TECHNOLOGY

1. Organization Name

Information Systems & Modeling (A-1)

Mentor Name

Nidhi Parkikh

Internship Project Description

We have developed an agent-based (individual-based) simulation for modeling COVID spread at LANL using multiple LANL internal data sources (e.g., accountability surveys, badge reader, and LANL wayback machine data). This simulation is used to evaluate multiple scenarios (no of people onsite and intervention strategies such as social distancing, testing, contact tracing, and vaccine distribution strategies). The student will help plot, analyze, and compare results for different scenarios.

2. Organization Name

Associate Laboratory Director For Weapons Engineering (ALDWP)

Mentor Name

Veronica Asencio

Internship Project Description

The student will be working on Computer Software mapping and analysis, participating in the development of Cost/Benefit Analysis and assisting with creation of a Map for the existing tools/systems that are currently in place to identify gaps to automation.

3. Organization Name

[Advanced Simulation And Computing](#) (ASC)

Mentor Name

Jason Pruet

Internship Project Description

The student will perform studies of modern 4th generation programming languages (particularly Python and Julia) to evaluate their long term potential and will provide briefings describing the results. They will also write a brief report evaluating modern abstraction technologies.

4. Organization Name

[Chemistry](#)- Actinide Analytical Chemistry (C-AAC)

Mentor Name

Jung Rim

Internship Project Description

The Student will be working on developing a data acquisition software to control and record data from a High Purity Germanium (HPGe) gamma spectrometer system. This will be written with the C++ programming language. They will be working to develop this code and remote into the LANL computer system to test the developed code. The student will also learn the basic aspects of gamma spectrometry, organizing the acquired data sets, and performing data analysis.

5. Organization Name

Computational Physics & Methods (CCS-2)

[Computer, Computational, and Statistical Sciences](#)

Mentor Name

Mark Petersen

Internship Project Description

The student will develop exact solutions to the differential equations that govern the Model for Prediction Across Scales (MPAS-Ocean). They will write python code to test ocean simulations and verify against the exact solutions, compute errors, and make convergence plots. As time permits, they will evaluate performance or develop novel codes of simplified ocean models for high performance computing, such as the new julia programming language.

6. Organization Name

Statistical Sciences (CCS-6)

[Computer, Computational, and Statistical Sciences](#)

Mentor Name

Frank Marrs

Internship Project Description

Assist with statistical analysis of synthetic molecular data associated with the MIST project.
Develop and improve statistical models
Implement statistical models in scientific code
Streamline and debug new and existing code
Run analyses.

7. Organization Name

Deputy Laboratory Director for Operations (DDOPS)

Site Infrastructure and Programs Software (SAE-3)

[DDOPS](#)

Mentor Name

Rekha S. Pillai

Internship Project Description

Develop software functions, database tools, and analysis (metrics) tools to support specific software development projects. These projects design and implement enterprise systems to improve the Lab's operational performance (efficiency and effectiveness); ensure that all work performed at the Lab are compliant to federal, state, and institutional requirements and priorities; and improve disciplined operations - driving safety, security, and environmental abnormal events to zero.

8. Organization Name

Space Science & Applications (ISR-1)
[Intelligence & Space Research](#)

Mentor Name

Mark Galassi

Internship Project Description

The student will work on the Diorama project, initially primarily on these three facets: (a) improving the overall user experience, (b) defining output data semantics and formats, and (c) writing plotting infrastructure code for the output data.

9. Organization Name

Network & Infrastructure Engineering- Core Services (NIE-CS)

Mentor Name

Laurin Beckhusen

Internship Project Description

Develop and document network documentation. Build networking incidents, investigation, and engineering skills. Assist with network replacements.

10. Organization Name

Network & Infrastructure Engineering- Engineering & Security Services (NIE-ESS)

Mentor Name

Ricardo Castilla Alvarez & Kristina Bueche

Internship Project Description

The student will be doing the following: Linux, build VM from iso, build VM from LANL default kickstart, Build VM from customized LANL kickstart, Use hardening techniques on VM to satisfy some STIG rules Saltstack, Build master and minion VMs, Perform basic file management through salt states, Connect salt master states to a GIT repository Splunk, Install Splunk on Linux VM, Configure Splunk to ingest data through HEC and file monitors, Install Splunk Machine Learning Tool Kit, Perform Machine Learning analysis on data of the students chose,

Learn and use Regular Expression matching for special field extractions, Document VM builds and Splunk configurations in Confluence, Document tasks in Jira.

11. Organization Name

Network & Infrastructure Engineering- Infrastructure Services (NIE-IS)

Mentor Name

Dylan Merrigan

Internship Project Description

Develop and document network applications and processes. Build networking incidents, investigation, and engineering skills.

12. Organization Name

Technology Development (Q-18)

Mentor Name

Michael Steinzig

Internship Project Description

The student will create web pages for employee career management (training, tracking, resources, etc).

13. Organization Name

Nuclear & Particle Physics, Astrophysics & Cosmol (T-2)

[Theoretical](#)

Mentor Name

Vincenzo Cirigliano

Internship Project Description

At LANL the student will work on a project that aims to test mechanisms for the generation of the matter-antimatter asymmetry in the universe (baryogenesis). They will work on a code that solves the quantum kinetic equations for scalar particles across phase boundaries during the electroweak phase transition in the early universe. They will learn the basics of the baryogenesis mechanisms and will focus on the transport part of the problem, in presence of interactions that violate the charge-parity symmetry. The student will port an existing code from a FORTRAN77 platform to a modern python platform. This is a key step in order to efficiently perform a scan over model parameters, which is needed to test the model.

14. Organization Name

Fluid Dynamics & Solid Mechanics (T-3)

[Theoretical](#)

Mentor Name

Xia Ma

Internship Project Description

The student will learn to work on setting-up and running problems with Pagosa code related to mechanically activated thermal chemistry modeling. The problem can be a deflagration-to-detonation transition (DDT) in explosives involves the transition from the deflagration regime, where the material is burning at a rapid (subsonic) rate, to detonation, where a shockwave develops. The physics behind this process remains an outstanding question and poses a fundamental challenge to our understanding of detonation physics.

15. Organization Name

Physics of Condensed Matter & Complex Systems (T-4)

[Theoretical](#)

Mentor Name

Michael Saccone

Internship Project Description

Artificial spin systems are complex, customizable collections of microscopic magnets that create new physics with their interactions. My research focuses tries to understand how information is processed in these magnets for use as next generation computers, potentially 1000x more efficient than current CPUs. The student will conduct simulations of systems of magnets in Matlab using models I've developed to understand their physical properties. The student should already be familiar with coding (~1 year of experience) and preferably have Matlab experience for a streamlined internship. They will learn some basics of magnetism, condensed matter, and complex systems theory as well as the scientific publishing process, an essential skill for students interested in a career in science.

16. Organization Name

Experience IT: Classified Systems Service (XIT-CSS)

Mentor Name

Judy Hamilton

Internship Project Description

Introduce Linux fundamentals , learn the Linux command line basics, install operating systems and learn configuration management. Develop a good working knowledge of Linux using both the graphical interface and command line.

17. Organization Name

Experience IT Division Office (XIT-DO)

Mentor Name

Osiris Roberts

Internship Project Description

This student will be assisting LANL's XIT-Division with the organization titled XIT-TSS under the EasyIT team.

18. Organization Name

Experience IT Division Office (XIT-DO)

Mentor Name

Osiris Roberts

Internship Project Description

Introduce Linux fundamentals , learn the Linux command line basics, install operating systems and learn configuration management. Develop a good working knowledge of Linux using both the graphical interface and command line.

19. Organization Name

Experience IT: Technology Services & Solutions (XIT-TSS)

Mentor Name

Ben Salas

Internship Project Description

The student will be of support to EasyIT storefront operations. Setting up CryptoCards, iPhone support, opening and closing store, inventory, hardware sales, computer deployments.

20. Organization Name

Experience IT: Technology Services & Solutions (XIT-TSS)

Mentor Name

Leslie Sandoval

Internship Project Description

The student will be assisting LANL's XIT-Division with the organization titled XIT-TSS under the EasyIT team.

21. Organization Name

XIT: Unclassified Systems Service (XIT-USS)

Mentor Name

Moses Gallegos

Internship Project Description

XIT-USS Gold Team Student work plan Solve remote issues for Gold customers. Identify LANL

Computing Resources for use by XIT-USS Computer Technicians. 1. DDS image a. Installation b. Re-installation c. Password tools d. Troubleshooting problems e. Install software f. vrteam solution- look for ways to improve methods for solving vulnerabilities.

22. Organization Name

Project Management Resource Center (PMRC)

Mentor Name

Stacie Trujillo

Internship Project Description

The student will perform hardware and software support duties for Project Management related applications and computers. Duties will include working with team members installing and upgrading operating systems and applications, decommissioning and salvaging out of warranty systems and excess equipment. Provide technical assistance to end users and utilize records systems to track computers, application licenses, support requests, and creating reports.

EARTH & SPACE SCIENCES

1. Organization Name

Computational Physics & Methods (CCS-2)

[Computer, Computational, and Statistical Sciences](#)

Mentor Name

Nicole Lloyd Ronning

Internship Project Description

The student will look into the emission properties of long gamma-ray bursts, signatures of the deaths of the most massive stars in the universe. Part of this will include learning how to mine a large database to search distinct multi-wavelength observational signatures between radio loud and radio quiet long gamma-ray bursts. The student will explore models of their potential progenitor systems (e.g. binary vs. non-binary systems), and their observational consequences.

2. Organization Name

Environmental Protection & Compliance: Waste Management Programs (EPC-WMP)

Mentor Name

Ellena Martinez

Internship Project Description

The student will be supporting those activities associated with the waste management to include supporting the waste compliance and tracking system. They will work with wall to wall inventory data, DOE O 435.1 compliance teams, including analysis, data analysis, and reporting. The

student will also be involved with the implementation and coordination of the Biennial Hazardous Waste Report procedure. We will continue training the student in all aspects and business management of waste management. They will be assigned to a new co-Mentor to learn more about the Site Treatment Plan deliverable, deliverables, and shipping notification process.

3. Organization Name

Fluid Dynamics & Solid Mechanics (T-3)

[Theoretical](#)

Mentor Name

Matthew Hoffman

Internship Project Description

The student will run the Open Global Glacier Model to simulate the future evolution of the global population of mountain glaciers. This makes use of a model setup that is already configured and can be run easily. The student will replace the existing climate model data that is used to force the model with climate model data from DOE's Energy Exascale Earth System Model.

4. Organization Name

Environmental Protection & Compliance: Environmental Stewardship (EPC-ES)

Mentor Name

Kassidy Boorman

Internship Project Description

The student will join the Pollution Prevention Program to support the Climate Change Vulnerability Assessment that is becoming quite urgent with the change of administration. While their primary work will support this project, they will also be given a chance to participate in other work to build their skill set including learning about WCATS, the Intellus NM/EIM database, and/or many other initiatives within the program as it may expand upon their interests and existing skills. The student will also be encouraged to attend/join summer talks, student organizations, and will be supported if their wishes to learn from mentors in other organizations or programs.

5. Organization Name

Space & Remote Sensing (ISR-2)

[Intelligence & Space Research](#)

Mentor Name

James Wren

Internship Project Description

The student will help us develop a good algorithm for using our GPS data to generate an orbit

element set in real time on the GS-J CubeSats. There are established algorithms for doing this, but we could start with some research and develop a simple model based on some randomly generated test data. Then we can move to working with the real data and more complicated models.

6. Organization Name

Space Data Science & Systems (IRS-3)
[Intelligence and Space Research](#)

Mentor Name

Keith Morgan

Internship Project Description

The student will work on one of the following tasks for the IAEA Rainbox project based on schedule, budget and interest. - Design and develop auxiliary software (e.g. logging, system monitoring, etc.) - Unit test development.

7. Organization Name

Space Data Science & Systems (ISR-3)
[Intelligence & Space Research](#)

Mentor Name

Olivia Stella

Internship Project Description

The student will be a member of the Atalanta high school internship pilot program. The 8-week program will highlight career opportunities in the STEM field with various STEM assignments.

8. Organization Name

Radiation Protection: Radiation Protection Services (RP-SVS)

Mentor Name

Tommy Robbins

Internship Project Description

Assist the External Dosimetry Team with dosimeter(s) processing and other related activities, including maintenance of dosimeter holders. Extensive interaction with customers face/face, phone, database entries, and email. Assist engineering technician with assembly of equipment.

9. Organization Name

Utilities & Institutional Facilities: Operations Support & Improvement (UI-OSI)

Mentor Name

Dalinda Bangert

Internship Project Description

Metering template: Update the Excel metering workbook by using Geographic Information Systems (GIS) mapping to identify what utilities a building is served by and updating the information in the template. SSP Templates: Create simple templates that can be used by various divisions/departments to answer the questions posed by the Department of Energy Site Sustainability Plan Guidance. This would involve gathering the guidance documents from the DOE, or past copies of the LANL SSP and including the topics to be covered and a place for others to write a response. Sustainability Story Map: Create a story map showing the Sustainability Programs progress campus-wide on efficiency and sustainable projects using GIS. Outline/layout for new GP web based software: Create an outline of content, and if time and skills allow, a graphic layout idea that can be used by LANL software engineers to create a web-based software to collect data about buildings as they progress from design through construction. LCCE cost study for water, gas, steam, electricity meters vs. 10% cost savings: Develop a set of estimated costs for each type of meter installation based on investigation of costs of meter, lost work time in a building due to shut-down, installation costs for each trade, etc. Develop an Excel workbook that can be used to compare the potential 10% cost savings based on an estimated water use for any building, and the known or estimated energy use. Estimated water use should be based on standards that are available where fixtures, flow rates, and number of occupants would estimate the water use for any building. Risk Assessment Templates for use by existing buildings, or they could complete a few building specific analyses.

10. Organization Name

Utilities & Institutional Facilities: Operations Support & Improvement (UI-OSI)

Mentor Name

Monica Witt

Internship Project Description

Metering template: Update the Excel metering workbook by using geographic information system (GIS) mapping to identify what utilities a building is served by and updating the information in the template. System security plan (SSP) templates: Create simple templates that can be used by various divisions/departments to answer the questions posed by the Department of Energy Site Sustainability Plan Guidance. This would involve gathering the guidance documents from the DOE, or past copies of the LANL SSP and including the topics to be covered and a place for others to write a response. This could be done in word or a fillable pdf so long as the resulting responses can be easily cut and pasted into another document. Formatting, such as spacing and font should be consistent throughout. Sustainability Story Map: Create a story map showing the Sustainability Programs progress campus-wide on efficiency and sustainable projects using GIS. Outline/layout for new GP web based software: Create an outline of content, and if time and skills allow, a graphic layout idea that can be used by LANL software engineers to create a web-based software to collect data about buildings as they progress from design through construction. The data collected will be all requirements in the Guiding Principles for sustainable Federal buildings. LCCE cost study for water, gas, steam,

electricity meters vs. 10% cost savings: Develop a set of estimated costs for each type of meter installation based on investigation of costs of meter, lost work time in a building due to shut-down, installation costs for each trade, etc. Develop an Excel workbook that can be used to compare the potential 10% cost savings based on an estimated water use for any building, and the known or estimated energy use. Estimated water use should be based on standards that are available where fixtures, flow rates, and number of occupants would estimate the water use for any building. Risk Assessment Templates for use by existing buildings, or they could complete a few building specific analyses. Write procedures for Existing Buildings to meet the 2020 GPs: There are several Guiding Principles that may be met with institution-wide policies and procedures. The project would involve reading, researching existing policies, and writing or editing existing policies to cover the requirements in the Guiding Principle criteria. Investigate and make suggestions about beginning a Resiliency project with the FEMP Technical Resilience Navigator: Research and present the program to the Sustainability Team and make suggestions about its usefulness, time requirements, etc.

ENGINEERING

1. Organization Name

Materials Recovery & Recycle (AMPP-4)

Mentor Name

Daniel Rios

Internship Project Description

The student will be given a collaborative project in support of the Surveillance and Monitoring Program. They will examine hundreds of laser confocal microscopes (LCM) and metallography images for stress corrosion cracking. The student is going to generate histograms for the number of cracks and their lengths/depths from these images. They will also learn to apply engineering and chemical principles to perform studies under control conditions to determine if stress corrosion cracking is continuing at the time of destructive examination of 3013 containers. The student will expose 304L stainless steel specimens to non-radioactive corrosive solutions suspected to cause corrosion in 3013 containers packaged with chloride-bearing PuO₂. This work will be performed by the student under their mentor supervision. They will learn to set up chemical reactions, use non-radiological inert gloveboxes, and have hands-on experience on various analytical instruments (LCM, FT-IR, UV-Vis, and NMR). When they are not doing image analysis, the student will be in the lab coming out with ideas on how to perform corrosion experiments.

2. Organization Name

[Accelerator Operations & Technology](#)- Mechanical Design Engineering (AOT-MDE)

Mentor Name

Walter Barkley

Internship Project Description

1. Learn the design process and drawing construction by analyzing drawings and scanning them into an electronic format 2. Learn file organization by working with Windows Explorer to organize the scanned files appropriately 3. Begin to learn some aspects of Computer-aided design (CAD) drawing creation by opening and studying Unigraphics files and converting them into pdfs 4. Perform a floor layout using CAD software to consolidate flat files from buildings 2 and 6 into one location 5. Tour the fabrication shop at ETL to witness fabrication of parts from drawings 6. Tour the accelerator to view installations from design drawings.

3. Organization Name

[Accelerator Operations & Technology](#)- Radio Frequency Engineering (AOT-RFE)

Mentor Name

William Roybal

Internship Project Description

The student will work with Engineers and Technicians to further refine (EPICS) User/Operator control screens for various remotely operated equipment on the LANSCE Accelerator. The student can accomplish the EPICS screens improvements through good practice of user interface and communication.

4. Organization Name

[Accelerator Operations & Technology](#)- Radio Frequency Engineering (AOT-RFE)

Mentor Name

William Roybal

Internship Project Description

The student will be designing a rack installation for a reversing switch.

5. Organization Name

Deputy Laboratory Director for Operations (DDOPS)

Site Infrastructure and Programs Software (SAE-3)

[DDOPS](#)

Mentor Name

Rekha S. Pillai

Internship Project Description

Develop software functions, database tools, and analysis (metrics) tools to support specific software development projects. These projects design and implement enterprise systems to improve the Lab's operational performance (efficiency and effectiveness); ensure that all work

performed at the Lab are compliant to federal, state, and institutional requirements and priorities; and improve disciplined operations - driving safety, security, and environmental abnormal events to zero.

6. Organization Name

Mechanical & Thermal Engineering (E-1)

Mentor Name

Thomas Sant

Internship Project Description

The project goal for the student is to gain broad exposure to the STEM fields, and to mechanical engineering in particular. Primary points-of-learning will be related to design engineering, including solid modeling and the generation of engineering drawings suitable for fabrication. Additional experiences or assignments may include 1) solving classic analytical structural/thermal engineering problems and comparing results to FEA using Solidworks Simulation, 2) learning electrical engineering principles and programming through breadboard prototyping and the use of microcontrollers, 3) supervised light assembly and experimental work in a laboratory setting, 4) facility and laboratory tours, and 5) informational sessions with staff of various backgrounds or with backgrounds of particular interest to the student. Projects (and any deliverables) will therefore be disparate and modular in nature.

7. Organization Name

Mechanical & Thermal Engineering (E-1)

Mentor Name

Katelyn Yeamans

Internship Project Description

The student will work with their mentor to develop an understanding of Systems Engineering and exercise tools available for Model-Based Systems Engineering.

8. Organization Name

Process Automation & Control (E-3)

Mentor Name

Dustin Bittner

Internship Project Description

The student will help with various projects such as ARIES. Within ARIES, general engineering work may be assigned, such as engineering drawings and modeling, research off-the-shelf parts and systems, be involved with assembly, programming, and testing of systems.

9. Organization Name

Engineering Services- Engineering Project Delivery (ES-EPD)

Mentor Name

Wajdi Ahmad

Internship Project Description

Assignment to NFPA 70E team to learn about SKM modeling software, how to set up and perform ARC Flash calculations, CAD drawings and standards, NFPA 70E codes and requirements and how they apply to maintaining facility low voltage electrical equipment, updating and maintaining documentation of field verified electrical configurations. Exposure to current I&C projects, involving walkdowns, schematic reviews, and basic programming.

10. Organization Name

Engineering Services- Engineering Project Delivery (ES-EPD)

Mentor Name

Thaddeus Kostrubala

Internship Project Description

The Student will be assigned to assist the Engineering Services Engineering Project Delivery (ES-EPD) Institutional Project Engineering (IPE) team. Tasks will include: project development process including scope, design, construction and closeout; designing of projects; field inspection of projects. All tasks will be engineering or civil related.

11. Organization Name

Engineering Services- Engineering Project Delivery (ES-EPD)

Mentor Name

Thaddeus Kostrubala

Internship Project Description

The student will support project engineering.

12. Organization Name

Engineering Services- Facility Engineering (ES-FE)

Mentor Name

Daniel Tepley

Internship Project Description

a. For COE procedures there is a need to map the many requirements to the procedures- this will be in the form of a matrix that can be easily searched and updated as documents are revised. This will introduce the student to how configuration management is handled within a highly-regulated industry, similar to aerospace and NASA. b. The Engineering Services Division

Office is working on creating an ES-specific glossary that will be approved and posted on the engineering standards webpage. This is in its infancy and needs a first draft completed for posting this summer. This will basically entail going through all the COE documents and chapters to find all the definitions located throughout and putting them in one document. This activity will serve to expand the students vocabulary and understanding of engineering terms and how procedures are put together, another action that is similar in the industries the student is interested in. c. Introduction activities to the other parts of COE and FE. d. If schedule and time permits, the student will be tasked with additional requirements documentation and mapping activities with the LANL Engineering Standards Manual and associated supporting documentation.

13. Organization Name

Engineering Services- Facility System Engineering Utilities & Infrastructure (ES-UI)

Mentor Name

Alyna Montoya-Wiuff

Internship Project Description

The student will be assigned to the Utilities and Infrastructure primary electrical engineering team to learn about ETAP modeling software, creating and modifying system models, performing various power system analyses, and verifying data input for accuracy.

14. Organization Name

Space Instrument Realization (ISR-5)

[Intelligence & Space Research](#)

Mentor Name

Zachary Miller

Internship Project Description

Mechanical engineering specifically related to the design and manufacturing of satellite instrumentation. All work will be conducted in an office/lab environment. Scope to include practical design and engineering analysis, methodology, testing, and record keeping within the fields of mechanical engineering and space based instrument development. The student will become familiar with materials, environments, constraints, and requirements of designing for highly unique and difficult situations. Internship would begin with mechanical testing of unique AM plastic and introductory level CAD work.

15. Organization Name

[Dynamic Structure Design & Engineering](#) (J-2)

Mentor Name

Danielle Mares

Internship Project Description

The student will be scanning documents into electronic format, CAD design.

16. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics & Applications](#)

Mentor Name

Alexandria Marchi

Internship Project Description

The summer student will support data analysis of sensor data from mechanical diagnostics (e.g., accelerometer, strain sensors) and chemical process diagnostics (e.g., pressure sensors, spectroscopic sensors) for unique mechanical/chemical engineering systems. They will be engaged in computer aided design (CAD) software and MATALB programming. Our team is very interdisciplinary and will provide a great learning experience for someone interested in engineering (ChemE, MechE, EE, MateE) but not set on a particular type. An Ideal candidate has experience/interest in mechanical design and data analysis using computer programming and datasheet manipulation. A combined interest in computer and hands-on work is preferred, but computer data analysis is required.

17. Organization Name

Applied & Fundamental Physics (P-2)

[Physics](#)

Mentor Name

Tiffany Desjardins

Internship Project Description

The student will be introduced to two programs often used in engineering: Solidworks and Labview. They will also have time to shadow us on experiments to experience that type of work. After the student has gained some experience with Solidworks and Labview, the student will decide whether they want to work more explicitly with one versus the other. The Solidworks project will involve doing a drawing in Solidworks and performing FEA analysis, and writing an engineering style report. The Labview project will involve revamping an existing control system on the TMT experiment. If the student does not have experience with either program, we would like to give them the chance to choose on what suits them best after an initial introduction to the two programs.

18. Organization Name

[Applied & Fundamental Physics](#) (P-2)

Mentor Name

Richard Van de Water

Internship Project Description

The student will work on the Coherent Captain Mills (CCM) experiment at that LANSCE Lujan center searching for sterile neutrinos, dark matter and axions.

19. Organization Name

Technology Development (Q-18)

Mentor Name

Michael Steinzig

Internship Project Description

The student will create web pages for employee career management (training, tracking, resources, etc).

20. Organization Name

Finishing Manufacturing Science (SIGMA-2)

[Sigma](#)

Mentor Name

Michael McBride

Internship Project Description

In this project, the student will perform tribological measurements to determine the wear properties (coefficient of friction, wear rate) of electroplated rhenium (Re) and rhenium-alloy coatings. This will be completed using a pin-on-disk tribometer. Testing procedures will be developed, including optimal pin material, applied force, and scratch distance. They will also work with Sigma engineers and scientists to upload experimental data to the Granta Database. The experimental data will consist of corrosion, surface roughness, and print parameter data that has been previously collected. Further, code to automatically plot and analyze experimental tribometer and corrosion data will be developed.

21. Organization Name

Strategic Planning & Logistic Office (SPLO)

Mentor Name

Elshan Akhadov

Internship Project Description

The student will explore various career options in STEM. The internship will expose the student to various topics in STEM such as programming, systems engineering, as well as construction and project management.

22. Organization Name

Power Supply Production (AMPP-5)

Mentor Name

William Stellwag

Internship Project Description

The student will build and test a recirculating water system for eventual use in PF-4 for metallurgical preparation. We have plans for a system. The student will purchase the required items, assemble them, and then test this equipment for effectiveness. They will then write a report detailing their work over the summer. They will get training on metallurgical preparation (as well as other necessary training).

23. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics and Applications](#)

Mentor Name

Christopher Leibman

Internship Project Description

The student will work assisting EMIS laboratory personnel with organizing laboratory supplies and equipment. They will also be tasked with coordinating the design and manufacturing of hardware as needed to advance EMIS technology development activities. All hands-on work will be conducted under the direct supervision of Chris Leibman, Kevin Dudeck and/or David Dogruel. They will also be tasked with conversion of non-solid works computer aided designs to Solid Work files ensuring all dimensional information is transferred. This non-hazardous work can be conducted independently without direct supervision.

24. Organization Name

Finishing Manufacturing Science (SIGMA-2)

[Sigma](#)

Mentor Name

Jamie Stull

Internship Project Description

In this project, the student will perform tribological measurements to determine the wear properties (coefficient of friction, wear rate) of electroplated rhenium (Re) and rhenium-alloy coatings. This will be completed using a pin-on-disk tribometer. Testing procedures will be developed, including optimal pin material, applied force, and scratch distance. They will also work with Sigma engineers and scientists to upload experimental data to the Granta Database. The experimental data will consist of corrosion, surface roughness, and print parameter data that has been previously collected. Further, code to automatically plot and analyze experimental tribometer and corrosion data will be developed.

MATERIALS SCIENCE

1. Organization Name

Center For Integrated Nanotechnologies (MPA-CINT)

[Materials Physics and Applications](#)

Mentor Name

Ekaterina Dolgoplova

Internship Project Description

The student will work on synthesis and characterization of hybrid crystalline materials. This work involves synthesis of small organic molecules of precursors, synthesis of hybrid frameworks, and characterization using different techniques (e.g., scanning electron microscopy, fluorescence). No prior training is required, skills are dependent on the exact part of the project and we will teach all the necessary skills.

2. Organization Name

Center For Integrated Nanotechnologies (MPA-CINT)

[Materials Physics and Applications](#)

Mentor Name

Jennifer Hollingsworth

Internship Project Description

The student will learn to characterize optical nanomaterials by various techniques, which will include quantum yield measurements and ensemble and single-nanomaterial photoluminescence. They will also learn how to process and analyze the optical data. Depending on their progress, they may also learn to operate a scanning electron microscope and dip-pen nanolithography system. All activities are low hazard. The student will add to their capabilities by learning how to prepare samples and polymer composites, some of which will contain nanomaterials. Sample preparation will involve the use of spin-coating and drop-casting methods, and possibly Langmuir-Blodgett and 3D printer techniques.

3. Organization Name

Materials Science In Radiation & Dynamic Extremes (MST-8)

[Materials Science and Technology](#)

Mentor Name

Donald Brown

Internship Project Description

The students initial assignment will be a literature review on the deformation of tantalum. That review will be incorporated into a paper on micromechanics of deformation of tantalum. If this is successful, they will be included in remote experiments at the Advanced Photon Source and subsequent data analysis.

4. Organization Name

Physics & Chemistry of Materials (T-1)

[Theoretical](#)

Mentor Name

Sven Rudin

Internship Project Description

Learn the ropes of performing fundamental theoretical materials science and the physics/chemistry concepts related to the scientific project, which is to explore how lattice imperfections affect the phonon spectrum of doped graphene.

5. Organization Name

[Physics of Condensed Matter & Complex Systems](#) (T-4)

Mentor Name

Michael Saccone

Internship Project Description

Artificial spin systems are complex, customizable collections of microscopic magnets that create new physics with their interactions. My research focuses tries to understand how information is processed in these magnets for use as next generation computers, potentially 1000x more efficient than current CPUs. The student will conduct simulations of systems of magnets in Matlab using models I've developed to understand their physical properties. The student should already be familiar with coding (~1 year of experience) and preferably have Matlab experience for a streamlined internship. They will learn some basics of magnetism, condensed matter, and complex systems theory as well as the scientific publishing process, an essential skill for students interested in a career in science.

6. Organization Name

Materials Science In Radiation & Dynamics Extremes (MST-8)

[Materials Science and Technology](#)

Mentor Name

George Gray

Internship Project Description

The student will be working with us on uploading legacy mechanical testing data into GRANTA.

MATHEMATICS

1. Organization Name

Deputy Laboratory Director for Operations (DDOPS)

Site Infrastructure and Programs Software (SAE-3)

[DDOPS](#)

Mentor Name

Rekha S. Pillai

Internship Project Description

Develop software functions, database tools, and analysis (metrics) tools to support specific software development projects. These projects design and implement enterprise systems to improve the Lab's operational performance (efficiency and effectiveness); ensure that all work performed at the Lab are compliant to federal, state, and institutional requirements and priorities; and improve disciplined operations - driving safety, security, and environmental abnormal events to zero.

2. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics and Applications](#)

Mentor Name

Alexandria Marchi

Internship Project Description

The summer student will support data analysis of sensor data from mechanical diagnostics (e.g., accelerometer, strain sensors) and chemical process diagnostics (e.g., pressure sensors, spectroscopic sensors) for unique mechanical/chemical engineering systems. They will be engaged in computer aided design (CAD) software and MATLAB programming. Our team is very interdisciplinary and will provide a great learning experience for someone interested in engineering (ChemE, MechE, EE, MateE) but not set on a particular type. An Ideal candidate has experience/interest in mechanical design and data analysis using computer programming and datasheet manipulation. A combined interest in computer and hands-on work is preferred, but computer data analysis is required.

3. Organization Name

[Applied & Fundamental Physics](#) (P-2)

Mentor Name

Richard Van de Water

Internship Project Description

The student will work on the Coherent Captain Mills (CCM) experiment at that LANSCE Lujan center searching for sterile neutrinos, dark matter and axions.

4. **Organization Name**

[Physics of Condensed Matter & Complex Systems](#) (T-4)

Mentor Name

Michael Saccone

Internship Project Description

Artificial spin systems are complex, customizable collections of microscopic magnets that create new physics with their interactions. My research focuses tries to understand how information is processed in these magnets for use as next generation computers, potentially 1000x more efficient than current CPUs. The student will conduct simulations of systems of magnets in Matlab using models I've developed to understand their physical properties. The student should already be familiar with coding (~1 year of experience) and preferably have Matlab experience for a streamlined internship. They will learn some basics of magnetism, condensed matter, and complex systems theory as well as the scientific publishing process, an essential skill for students interested in a career in science.

NON-TECHNICAL (non-STEM)

1. **Organization Name**

Emergency Management Division Office (EM-DIVOFF)

Mentor Name

James Jones

Internship Project Description

The student will provide administrative support for the COOP Program, which includes creating and organizing electronic/paper files that prepare the Laboratory to respond to a Continuity Event.

2. **Organization Name**

High Performance Computing Division Office (HPC-DO)

Mentor Name

Randal Rheinheimer

Internship Project Description

Transcription of oral histories and log notebooks with extraction of summaries and keywords for future history research.

3. Organization Name

Integrated Nuclear Program Delivery: Space & Stockpile Management (INP-SSM)

Mentor Name

Stacey Eaton

Internship Project Description

The student will be responsible for scanning in paper records for the Radioisotope Power System program, covering several decades of manufacturing data. They will manage the organization of their work, developing a system for determining status and progress, and will populate and update the virtual reference library on the team's Sharepoint site.

4. Organization Name

LANSCE Facility Operations (LANSCE-FO)

Mentor Name

Tracy Salazar

Internship Project Description

The student will work as a member of LFO-DO and deployed staff by assisting with division/group administration. Laboratory skills acquired will include: utilization of LANL-wide systems such as the LANL Oracle system for time and labor; customer service skills; familiarity with organizational structures and line management responsibilities; familiarity with Laboratory issues involving health and safety, environmental compliance, security, quality, records management and document control, and operations; and worker safety programs. The student will also be responsible for filing, copying, scanning documents, and maintaining hard copy and electronic files. They will be required to work safely and efficiently, and to assist LFO-DO and deployed staff as needed. Responsibilities may include specific knowledge of keys/core programs at TA-53 and back up assistance for the TA-53 key custodian.

5. Organization Name

Materials Science In radiation & Dynamics Extremes (MST-8)

[Materials Science & Technology](#)

Mentor Name

Angela Martinez

Internship Project Description

The students will assist the MST-8/MST-DO admin staff with various office duties, including but not limited to - answering of phones, calendar management, form completion, and distribution of mail.

6. Organization Name

Safeguards Science & Technology (NEN-1)

Mentor Name

Laura Limback

Internship Project Description

The student will perform administrative duties in support of the NEN-1 Safeguards & Security Technology Training Schools and the Keepin Summer Program. They may also, as appropriate, have the opportunity to observe/review some of the work that is being performed by technical staff members, in order to familiarize them with various topical areas within NEN-1.

7. Organization Name

Project Controls Line Items & FOD (PC-LI-FOD)

Mentor Name

Michael Solano

Internship Project Description

Support basic project controls functions within LI-FOD organization. Duties include development and maintenance of CAM notebooks, excel data management, QA and crosschecks of performance data and dashboard reviews. Develop metric views and performance charts using Microstrategy, attend EV training as applicable and participate in team meetings.

8. Organization Name

Project Integration Office: Project Management (PIO-PM)

Mentor Name

Erwin Vargas

Internship Project Description

The student will work on Capital Projects- Project Management Support.

9. Organization Name

Policy Office (POL)

Mentor Name

Diane Daughton

Internship Project Description

Collaborate on and complete special projects as needed or assigned. Projects may include records organization, document coordination, contribute to communication efforts, general research, collaboration with POL team members on projects, and participation in POL team activities.

10. Organization Name

Security: Personal Security (SEC-PS)

Mentor Name

Christina Unzueta

Internship Project Description

The student will be providing customer service support in the Badge Office. Their duties will include greeting customers, conducting identity and citizenship verification, data entry, answering phones, responding to tickets in Request Tracker and providing guidance to customers needing badging services.

11. Organization Name

Security: Personal Security (SEC-PS)

Mentor Name

Karen Williams

Internship Project Description

The student will be assisting the Security Awareness Program with administrative activities, presentations and customer support. This will include responding to phone calls, tickets and walk-in customers, as available. Additionally, they will provide assistance with database management and document storage/destruction.

12. Organization Name

Service Innovation: Document Control Records Management (SI-DCRM)

Mentor Name

Karen Matuszak

Internship Project Description

The student will assist with EDRMS metadata updating; Work on various records projects to include scanning and uploading into EDRMS.

13. Organization Name

Science Resource Office: Communications & Peer Review (SRO-CP)

Mentor Name

Ashley D'Anna

Internship Project Description

The student will assist in the Collaboration Space. They will assist with the general maintenance/upkeep of the meeting rooms, meeting spaces, equipment, signage, etc.. They will assist with calendar management, answer calls and emails, will spend some time on the central information desk and assist customers and provide tech support. The student will assist with

projects and other tasks as needed. They will also be assisting with multiple different PURE projects including science highlights and scopus id. The student will assist the Collaboration Space with keeping the space and rooms clean and sanitized, keeping meetings to a limited number of attendees, ensuring participants all wear masks and stay socially distanced.

14. Organization Name

Science Resource Office: Research Library (SRO-RL)

Mentor Name

Tebols Casados

Internship Project Description

The student will shelve books and journals, scan and email articles for customers, straighten public areas, shift books and journals to new locations as needed, and repair damaged books and journals. In addition they will be checking in and checking out books to customers, responding to customer emails and filling customer requests. They will sort incoming mail and will continue to learn practices of data maintenance in the Research Library system which includes working in the cataloging and circulation modules. They will work on special projects as assigned, such as cataloging maintenance projects, verifying electronic journal accessibility as well as other miscellaneous/special projects as they come up.

15. Organization Name

Fluid Dynamics & Solid Mechanics (T-3)

[Theoretical](#)

Mentor Name

Jiajia Waters

Internship Project Description

The student will learn to work on setting up and running problems with pagosa code related to mechanically activated thermal chemistry modeling. The problem can be a deflagration-to-detonation transition (DDT) in explosives involves the transition from the deflagration regime, where the material is burning at a rapid (subsonic) rate, to detonation, where a shockwave develops. The physics behind this process remains an outstanding question and poses a fundamental challenge to our understanding of detonation physics.

16. Organization Name

Weapons Research Services- Secure Information Services (WRS-SIS)

Mentor Name

Alan Carr

Internship Project Description

The student will be assigned the following tasks: 1. Will work with Laboratory archivists and

librarians in the NSRC on projects as assigned 2. If the student symposium is held, they will assist in developing a poster 3. May research and write historical pieces that can be published in LANL Today, the soon-to-be-launched NSRC blog on the new landing page, and The Vault magazine if the opportunity presents itself 4. Will assist the Chief Librarian in organizing/maintaining the NSRC book collection 5. May be loaned-out to other WRS organizations or possibly the Research Library to do unclassified work if the opportunity presents itself 6. Will complete other tasks as assigned.

17. Organization Name

Infrastructure Program Office (IFPROG)

Mentor Name

Dennis Vigil

Internship Project Description

The student will be of General support for multiple groups within the IFPROG Data Group, including research, data analysis and administrative support.

18. Organization Name

SCIF Requirements & Resources (SSO-4)

Mentor Name

Melissa Lopez

Internship Project Description

The summer project intended for the student will center around data collection across the SSO Division, gathering metrics related to SCIF operations, customer interactions, daily deliverables and compliance data points that will then be compiled into snapshot reports that will help distill the work SSO does across the board to support the LANL FIE. The student will need to possess the work ethic needed to collect, manage and report multiple data streams to SSO-4 staff who will then compile data into reports for SSO-DO management.

PHYSICS

1. Organization Name

Deputy Laboratory Director for Operations (DDOPS)

Site Infrastructure and Programs Software (SAE-3)

[DDOPS](#)

Mentor Name

Rekha S. Pillai

Internship Project Description

Develop software functions, database tools, and analysis (metrics) tools to support specific

software development projects. These projects design and implement enterprise systems to improve the Lab's operational performance (efficiency and effectiveness); ensure that all work performed at the Lab are compliant to federal, state, and institutional requirements and priorities; and improve disciplined operations - driving safety, security, and environmental abnormal events to zero.

2. Organization Name

Dynamic Imaging & Radiography (P-1)

[Physics](#)

Mentor Name

Dale Tupa

Internship Project Description

The student will learn basic procedures for working safely in a general physics laboratory, and the specific procedures for working safely at the Proton Radiography Facility. They will provide general assistance in both the laboratory and around the offices. They will document their work in a laboratory notebook. The student will assist in general computer, electronic, and mechanical tasks so that they can start to learn which type of work they might like to specialize in in the future. They will assist in establishing a new optics laboratory for the Proton Radiography Facility.

3. Organization Name

[Applied & Fundamental Physics](#) (P-2)

Mentor Name

Richard Van de Water

Internship Project Description

The student will work on the Coherent Captain Mills (CCM) experiment at that LANSCE Lujan center searching for sterile neutrinos, dark matter and axions.

4. Organization Name

Nuclear & Particle Physics & Applications (P-3)

[Physics](#)

Mentor Name

Takeyasu Ito

Internship Project Description

The student will work with scientists, engineers, and technologists in the P-3 neutron team on SNS nEDM and LANL nEDM experiments. They will lead or assist with various R&D activities. Specific tasks include: scanning parts for nEDM experiments for magnetic impurities using atomic and fluxgate magnetometers.

5. Organization Name

[Physics of Condensed Matter & Complex Systems](#) (T-4)

Mentor Name

Michael Saccone

Internship Project Description

Artificial spin systems are complex, customizable collections of microscopic magnets that create new physics with their interactions. My research focuses tries to understand how information is processed in these magnets for use as next generation computers, potentially 1000x more efficient than current CPUs. The student will conduct simulations of systems of magnets in Matlab using models I've developed to understand their physical properties. The student should already be familiar with coding (~1 year of experience) and preferably have Matlab experience for a streamlined internship. They will learn some basics of magnetism, condensed matter, and complex systems theory as well as the scientific publishing process, an essential skill for students interested in a career in science.

6. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics & Applications](#)

Mentor Name

Cortney Kreller

Internship Project Description

The student will perform work related to fuel cells to meet varying power source requirements. The student will prepare components for fuel cell builds, build fuel cell stacks, learn to test the stacks performance and learn to conduct materials characterization on the various components.

7. Organization Name

Materials Synthesis & Integrated Devices (MPA-11)

[Materials Physics & Applications](#)

Mentor Name

Brian Scott

Internship Project Description

The student will only observe the following work, and wear the appropriate PPE. They will not perform any synthetic tasks. 1) Synthesis and characterization of silicon-based molecular cages for lanthanide and actinide separations. The synthesis of the cage will be performed by controlled hydrolysis of silanes in presence of various amounts of acids or bases. The ligands will be prepared following numerous synthetic techniques, and then be either attached to the silane molecule prior to the hydrolysis, or appended on the previously prepared cage. The

specific examples of molecules that will be prepared will include T8R8 silsesquioxane cages, D4(OH)4 rings and azo-aryl ligands. 2) Formation of dendritic heterobimetallic complexes exhibiting communication between metal centers to study electron transfer. Chelation of metal centers using multidentate ligands will be achieved using solution based techniques. The student will make UV-vis and IR measurements, but will not prepare samples. Will load sealed cuvettes of samples prepared by the mentor, and run the data collection software under direct supervision by the mentor.

8. Organization Name

Center For Integrated Nanotechnologies (MPA-CINT)

[Materials Physics & Applications](#)

Mentor Name

Andrew Jones

Internship Project Description

The student will be splitting their time between basic laboratory cleaning and organization projects (~50% of time) and design projects associated with the refurbishing of an optical microscopy system in lab 1202 of Building 1420.

9. Organization Name

Physics & Chemistry Of Materials (T-1)

[Theoretical](#)

Mentor Name

Christopher Ticknor

Internship Project Description

Part of Athena Engineering Scholars Program: Atlanta Summer Internship Pilot Program. For the first few weeks we will be digitizing data from historical references, such as (i) Gibbs and Popolato or (ii) Marsh. These resources will be provided in pdf form. The data are to be put into google sheets. We will specify the format. The data will be specified for the first few weeks. As we collect data, we will begin to work on plotting data to make sure that we have correctly transcribed it. As this process is developed, we will be able to search for data and specific types and extract data from images from the Proceedings for the International Symposia on Detonation (IDS) which date from 1951-2019. For the IDS, the data must also be cited correctly. These will also be put into google sheets. The final effort will be to learn python programming. This will involve first using python to plot data. Then we will develop the work to cover more advanced topics such as data processing or learning to use git to develop shared code.

10. Organization Name

[X-Theoretical Design](#)- Primary Physics (XTD-PRI)

Mentor Name

Christina Scovel

Internship Project Description

The student will be moving from A-1 to XTD-PRI where they will be working with a mentor on an HE modeling project. They will be using EAP and LAP codes to simulate local small scale experiments and they will document their work.