Welcome to the Application Assistance Workshop for the Science Undergraduate Laboratory Internship (SULI) Program



Presenter: Dr. Brandi Toliver, Program Manager E-mail: SC.SULI@science.doe.gov

Breakthroughs at the DOE National Laboratories

- Advanced Supercomputing-The National Labs operate some of the most significant high performance computing resources available, including 32 of the 500 fastest supercomputers in the world. The Summit supercomputer at Oak Ridge National Laboratory is capable of 200 petaflops, or 200,000 trillion calculations per second.
- **Put the Jolt in Volt** Chevy's Volt would not be able to cruise on battery power were it not for the advanced cathode technology that emerged from a National Lab (specifically, Argonne National Lab).
- **Decoded DNA**-In 1990, the National Labs joined with the National Institutes of Health and other laboratories to kick off the Human Genome Project, an international collaboration to identify and map all of the genes of the human genome.
- Brought the web to the U.S.-National Lab scientists, seeking to share particle physics information, were first to install a web server in North America, kick-starting the development of the worldwide web as we know it.
- Unmasked a dinosaur killer-Natural history's greatest whodunit was solved in 1980 when a team of National Lab scientists pinned the dinosaurs' abrupt extinction on an asteroid collision with Earth. Case closed.
- World's First Video Game- Before there was Atari or Nintendo, there was Tennis for Two, which may have been the first video game ever created, Brookhaven National Lab scientists built the pioneering system to entertain visitors to the Lab in 1958.
- Launched the LED lighting revolution-In the 1990s, scientists at a National Lab saw the need for energy-efficient solid-state lighting and worked with industry to develop white LEDs. Today, white LEDs are about 30 percent efficient, with the potential to reach 70 percent to 80 percent efficiency.
- 3D Printing Bigger and Better-A large-scale additive manufacturing platform developed by a National Lab and an industry partner printed 3D components 10 times larger and 200 times faster than previous processes. So far, the system has produced a 3D-printed sports car, SUV, house, excavator and aviation components.
- Discovered 22 elements To date the National Labs have discovered: technetium, promethium, astatine, neptunium, plutonium, americium, curium, berkelium, californium, einsteinium, fermium, mendelevium, nobelium, lawrencium, rutherfordium, dubnium, seaborgium, flerovium, moscovium, livermorium, tennessine and oganesson.



Additional breakthroughs are available at https://www.energy.gov/downloads/75-breakthroughs-americas-national-laboratories

Office of Science at a Glance (https://science.osti.gov/)

 Lead federal agency supporting fundamental scientific research for energy and the largest supporter of basic research in the physical sciences in the United States
 FY 2023 Funding Requested: \$7.799B



Largest Supporter of Physical Sciences in the U.S.



Funding at >300 Institutions, including 17 DOE Labs



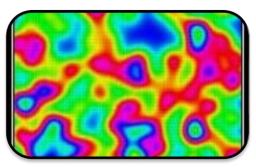
~29,000 Researchers Supported



~34,000 Users of 28 SC Scientific Facilities



~35% of Research to Universities



Research: ~42.8%, \$3.334B



Facility Operations: ~34.5%, \$2.689B

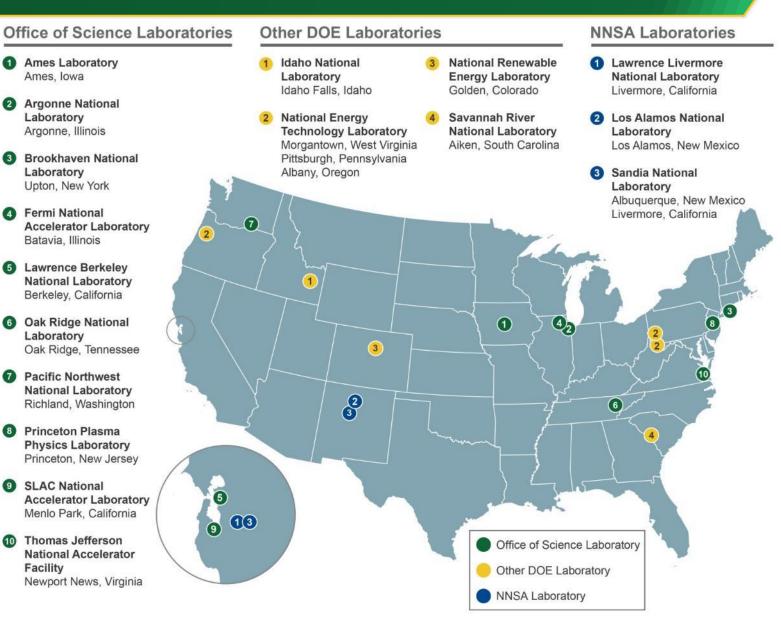


Projects/Other: ~22.6%, \$1.776B

DOE National Laboratories

The 17 DOE National Laboratories comprise a preeminent federal research system, providing the Nation with strategic scientific and technological capabilities

 SC stewards 10 DOE laboratories that provide essential support to the missions of the SC science programs



Office of Science Overview

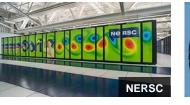
DOE Office of Science – Scientific User Facilities





NSLS-I



































CEN

















The Office of Science Research Portfolio

https://science.osti.gov/Programs/

Advanced Scientific Computing Research	 Delivering world leading computational and networking capabilities to extend the frontiers of science and technology
Basic Energy Sciences	 Understanding, predicting, and ultimately controlling matter and energy flow at the electronic, atomic, and molecular levels
Biological and Environmental Research	 Understanding complex biological, earth, and environmental systems
Fusion Energy Sciences	 Building the scientific foundations for a fusion energy source
High Energy Physics	 Understanding how the universe works at its most fundamental level
Nuclear Physics	 Discovering, exploring, and understanding all forms of nuclear matter
Isotope R&D and Production	 Supporting National Preparedness for isotope production and distribution during national crisis
Accelerator R&D and Production	 Supporting new technologies for use in SC's scientific facilities and in commercial products





Office of Science

Workforce Development for Teachers and Scientists (WDTS)

 DOE has a more than 60-year history of training and educating scientists, engineers, and technicians in the United States

- As a collaborative partner of the SC Workforce Development ecosystem, WDTS strives for a sustained pipeline for the science, technology, engineering, and mathematics (STEM) workforce to support DOE mission. WDTS programs expand the reach of SC Workforce Development efforts by:
 - Leading a national-level portfolio of laboratory-based workforce training programs in partnership with all 17 DOE national labs (~1,400 participants at DOE laboratories annually)
 - Science Undergraduate Laboratory Internship (SULI): open to 2-/4-year undergraduate students
 - Community College Internship (CCI): dedicated to undergraduates enrolled at community colleges or 2-year accredited institutions
 - Visiting Faculty Program (VFP): open to faculty under-represented institutions in STEM, including all HBCUs
 - Office of Science Graduate Student Research Program (SCGSR): open to graduate students with research interest in the SC mission priority areas



Science Undergraduate Laboratory Internship (SULI) Program

The SULI program encourages undergraduate students and recent graduates to pursue science, technology, engineering, and mathematics (STEM) careers by providing research experiences at the Department of Energy (DOE) laboratories.

- Applications are accepted for the Fall, Spring, and Summer terms
 - Fall (August-December): 16-weeks @ 40 hrs/week
 - Spring (January-May): 16-weeks @ 40 hrs/week
 - Summer (May-August): 10-weeks @ 40 hrs/week
- Paid internship
 - \$650/week or \$10,400 total for 16-week appointment
 - Housing and travel allowance provided



Credit: Lawrence Berkeley National Laboratory



Full details: https://science.osti.gov/wdts/suli

Eligibility Requirements

- **Citizenship**-Must be a United States Citizen or Lawful Permanent Resident at the time of applying.
- Age-Must be 18 years or older at the time the internship begins.
- Enrollment-Must be currently enrolled as a full-time student at an accredited two-year or four-year college and completed at least one semester at the time of applying.
- High School Diploma or GED- Must have earned a high school diploma or General Educational Development (GED) equivalent at the time of applying.
- Grade Point Average (GPA)-Must have an undergraduate cumulative minimum Grade Point Average (GPA) of 3.0 on a 4.0 scale for all completed courses taken as a matriculated student at the applicant's current (or recently-graduated) institution and at any undergraduate institutions attended as a matriculated postsecondary student during the 5 years preceding the start of the current enrollment. *College courses completed during high school are not required to be reported.*
- Coursework-Must have completed at least 6 credit hours in science, mathematics, engineering, or technology course areas, and completed at least 12 credits hours towards a degree
- Participation and Application Limit-Applicants are limited to participation in SULI program to no more than two internships. Applicants can apply to the CCI program a maximum of four times.

Before you apply, verify you meet the eligibility requirements.



Key Dates

SULI Internship Term:	Fall 2023	
On-line Application Opens	March 15, 2023	
Applications and Recommendations Due	May 25, 2023 5:00 PM ET	
Offer Notification Period Begins on or around	June 12, 2023	
All DOE Offers and Notifications Complete	On or around August 7, 2023	

*******The Application System closes at 5:00 PM Eastern Time. Materials will not be accepted after the system has closed.



Application Requirements

Completed applications must be submitted by 5:00 p.m. EDT on May 25, 2023.

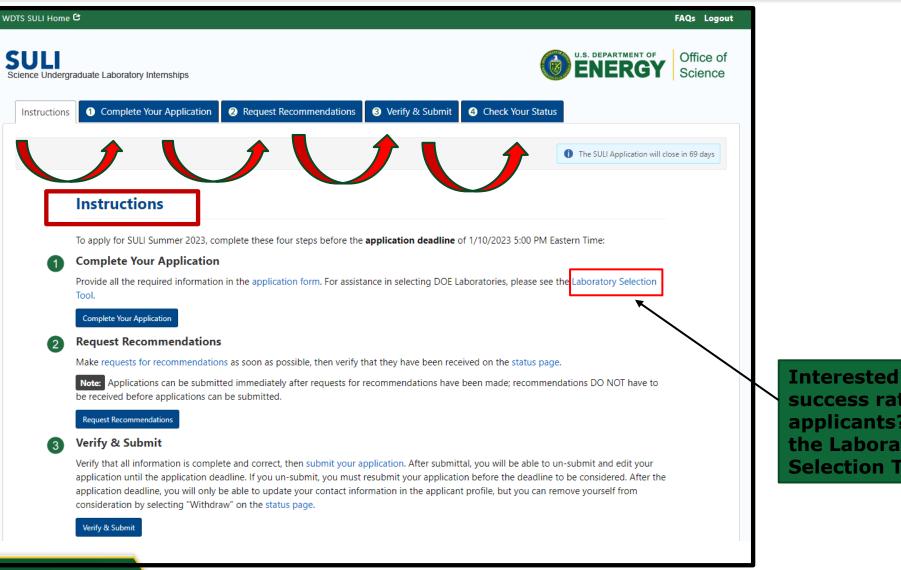
- All applications must be completed online through the <u>online application system</u>. You will need to register as a user to access the online application system.
- Only complete applications submitted by the deadline will be considered for evaluation and placement. As a reminder, letters of recommendations are a component of a completed application.
- The application system is not compatible with smartphones. Completion of applications and letters of recommendation requires use of a computer and web browser.





How to apply: <u>https://science.osti.gov/wdts/suli/How-to-Apply</u> 1

Navigating the Application



Interested in the success rate of applicants? Visit the Laboratory **Selection Tool.**



Application Portal: https://apps.orau.gov/cci/Account/Login

Components of the Complete Your Application Menu

- Applicant Profile
- Educational Background
- Work Experience and Skills
- Program Information
- Essays



Credit: Lawrence Berkeley National Laboratory



Applicant Profile



Applicant Profile

ULI ence Undergraduate Laboratory Internship	ps	U.S. DEPARTMENT OF Office of Science	
Instructions O Complete Your App	Dication 2 Request Recommendations 3 Verify & Submit	Check Your Status	
		The SULI Application will close in 69 days	
		The SOLI Application will close in og days	
APPLICANT PROFILE	Applicant Profile		
General Information			
Address	General Information	General Information	
Citizenship / Languages / Eligibility	First Name		
Demographics Optional	WDTS		
EDUCATIONAL BACKGROUND	Middle Name		
Academic Information			
Undergraduate Institutions			
STEM Courses	Optional		
Awards	Last Name		
High School Graduation or GED	TEST		
WORK EXPERIENCE & SKILLS	Previous Last Name(s)		
Work Experience			
Professional Associations	Optional (separate multiple names with commas)		
Computer Skills	Primary Email Address		
Laboratory/Technical Skills	volandacu/27@gmail.com		

- Will you be 18 years or older by the start of the internship?
 Are you a U.S. citizen or U.S. permanent
 Response "No"
 Not Eligible
 Not Eligible
- Are you a U.S. citizen or U.S. permanent resident?
- What is your primary language?



Educational Background



Educational Background

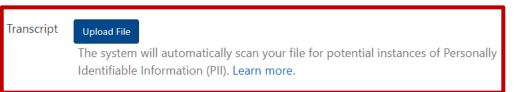
A	PPLICANT PROFILE	Educational Background
0	General Information	
	Address	Academic Information
	Citizenship / Languages / Eligibility	Eligibility for the SULI program requires that all applicants:
	Demographics	Must be currently enrolled full-time or have recently graduated with an undergraduate degree, as described for the two
E	DUCATIONAL BACKGROUND	cases below. Currently-enrolled students:
	Academic Information	The applicant must be currently enrolled as a full-time undergraduate student at an accredited institution (including
	Undergraduate Institutions	 accredited community colleges). Applicants, including freshmen, must have earned at least 6 credits in postsecondary STEM courses and must have
	STEM Courses	earned at least 12 credits in <u>all completed postsecondary courses.</u>
	Awards	 Applicants must have completed at least one full term of academic study with grades reported from the home institution at the time of application.
	High School Graduation or GED	 Advanced Placement credits or other undergraduate credits obtained prior to undergraduate enrollment cannot be
w	ORK EXPERIENCE & SKILLS	applied to meet the minimum one-term completion requirement.
	Work Experience	 Full-time enrollment status is determined by the number of hours or courses the school requires for full-time attendance (as defined by the Internal Revenue Service).
	Professional Associations	Recent graduates
	Computer Skills	 Applicants who will have completed their undergraduate degree prior to starting their internship may apply as a "Recent Graduate." This includes students who have graduated with an associate's degree or bachelor's degree,
	Laboratory/Technical Skills	those who have completed a combined BS/MS program, and those who have completed an undergraduate degree
PF	ROGRAM INFORMATION	and are now enrolled in a graduate studies program. <u>The time period between receipt of an undergraduate degree</u> and starting the SULI term must be two years or less.
	Eligibility	Must have a cumulative minimum Grade Point Average (GPA) of 3.0 on a 4.0 scale for all completed courses taken as a
		matriculated student at the applicant's current (or recently-graduated) institution and at any institutions attended as a matriculated postsecondary student during the 5 years preceding the start of the most recent enrollment. (This does not
	Internship/Fellowship Experience	include college or university courses taken while solely a high school student.)
	Availability	 Must be 18 years or older at the time the internship begins. Must be a United States Citizen or Lawful Permanent Resident at the time of applying. Proof of U.S. Citizenship or Lawful
	DOE Laboratories and Research Areas	Permanent Resident (LPR) status will be requested at the time an internship offer is acceptable form of proof of U.S. Citizenship includes, but is not limited to, a Certified Birth Certificate, an U.S. State Government Issued Enhanced
	Relatives Employed at DOE Laboratories	Driver's License, U.S. Passport, U.S. Passport Card, Naturalization Certificate, Certificate of Citizenship, Consular Report of Birth (of U.S. citizen) Abroad, or Certification of Birth. Lawful Permanent Residents must have a current United States
•	Laboratory Outreach & Engagement Programs	Permanent Resident Card (USCIS Form I-551). Must have earned a high school diploma or General Education Development (GED) equivalent at the time of applying. Proof
ES	SAYS	of an earned high school diploma or of passing all five GED tests required to achieve a Certificate of General Educational Development should be provided on the applicant's undergraduate transcripts.
	Research Experience	• The requirement for a high school diploma or GED is waived for students who are or were enrolled full-time in pursuit of
1	Research Interests	an undergraduate degree through a dual-enrollment program offered by their high school and a college/university partner in the U.S. or its territories.
	Personal Experience	Additional Eligibility requirements:
	Professional Goals	Applicants may participate in SULI no more than twice.
		 Applicants can apply to the SULI program a maximum of four times.
		Are you currently attending a community college or 2-year college?
		○ Yes → No

Select "no" = not eligible



Educational Background: Academic Institutions

- Academic Institutions: List your current institution first, and then enter any other institutions you have attended. This includes all institutions which you are received transfer credit not completed as a high school student.
 - **Transcripts**: Upload a transcript in Pdf format in the application system for each postsecondary institution enrolled within the last 5 years of most recent enrollment.



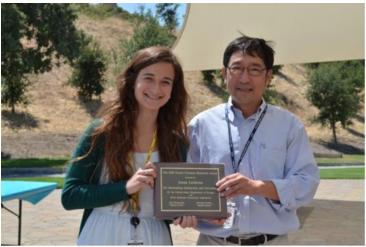
- Ensure the transcript includes the applicant's name, institution name, and course names and grades.
- Redact personal identifiable information (PII) such as date of birth and social security number.
- Unofficial transcripts are acceptable for submission to the application system.
- Watch this video to assist with transcript uploads.



Education Background: Awards

Include all awards you received during your academic career.
 Some awards may include:

- Dean's List
- Membership in Honor's Society
- Merit Scholarships
- Honors Program
- Winner of contests, challenges, and tournaments



Lab Director Chi-Chang Kao presents the Ernest Coleman Award to SULI intern Anna Leskova. SLAC

Accessed 1/9/2019 at https://www6.slac.stanford.edu/news/2016-08-26-undergraduate-interns-learn-summer-research.aspx



Work Experience



Work Experience and Skills: Work Experience

AP	PLICANT PROFILE	CANT PROFILE Work Experience & Skills				
0	General Information					
	Address	Work Experience Please provide information about your relevant work experience.				
•	Citizenship / Languages / Eligibility					
	Demographics					
ED	EDUCATIONAL BACKGROUND					
	Academic Information	Enter Work Experience Not Applicable/No relevant experience				
	Undergraduate Institutions					
	STEM Courses	Include paid and volunteer work experience				
	Awards	 STEM internships or research experiences Tutoring appointments 				
0	High School Graduation or GED					
WORK EXPERIENCE & SKILLS		 Teaching Assistance appointments 				
•	Work Experience	 Mentoring Leadership Roles in professional organizations 				
	Professional Associations					
•	Computer Skills					



Work Experience and Skills: Computer Skills

 List all computer skills including programming languages, standard software applications, statistical analysis software, and certifications.



Credit: NREL- Photo by Amy Glickson

Accessed 1/9/2019 from https://www.nrel.gov/news/features/2017/nrelsummer-interns-climb-to-new-heights.html



Work Experience and Skills: Laboratory and Technical Skills

Describe your research and technical skills in detail

The skills may be obtained through employment or coursework.



Credit: Oak Ridge National Laboratory



Program Information

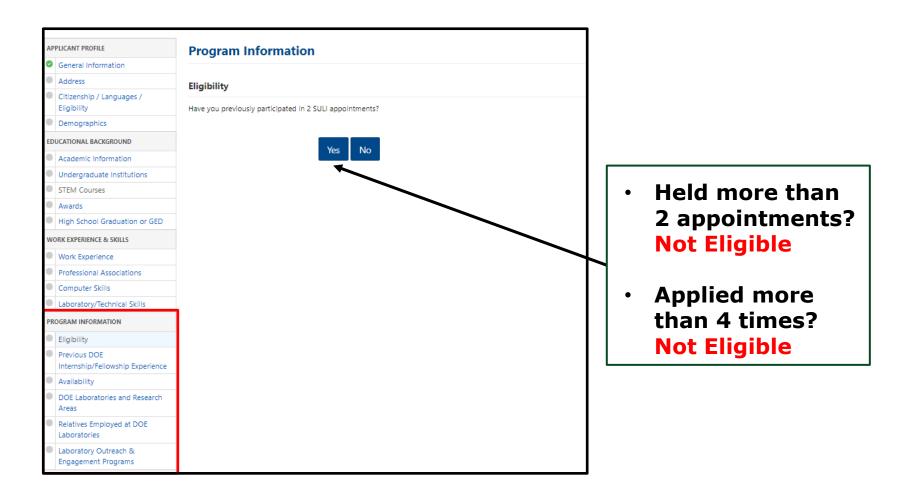


From left: **PPPL** physicist Ahmed Diallo, SULI student Jalal Butt, and PPPL physicist Egemen Kolemen. Photo by Raphael Rosen.

From <u>https://www.pppl.gov/news/press-releases/2018/08/undergraduate-students-extoll-benefits-national-laboratory-research</u> Accessed 1/9/2019



Program Information: Eligibility





Program Information: DOE Laboratories and Research Areas Selection

- Applicants must select a firstchoice and second-choice laboratory to be considered for placement.
- Additionally, applicants may choose a third option to be considered by all labs within their interests.
- Applicants are encouraged to review <u>laboratory websites</u> and contact DOE researchers to learn about their research.

Office of

Science

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Program Information					
Get Help With*					
Host DOE Laboratories and Research Areas Selection When selecting your first and second choice host DOE Laboratories, and your first, second, and third choice research areas,					
lease carefully review the R&D program area descriptions. Not all research opportunities are available at all DOE Laboratories, or further assistance in selecting DOE Laboratories, please see the Laboratory Selection Tool.					
irst Choice Host DOE Laboratory					
Oak Ridge National Laboratory (ORNL)					
rst Choice Research Area					
Analytical Chemistry 🗸					
econd Choice Research Area					
Cyber Security 🗸					
hird Choice Research Area					
Quantum Engineering 🗸					
econd Choice Host DOE Laboratory					
National Renewable Energy Laboratory (NREL)					
rst Choice Research Area					
Cyber Security					
econd Choice Research Area					
Climate Sciences 🗸					
hird Choice Research Area					
Engineering Materials 🗸					

Fall 2023 Term: Participating Host DOE Laboratories

- Ames Laboratory
- Argonne National Laboratory
- Brookhaven National Laboratory
- Fermi National Accelerator Laboratory
- General Atomics/DIII-D Facility
- Idaho National Laboratory
- Lawrence Berkeley National Laboratory
- Lawrence Livermore National Laboratory
- Los Alamos National Laboratory
- National Renewable Energy Laboratory
- Oak Ridge National Laboratory
- Pacific Northwest National Laboratory
- Princeton Plasma Physics Laboratory
- Savannah River National Laboratory
- Thomas Jefferson National Accelerator Facility

You're encouraged to attend the next workshop to interact with laboratory staff. The workshop is scheduled at 3:00 p.m. EDT on April 24, 2023 and registration is available on the program website.



Selecting a Host DOE Lab: <u>https://science.osti.gov/wdts/suli/How-to-Apply/Selecting-a-Host-DOE-Laboratory</u>

Essays





Essays: Technical and Research Experience

Essays

Research Experience

Describe your previous research experience or equivalent experience on complex projects, including the level of independence, while working as a member of a research/project team.

Describe all your prior research including

- Paid and unpaid research opportunities
- Special projects
- Skills obtained during coursework count!
- Note: Previous research experience is not required to apply for SULI!



Essays: Research Interests

Essays

Research Interests

Describe the type(s) of research subjects or activities that interest you at your first and second choice host laboratories, and discuss any particular factors influencing your choice of host laboratories.

- Elaborate on why you wish to participate in the SULI Program.
- Which labs are you interested in conducting research? How does your interests align with the mission of the selected labs?
- What do you hope to gain from the experience?



Essays: Personal Experience

Essays

Personal Experience

Describe your professional, academic, or life experience and skills you have that enhance your ability to be an excellent contributing member to the SULI Program.

- Share your skills or experience, outside of research, that are applicable to SULI.
- Think of your employment, academic, extracurricular, and life experiences, and how they've led to you applying to SULI.
- Include unique qualities which may influence your participation in SULI such as being a firstgeneration college student, non-traditional student, leadership skills, etc.
- Address any extenuating circumstances which may have had an impact on your academic performance.



Essays: Professional Interests

Essays Professional Goals Describe your long-term academic and professional goals, and how participation in the SULI program could develop or expand skills required to achieve those goals. B *I* <u>U</u> ×_x ×^z | *I*_x] ≔ ≔ ⊕ ⊕ ⊨ ≞ ≡ ≡ X ⊡ | ◆ → Q ha 🗮 📟 🛒 fx Ω 🗮 💿 Source Format - Font - Size -How will the program advance your • career and professional goals? What are your career interests? ٠ Do you plan to pursue a bachelor's or ٠ advance degree after graduation? It's acceptable to mention that this program will help determine if a career in research is right for you!



Letters of Recommendation





Letters of Recommendations

- A completed SULI application requires recommendations from two individuals familiar with the applicant's education, training, experience, aptitude, or promise relevant to the SULI Program. Note: Family and friends of family are not allowed to serve as authors of recommendations.
- An applicant will be asked to provide contact information for individuals indicated in the online application system. Applicants are encouraged to make the requests for recommendations as soon as possible.
- Letter of reference must be submitted through the application portal by the application deadline (i.e. 5:00 p.m. Eastern Time on May 25, 2023 for the Fall 2023 term).



Resources To Assist With Application Components

- Application <u>checklist</u>
- •Submitting <u>transcripts</u>
- Tips for preparing <u>essays</u>
- Requesting <u>letters of reference</u>

FAQ's-<u>https://science.osti.gov/wdts/suli/Frequently-Asked-Questions</u>



Selection and Notification

- Eligibility and Compliance Check-All applications must pass eligibility and compliance check.
- Merit Review- Assessment by first and second choice labs selected by the applicant.
 - Applications will be assessed based upon <u>performance in completed academic coursework</u>, <u>strength of recommendations letters</u>; <u>expressed scientific or technical interests</u>; and the <u>applicant's background</u>, <u>experience</u>, <u>accomplishments</u>, and <u>interests as they relate to the host</u> <u>laboratories</u>.
- Notifications-Offers are made by a Laboratory Education Directors (not research mentors) via email. Applicant has 10 calendar days to respond to offer. Only one offer will be extended to an applicant.

All appointments are contingent upon proof of citizenship or citizenship status and the outcome of a formal background check.



Participant Obligations

- Commit to 10-weeks (40 hrs/week) in the program.
- Maintain health insurance during the appointment.
- Complete deliverables
 - Pre-survey
 - Post-survey
 - Abstract
 - Research project report (6-8 pages)
 - Oral or poster presentation
 - One-page peer review



Maintain professional behavior.



More details: <u>https://science.osti.gov/wdts/suli/Participant-</u> Obligations

Benefits to Participating in SULI

- Contribute to exciting, real world, innovative, ongoing projects in the DOE national laboratories.
- Build professional networks with scientist and engineers.
- Opportunity to establish a mentor.
- Enrichment opportunities through professional development and technical seminars.
- Enhance science communication skills.
- Decide if a career in research is right for you.
- Land a permanent position.



Don't forget!!

- Application deadlines and requirements are firm, including receipt of recommendations (no exceptions!)
- The application deadline is May 25, 2023 at 5:00 p.m. EDT.
- Plan early. Submit your application ahead of the deadline.
- Contact your reference letter writers as soon as possible. It is the applicant's responsibility to ensure recommendations are submitted by the deadline.
- Do your research! Visit the DOE National Laboratories and host sites webpages to make a more informed decision about your lab preferences.
- Technical support for the online system is available during regular business hours.
- Only complete, compliant, and eligible applications are reviewed by self-selected first and second-choice labs.
- One offer per term only, independent of acceptance or declination.
- Send us a message if you have questions. Contact <u>sc.suli@science.doe.gov</u>.



Meet the DOE National Laboratories at the Next Application Assistance Workshop!!



Next Workshop Scheduled

April 24, 2023 at 3:00 pm (EDT)

Office Hours with DOE Lab Staff

•Register <u>here</u>. More info available on CCI website.

My Internship Experience at the Federal Laboratories



Dr. Toliver receiving her certificate of completion during her appointment as an intern at NASA's Johnson Space Center.

Connect with us.....

After this session, e-mail:

- sc.suli@science.doe.gov if you have questions.
- Connect with us on LinkedIn
 - ▶ Office of Science
 - Office of Workforce Development for Teachers and Scientists (WDTS)
- Follow the Department of Energy on <u>Twitter</u>
- Subscribe to the <u>YouTube</u> Channel

•Visit the SULI website.

