Welcome! Please answer the following question in the chat box:

How many DOE National laboratories do you know?

Office of Science Graduate Student Research Program (SCGSR)

Application Assistance Workshop 1 for 2025 Solicitation 2

September 11, 2025

"My overall experience has been incredible and irreplaceable, not only for how it's enriched my PhD research and trained me to be a better researcher, but also for how it has shown me the life of doing research at a national lab."

SCGSR 2023 S2 Awardee

U.S. DEPARTMENT of ENERGY | Office of Science

Energy.gov/science

SCGSR Program

Foster advanced workforce development in areas critically important to SC mission

Supplemental funding to **PhD candidates** for conducting part of their **thesis research at DOE National Laboratories**

3 – 12 months in collaboration with a DOE National Laboratory scientist

- U.S. citizens or Lawful Permanent Residents
- Alignment with priority research areas (7 SC program offices)
- New research experiences (no prior experience at the host lab), BES: proximity restrictions

Scientist in Residence
Build network and **establish yourself in the field**

Stipend: Up to $3,600/month
Travel Reimbursement: Up to $2,000

SCGSR Program – A Multi-Institutional Effort

SPONSOR AND PROGRAM MANAGEMENT

U.S. DEPARTMENT of ENERGY | Office of Science

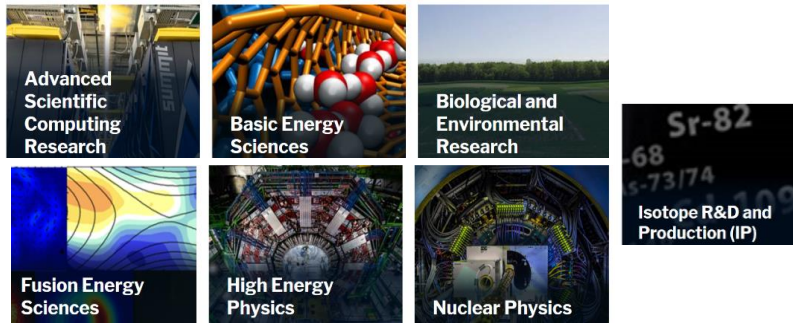
Office of Workforce Development for Teachers and Scientists (WDTS)

ADMINISTRATION

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

SCIENTIFIC GUIDELINES

U.S. DEPARTMENT of ENERGY | Office of Science



EXECUTION

AMES LABORATORY
Fermilab
NREL NATIONAL RENEWABLE ENERGY LABORATORY
SLAC NATIONAL ACCELERATOR LABORATORY
INL Idaho National Laboratory
Argonne NATIONAL LABORATORY
Sandia National Laboratories
Jefferson Lab
NETL NATIONAL ENERGY TECHNOLOGY LABORATORY
PPPL
Savannah River National Laboratory
Brookhaven National Laboratory
BERKELEY LAB Lawrence Berkeley National Laboratory
DIII-D NATIONAL FUSION FACILITY
Lawrence Livermore National Laboratory
Los Alamos NATIONAL LABORATORY EST. 1943
OAK RIDGE National Laboratory
Pacific Northwest NATIONAL LABORATORY

SCGSR Program Management

U.S. Department of Energy (DOE), Office of Science (SC)

- **Dr. Igor I. Slowing**
  SCGSR Program Manager
  Office of Workforce Development
  for Teachers and Scientists (WDTS)

U.S. DEPARTMENT of ENERGY | Office of Science

Office of Workforce Development for Teachers and Scientists (WDTS)

sc.scgsr@science.doe.gov

Oak Ridge Institute for Science and Education (ORISE)

- **Dr. Megan M. Morris**
  Associate Manager
  STEM Workforce Development
- **Abby Robbins**
  Program Specialist
  Workforce Development

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

doe-scgsr@orau.org

U.S. DOE Office of Science Mission

Deliver scientific discoveries and major scientific tools to:

- transform our understanding of nature
- advance the energy, economic and national security of the United States

https://science.osti.gov/

- **118** Nobel Laureates affiliated to DOE
- **65** affiliated to DOE National Laboratories

https://science.osti.gov/About/Honors-and-Awards/DOE-Nobel-Laureates

Types of Research that the SCGSR Program Supports

- **Hypothesis driven research**: Fundamental research (NO applied research).

  https://science.osti.gov/wdts/scgsr/How-to-Apply/Priority-SC-Research-Areas

- **Method or instrument development**: when aimed to enable fundamental research, or if it is part of a large fundamental science experiment.

7 SC Research Programs → Priority Areas

Advanced Scientific Computing Research (ASCR)	World leading computational and networking capabilities
Biological and Environmental Research (BER)	Understand complex biological, earth, and environmental systems
Basic Energy Sciences (BES)	Understand, predict, and control matter and energy at the electronic, atomic, and molecular levels
Isotope R&D and Production (DOE IP)	National preparedness for isotope production and distribution
Fusion Energy Sciences (FES)	Build the scientific foundations for a fusion energy source
High Energy Physics (HEP)	Understand how the universe works at its most fundamental level
Nuclear Physics (NP)	Discover, explore, and understand all forms of nuclear matter

SC Research Program Managers

Dr. David Rabson – ASCR

Dr. Justin Hnilo – BER

Dr. Robin Hayes, Dr. Timothy Kidd – BES

Dr. Ethan Balkin – DOE IP

Dr. Nirmol Podder – FES

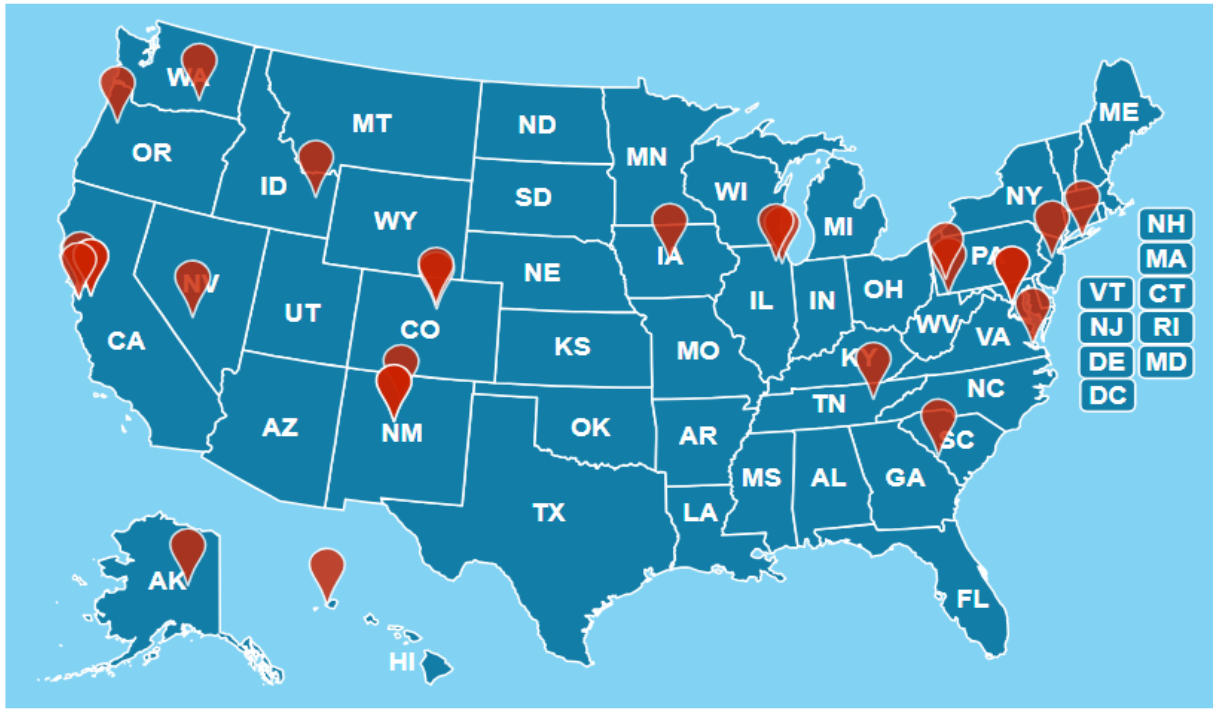
Dr. Manuel Bautista – HEP

Dr. Paul Sorensen – NP

Meet them later in the Breakout Rooms!!!

DOE National Laboratories:
A Unique Asset for Training and Scientific Discovery

Created as a home for large-scale, costly scientific facilities that universities cannot afford.



DOE National labs employ >30,000 scientists and engineers

World leading scientific user facilities, expertise, and resources

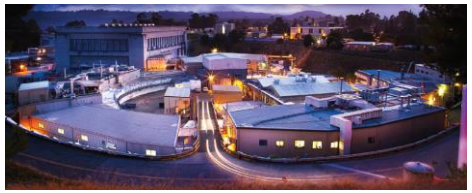
Large multidisciplinary research programs not available in universities or industry

SCGSR is ON SITE at the host DOE National Laboratory

28 Scientific User Facilities

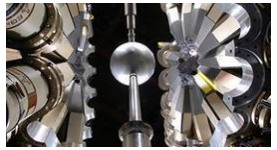
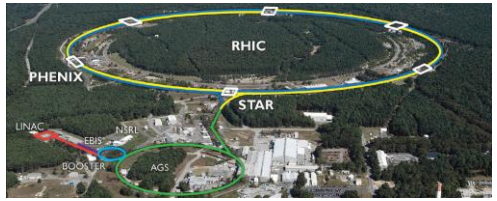
- High Performance Computing: ALCF, OLCF, NERSC, Esnet
- X-Ray Light Sources: ALS, APS, NSLS-II, LCLS, SSRL
- Neutron Scattering: HFIR, SNS
- Nanoscale Science Centers: CFN, CINT, CNM, CNMS, TMF
- Earth System Modeling: ARM
- Biomolecular Characterization: EMSL, JGI
- Plasma Confinement: DIII-D, NSTX-U
- Particle Accelerators: FAC, FACET-II, ATF, ATLAS, CEBAF, FRIB, RHIC







Over 38,000 users per year

If you want to use them: SEPARATE PROPOSAL!!!

The SCGSR Program Supports

PhD candidates who…

1) …propose research relevant to SC Priority Areas
https://science.osti.gov/wdts/scgsr/How-to-Apply/Priority-SC-Research-Areas

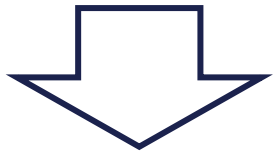
2) …need tools and/or expertise that are not available at their Universities

Unique expertise/capabilities of scientists/facilities at DOE National Labs/Facilities

⇨ **take your PhD research to the next level**

Step 1: What are You Missing for doing Your Research at Your University?

- Advanced instrumentation?
- Specialized tools or codes?
- Unique libraries, datasets, sample collections or materials?
- Special facilities?
- Advanced techniques?
- Theoretical frameworks?
- Expertise/Training?
- Participation in ongoing large-scale projects: DUNE, ATLAS, E3SM, QIS…



Find a DOE National Lab Scientist

7 Ways of Finding the Right DOE National Lab Scientist

1. **Scientific literature** – check author affiliations of the papers you read for your research

2. **Your advisor and their network**

3. **Searchers:** ISI Web of Science, SciFinder, Google Scholar… – search by topic -> refine by institution

4. **National Laboratories websites** https://www.energy.gov/national-laboratories

5. **SCGSR website: list of potential collaborating scientists**
   https://science.osti.gov/wdts/scgsr/How-to-Apply/Identifying-a-Collaborating-DOE-Laboratory-Scientist

6. **SCGSR website: list of publications**
   https://science.osti.gov/wdts/scgsr/SCGSR-Awards-and-Publications

7. **Email us** (SC.SCGSR@science.doe.gov) or the Managers of each Program Office (emails in the last slide)

Contacting National Lab Scientists

Very interested in collaborating! However, they get **A LOT** of spam, so:

1. Use your **school's email address**
2. Subject line: "Interest in collaborating on a DOE SCGSR project on xxx" (**your topic in 3-4 words**!)
3. Cc your **advisor**
4. Brief description of the SCGSR program. (Essential information: **No cost to them!**)
5. **Brief summary** of the work you want to do.

Set Things Clear Upfront with Your Collaborator

1. Is there an **overlap of interests**?
2. Do they have **time** for working with you?
3. What type of **instrumentation is available**?
4. How **accessible** is equipment? Is there a schedule?
5. Do you need to build/make some specialized **adaptations** for the equipment? *e.g.*, specialized cells, set two instruments in tandem/parallel, etc.
6. Do you need to **apply for using specific facilities**?

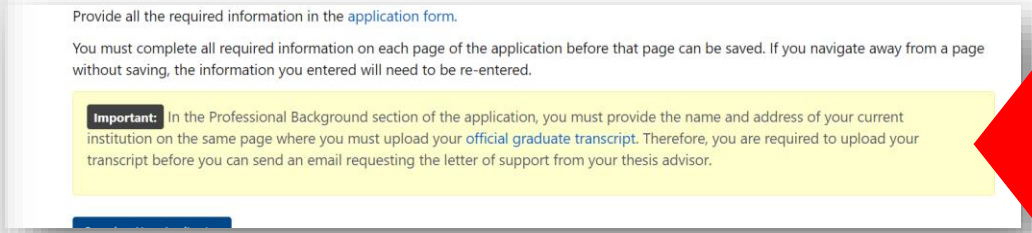
SCGSR Application

Only COMPLETE applications submitted by the deadline will be considered!

Due **November 5, 2025, 5:00 PM ET**

- All **required fields** of the Application System https://apps.orau.gov/SCGSR
- **Official graduate transcripts** and **explicit proof of Ph.D. Candidacy**

  Remove SSN or dates of birth from transcripts, otherwise they will be *immediately eliminated from the system and deemed non-compliant*
- **Research Proposal** (*3-pages maximum*)
- **Letters of Support**:
  - thesis advisor
  - collaborating DOE National laboratory scientist



!!!

1. **Complete a page before moving on** – you can edit later
2. **Gray non-fillable boxes** – need to **fill prior sections**
3. **Placeholders** – type in TEXT or upload blank PDFs if you don't have everything at hand, **remember to come back and replace them** when ready
4. E-mails for advisor and collaborating scientist are **sent from the system**, => you must upload their contact information – Remind them **not to wait till the last minute**

SCGSR Proposal

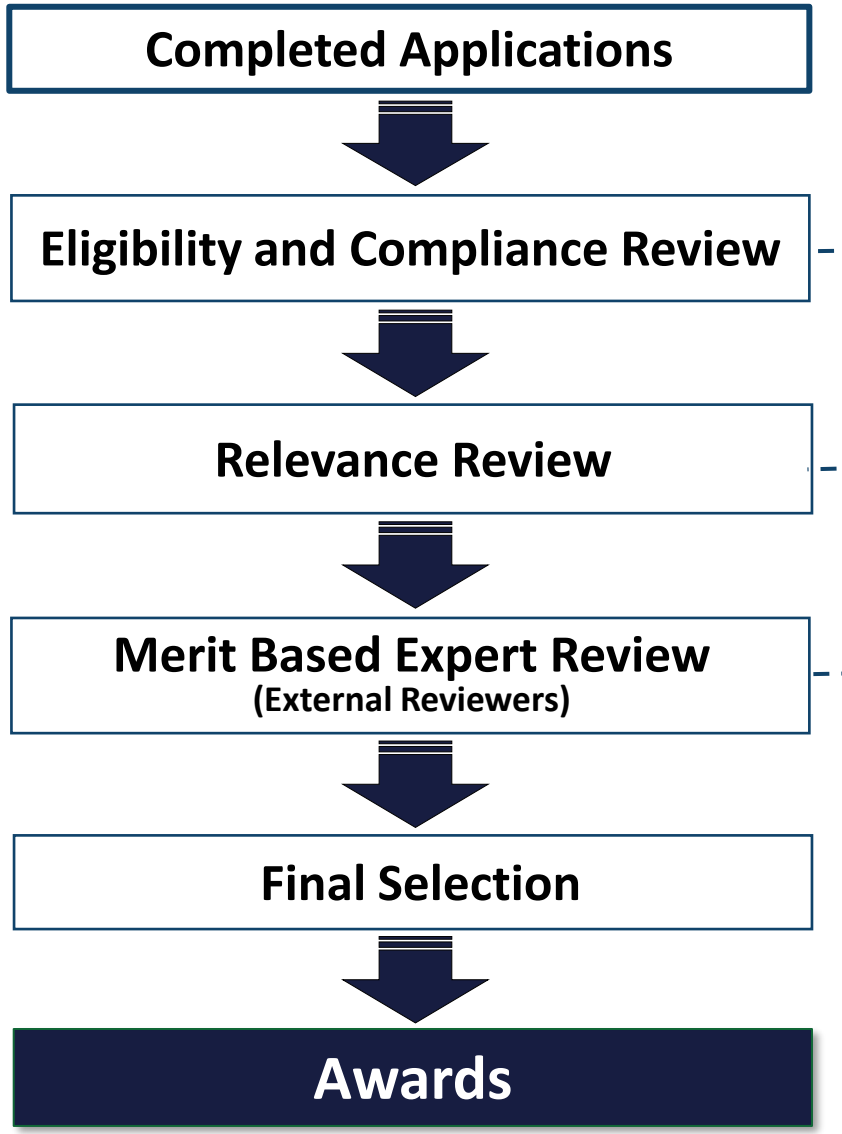
- Developed by **yourself** in collaboration with the DOE national laboratory scientist and in consultation with your thesis advisor
- The **part of your PhD thesis work** that you will carry on at the DOE national laboratory/facility
- Aims should address at least one of the **SCGSR Priority Research Areas**
- Describe how you will take advantage of the **DOE national laboratory/facility's research capabilities and assets**

Citing a reviewer:

"The strongest SCGSR proposals outline both sides of the student-Lab relationship in a balanced manner."

https://science.osti.gov/wdts/scgsr/how-to-apply/research-proposal-guidelines/

Selection Process



Does the application **meet all the guidelines**?

Alignment with at least one of the **SCGSR Priority Research Areas**?

Expert reviewers from the scientific community.
Scientific merit and **value for PhD training**

Merit Review Criteria

1. Scientific and/or Technical Merit of the Proposed Research (Score 1 – 6)

a. Is the proposed research **well-conceived**, and does it demonstrate a **clear understanding** of the scientific and technical challenges involved?

b. Is the proposed **method and approach** for the proposed research appropriate?

c. Is the applicant **sufficiently prepared** to conduct the proposed research?

d. Are the DOE laboratory **resources** adequate? If applicable, has the necessary access to a scientific user facility been secured?

2. Relevance of the Proposed Research to Graduate Thesis Research and Training (Score 1 – 4)

a. Does the proposed research have the potential to make a **significant contribution to the applicant's PhD thesis** research project?

b. Will the proposed research enhance the applicant's **training and research skills**?

Key Dates

At the submission deadline, the application system will close, and no additional materials will be accepted. The online application system closes at 5:00 PM Eastern Time

Applications Due (including all letters of support)	**November 5, 2025, 5:00 PM ET**
Offer Notification Period	Early April 2026
Earliest Start Date for Proposed Project Periods	June 8, 2026*
Latest Start Date for Proposed Project Periods	October 5, 2026*

*Project are 3 to 12 consecutive months long, depending on the applicant's proposed work.

*Awardees can choose the start dates within the window above.

Exercise for Kickstarting your Application

1. What is your thesis topic about? Summarize your central idea

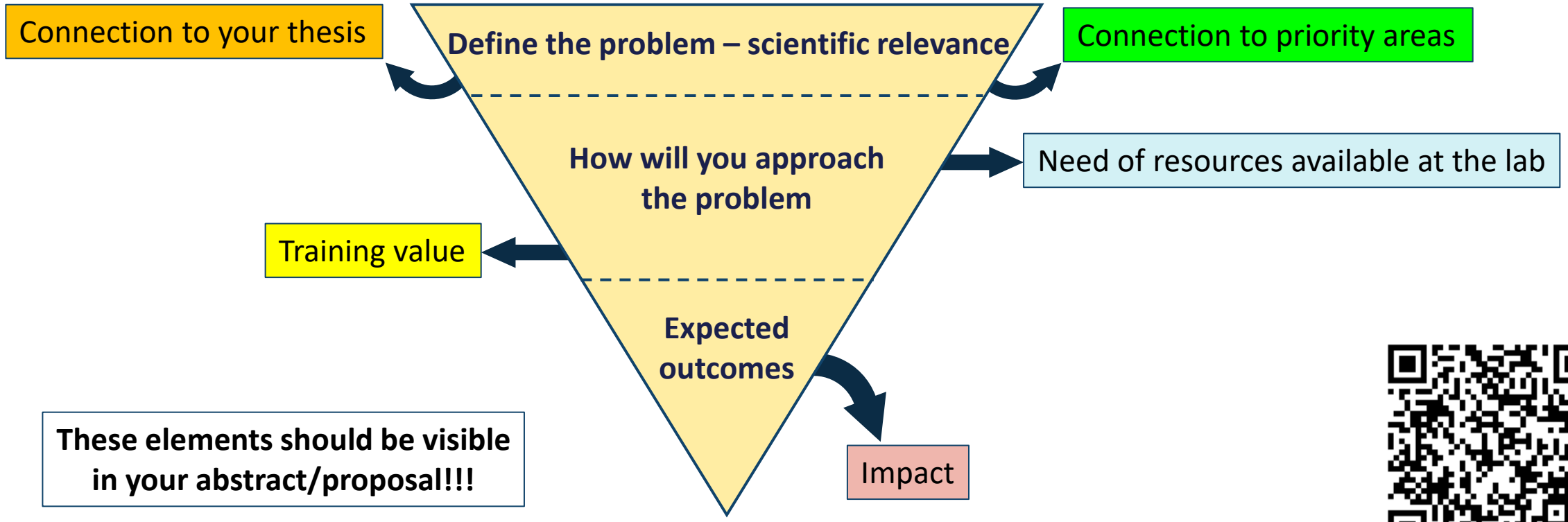
2. Wish list: What resources do you need that are not available at your university? Equipment/Instrumentation, Techniques, Theoretical methods

3. Homework: Are these resources available at a national lab? In which one(s)?

Remember: **FUNDAMENTAL RESEARCH**!

Your Sales-Pitch to the Program → The Seed of Your Proposal

Make an abstract or summary of what you want to do



Proposal structure and guidelines: https://science.osti.gov/wdts/scgsr/how-to-apply/research-proposal-guidelines/

Abstract Sample 1

Thesis Connect | Define Problem | Priority Areas ?
Training ? | Approach | Need of Lab res.
Outcomes | Impact

MDSD Simulation of Impurities in α-Iron

Problem?

Through the combination of molecular dynamics and spin dynamics techniques, time-dependent properties of metallic alloys and transition metals may be studied using computer simulation. A model for α-Iron has been developed using an embedded atom interaction potential and a coordinate-dependent exchange interaction. This project will investigate the effect on the system of real-world conditions such as external magnetic fields and impurities in the lattice through measurement of the dynamic structure factor and the diffusion coefficient. These results may be compared to experimental and ab initio data. The MDSD technique is general and through collaboration with Dr. **Content Blocked/Edited Out**, it may be used to investigate and test new forms of the system Hamiltonian. His expertise in high performance computing will yield insight into the viability of this code for large-scale parallelization. This collaboration will lay groundwork for future investigation of improved model interactions and for improved simulational techniques later in my thesis work.

Approach?

Need of lab res.

Outcomes?
Impact?

Connection to thesis

What about clarity?

SCGSR Program by the Numbers

"The SCGSR program has been the most valuable part of my graduate education."

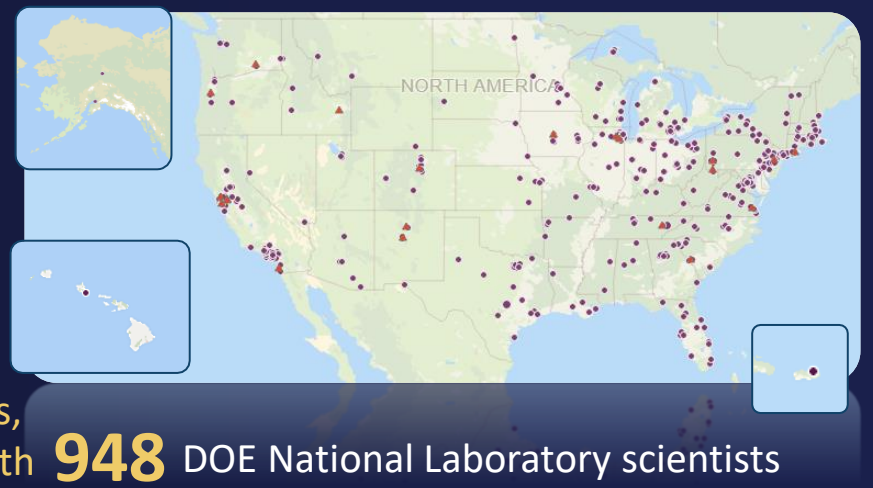
SCGSR 2022 S2 Awardee

Since **2014**

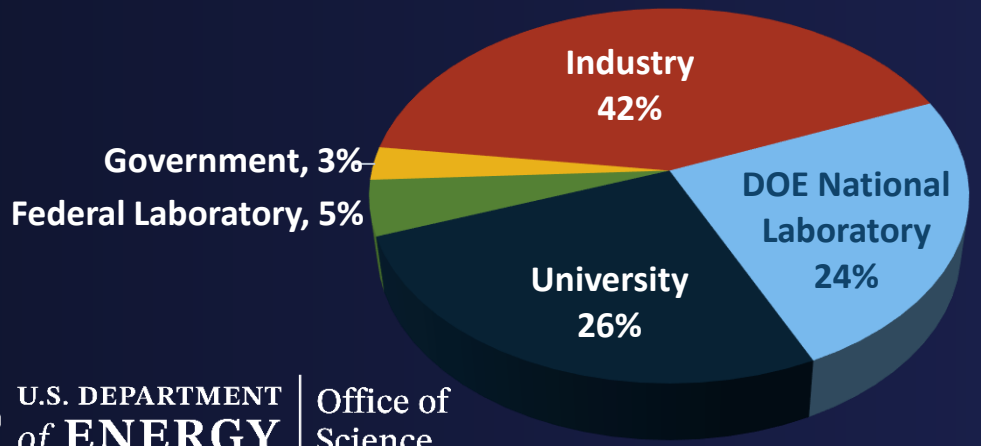
1363 awardees from

540 hometowns in

48 States + DC + Puerto Rico, pursuing PhDs at **172** Universities, working with **948** DOE National Laboratory scientists



SCGSR Alumni Work in…



>900 Research articles

>30,000 Citations

>800 Research presentations

>100 International Presentations

10 Patents

What Awardees Say About SCGSR

99% Received training not available at their universities

99% **Expanded their networks**

99% SCGSR introduced them to careers outside academia

100% **Their SCGSR award led to completion of a key part of their PhD dissertation**

U.S. DEPARTMENT of ENERGY | Office of Science

Energy.gov/science

SC Research Program Managers

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Dr. Manuel Bautista – HEP (Manuel.Bautista@science.doe.gov)

Dr. Paul Sorensen – NP (Paul.Sorensen@science.doe.gov)

Thank You!

Q&A

- Breakout Rooms: **Program Managers of the SC Research Offices**
- After the breakout session: **Feedback Poll**
- Next Workshop: **October 9, 2025, 2:00 – 4:30 pm ET**

  Q&A, Proposal Tips, Meet Scientists and Former Awardees

- Office Hours: Every Friday 1-2 pm ET starting Sept. 26 at https://www.zoomgov.com/j/1601455897?pwd=N1gxe0R2ZBlL6lmPSczrGr5EHq0ltR.1