Welcome! Please answer the following question in the chat box:
How many DOE National laboratories do you know?
Why are you interested in the SCGSR program?

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

Christine Burgan 2022 S2
SCGSR Program Management Team

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)

Oak Ridge Institute for Science and Education (ORISE)

- Dr. Maria Taydem
  Project Manager
  Workforce Development
- Abby Robbins
  Program Specialist
  Workforce Development
The SCGSR Program Involves Multiple Institutions

The SCGSR program is sponsored and managed by

In collaboration with the SC Program Offices of

and the US DOE National Laboratories/Sites

Online application and awards administration provided by
Two Workshops

Workshop I: This one
General Description of the Program
• Overview of the Office of Science
• SCGSR Program:
  o Benefits
  o Application Process
  o Requirements
  o General tips/advises on application
• General Questions
• Breakout sessions: Meet SC Managers for Discussing your Research (3:00-3:30 PM ET)

Workshop II: April 18, 2024, 2:00-4:30 PM ET
• Office Hours
• Specific steps of application, common issues
• Tips on proposal writing
• Meet current and former SCGSR awardees
• Meet US DOE National Laboratory scientists

“This combination of hands-on experience and networking has been an immense boost to my professional development, and I would encourage any other grad student in a similar place in their early science career to pursue SCGSR opportunities whenever possible.”

Cooper Wagner SCGSR 2022 S1
Office of Science (SC): A Mission of Research

SC 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/

The largest Federal sponsor of basic research in the physical sciences. The lead Federal agency supporting fundamental scientific research for energy.

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

https://science.osti.gov/About/Honors-and-Awards/DOE-Nobel-Laureates
## SC Research and R&D and Production Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accelerator R&amp;D and Production (ARDAP)</strong></td>
<td>New accelerator technologies for SC’s scientific facilities and commercial products</td>
</tr>
<tr>
<td><strong>Advanced Scientific Computing Research (ASCR)</strong></td>
<td>World leading computational and networking capabilities to extend the frontiers of science and technology</td>
</tr>
<tr>
<td><strong>Biological and Environmental Research (BER)</strong></td>
<td>Understand complex biological, earth, and environmental systems</td>
</tr>
<tr>
<td><strong>Basic Energy Sciences (BES)</strong></td>
<td>Understand, predict, and control matter and energy flows at the electronic, atomic, and molecular levels</td>
</tr>
<tr>
<td><strong>Isotope R&amp;D and Production (DOE IP)</strong></td>
<td>Support national preparedness for isotope production and distribution during crisis</td>
</tr>
<tr>
<td><strong>Fusion Energy Sciences (FES)</strong></td>
<td>Build the scientific foundations for a fusion energy source</td>
</tr>
<tr>
<td><strong>High Energy Physics (HEP)</strong></td>
<td>Understand how the universe works at its most fundamental level</td>
</tr>
<tr>
<td><strong>Nuclear Physics (NP)</strong></td>
<td>Discover, explore, and understand all forms of nuclear matter</td>
</tr>
</tbody>
</table>
SC Program Managers

Dr. Christine Clarke – ARDAP
Dr. David Rabson – ASCR
Dr. Justin Hnilo – BER
Dr. Robin Hayes – BES
Dr. Julie Ezod – DOE IP
Dr. Curt Bolton – FES
Dr. Jeremy Love – HEP
Dr. Kenneth Hicks – NP

Meet them later in the Breakout Rooms!!!
DOE National Laboratories: A Unique Asset for Training and Scientific Discovery

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

Culture of team science, mentoring, and learning through discovery
28 Scientific User Facilities

Over 35,000 users per year!
Office of Workforce Development for Teachers and Scientists (WDTS)

Foster the development of the next generation of scientists, engineers, and technicians to support DOE mission and conduct the research to realize the nation’s science and innovation agenda.

Training Opportunities for Students and Faculty at DOE National Laboratories:

- Science Undergraduate Laboratory Internships – SULI
- Community College Internships – CCI
- Visiting Faculty Program – VFP
- **Office of Science Graduate Student Research Program – SCGSR**
SCGSR Program

Supplemental awards to outstanding graduate students

Move to a DOE National Laboratory/Facility to conduct part of their doctoral thesis research 3 – 12 consecutive months

Areas that address high-priority workforce needs in scientific challenges central to the SC mission
SCGSR Program by the Numbers

Since 2014

1066 awardees from
443 hometowns in
47 States + DC,
pursuing PhDs at
161 Universities, working with

779 National Laboratory scientists

WHAT AWARDEES SAY ABOUT SCGSR

99 %
Received training not available at their universities

99 %
Expanded their networks

>78 %
Interested in employment or postdoctoral positions at DOE National Labs

99 %
Stated SCGSR introduced them to careers outside academia

100 %
SCGSR enabled completion of an important part of their dissertation

50 % of the awardees working at least at one of the scientific user facilities and

28 DOE National Labs and Sites

30 % Of the awardees are women

28 C-Areas

18 DOE IP

16 FES

18 BES

18 HEP

18 NP

10 ARDAP

18 ASCR

1066 awardees from National Laboratory scientists

Since 2014

1066 awardees from
443 hometowns in
47 States + DC,
pursuing PhDs at
161 Universities, working with

779 National Laboratory scientists

WHAT AWARDEES SAY ABOUT SCGSR

99 %
Received training not available at their universities

99 %
Expanded their networks

>78 %
Interested in employment or postdoctoral positions at DOE National Labs

99 %
Stated SCGSR introduced them to careers outside academia

100 %
SCGSR enabled completion of an important part of their dissertation

50 % of the awardees working at least at one of the scientific user facilities and

28 DOE National Labs and Sites

30 % Of the awardees are women

28 C-Areas

18 DOE IP

18 FES

18 BES

18 HEP

18 NP

10 ARDAP

18 ASCR
Questions to Ask Yourself

• Why do I want to do part of my PhD research at a DOE national laboratory?

• What tools/expertise do I need that is not available at my university?

The unique expertise/capabilities of scientists/facilities at DOE National Labs/sites may enable a more in depth understanding of your research!

• Does my research **align with the priority directions** of the DOE Office of Science?

[https://science.osti.gov/wdts/scgsr/How-to-Apply/Priority-SC-Research-Areas](https://science.osti.gov/wdts/scgsr/How-to-Apply/Priority-SC-Research-Areas)
One More Question

Can the SCGSR program contribute to my professional and career goals?

- Become a **Scientist-in-Residence**: test drive a career as a scientist
- Networking opportunities

“However, it was not just the advanced techniques that I learned, but also the people I met and the networking I was able to do that was a critical part of my experience. I met many scientists who pushed my understanding in my field to new heights, and who gave me career and research advice along the way.”

Leila Wahab 2021 S2
Benefits and Eligibility

Awards/Compensation

- Stipend up to $3,600/month for general living expenses
- Reimbursement of inbound/outbound traveling expenses to/from the host DOE National Laboratory/facility of up to $2,000 (> 50 miles away)

Eligibility

- U.S. Citizen or Lawful Permanent Resident
- Enrollment in a qualified graduate program
- Ph.D. Candidacy
- Graduate research aligned with an SCGSR priority research area
- Collaboration with a DOE laboratory scientist

New research experiences

Full details, requirements, FAQs, and link to application at: https://science.osti.gov/wdts/scgsr/

Program Contact: sc.scgsr@science.doe.gov
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**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications Due (including all letters of support)</td>
<td>May 1, 2024, 5:00 PM ET</td>
</tr>
<tr>
<td>Offer Notification Period</td>
<td>September 1-10, 2024*</td>
</tr>
<tr>
<td>Earliest Start Date for Proposed Project Periods</td>
<td>November 11, 2024*</td>
</tr>
<tr>
<td>Latest Start Date for Proposed Project Periods</td>
<td>March 3, 2025*</td>
</tr>
</tbody>
</table>

* These dates are tentative.

- Project periods may be 3 to 12 consecutive months in duration, the length is determined by the applicant’s proposed work.
- Awardees can choose the start dates within the window above.
Identifying a DOE National Lab Scientist

1. Directly from the scientific literature
   Ideally: your research needs drive you to a specific investigator!

2. Your advisor and their network

3. Searchers: ISI Web of Science, SciFinder, Google Scholar...
   Search by topic -> refine by institution

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

5. SCGSR website: list of potential collaborating scientists
   Includes research descriptions and contact information
   https://science.osti.gov/wdts/scgsr/How-to-Apply/Identifying-a-Collaborating-DOE-Laboratory-Scientist

6. Email us (SC.SCGSR@science.doe.gov) or the Managers of each Program Office (emails in the last slide)
Contacting National Laboratory Scientists

Be aware scientists receive A LOT of spam and may overlook your messages, so:

1. Don’t use a private email address, use your school’s email address
2. Subject line: clear and to the point! “Interested in collaborating on a DOE SCGSR project on xxx” (your topic in 3-4 words!)
3. Cc your advisor
4. Some National Laboratory scientists may not know the program. Provide a brief description.
5. Essential information: the program pays you for working along with them on xxx. (No cost to them!)
6. Provide a brief summary of the work you want to propose: Elevator pitch!
Questions to Ask a Scientist

• Discuss your research thesis and ideas to find out:
  1. Is there an overlap of interests?
  2. Do they have time for working with you?
  3. What type of instrumentation is available at the National Lab?
  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, put two pieces of equipment together, etc.
  6. Do you need to apply for using specific facilities?

• If you agree it makes sense to work together...
  1. Discuss with your thesis advisor
  2. Start drafting your proposal and send early versions to advisor and collaborating scientist for feedback (many iterations!)

This is a team effort, but you must lead it, and you will have the major responsibilities!
SCGSR Application

All applications must be completed through the online system. 

Only COMPLETE applications submitted by the deadline will be considered!

A Complete SCGSR Application includes:

- All required fields of the Online Application System, including:
  - Contact information of the applicant, primary graduate thesis advisor, and collaborating National Laboratory scientist.
  - Academic information.
  - Professional information, including research experiences, scientific publications, awards, etc.
  - Alignment of proposed research to one of the SCGSR Priority Research Areas.

- Official graduate transcripts and proof of Ph.D. Candidacy.
  - Please remove SSN or dates of birth from transcripts, transcripts that have this information will be immediately eliminated from the system and deemed non-compliant.

- Two Letters of Support: one by graduate thesis advisor, and the other by collaborating National laboratory scientist.

- Research Proposal (3-pages maximum).
WARS: Online Application System
1. Complete a page before moving on, otherwise it won’t be saved – you can always come back and edit the contents

2. Gray non-fillable boxes depend on you filling prior sections

3. If you don’t have the answer or document, type in or upload placeholders (e.g., the word PLACEHOLDER or blank PDFs if you don’t have the official transcripts or proposal), then remember to come back and replace the placeholders when ready

4. E-mails for advisor and collaborating scientist sent from the system, but won’t be sent until you upload all the required information
Alignment with Research Priority Areas

• Priority research areas descriptions: what is your match?

• Writing a justification: Look for keywords, but then make sure your explanation makes sense.

• Discuss today with specific Program Managers in the breakout rooms, you can also email them or us afterwards.

• During review, managers may move your application to a more suitable area.

• Convergence areas: outline how your proposed work applies to each office.
SCGSR Research Proposal

• Developed by **yourself** in collaboration with the DOE national laboratory scientist, and in consultation with your thesis advisor

• Describe the part of your PhD thesis project that will be conducted at the DOE national laboratory/facility. **This part is your SCGSR proposal.**

• Address in its aims at least one of the **SCGSR Priority Research Areas**, and how the proposed SCGSR project will take advantage of the DOE national laboratory/facility's research capabilities and assets.

An application whose SCGSR research proposal is the same as that of an SCGSR application awarded in a previous solicitation cycle is a duplicate and will NOT be considered in any other SCGSR solicitation cycles.

[https://science.osti.gov/wdts/scgsr/how-to-apply/research-proposal-guidelines/](https://science.osti.gov/wdts/scgsr/how-to-apply/research-proposal-guidelines/)
Proposal Structure

1. **Overarching Goal:** What is the problem you want to solve or the question you want to answer?

2. **Background:** Why is this problem/question relevant? What is the current understanding/state of the art? How does it fit in a SCGSR priority area? Broadly: how can this problem/question be answered, and what are the preliminary steps/data you have taken/got that suggest your idea may work?

3. **Specific Aims:** The basis for your research plan. How do your specific goals relate to each other? Do they depend on each other? Are they sequential, parallel?

4. **Approach:** Strategy, general steps with rationale. What will you be doing in the lab from day 1? What results do you expect? What could go wrong and how could you overcome potential problems?

5. **Timeline:** When will you do each part of the work? What is the expected pace of progress?

6. **References:** Separate page.


   Successful proposals effectively communicate the innovation, timeliness, and excitement of the ideas for the proposed research.
A Possible Workflow

- Address the questions as bullets
- Expand each gradually into paragraphs
- Trim - Connect
- Proofread, proofread, proofread
- Colleague’s feedback
- Does your message get across the way you thought?
- Advisor and Collaborator

The Strength of your Argument for Funding

What is the innovation?
How important is the work?
Scientific excitement!
Review and Selection Process

- Completed Applications
- Eligibility and Compliance Review
  - Does the application meet all the program guidelines?
- Relevance Review
  - Is the proposed work aligned with at least one of the SCGSR Priority Research Areas?
- Merit Based Expert Review (External Reviewers)
  - Expert reviewers from the scientific community. Scientific merit and value for PhD training.
- Final Selection
- Awards
## 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**?
Some Additional Thoughts...

• **HYPOTHESIS DRIVEN RESEARCH**: We support fundamental research - not applied research.

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

  What are the big scientific questions that these new tools will eventually help to answer?

• **You want the reviewers to write:**

  “The proposed research is well thought out”

  If the reviewer does not understand what you were trying to say: Is it the reviewer’s fault?
Thank You!

Questions???

After this Q&A please visit the Breakout Rooms to meet with

Program Managers of the SC Research Offices

Talk with them about of your research

After the breakout session, please come back to the main room and please answer our feedback poll

Next Application Assistance Workshop
April 18, 2024, 2:00 – 4:30 pm ET:
Helpdesk + meet Scientists and Former Awardees

Energy.gov/science
“My experience was nothing short of extraordinary, and I am forever grateful to the DOE SCGSR program for enabling me to get my foot in the door. I remember thinking to myself the first day I stepped into SQMS's offices "this is exactly where I was meant to be", and a year later I still think that same exact thought. I felt welcome by my colleagues, and that I am really part of the team and their tireless efforts to bring this technology to life. I learned such valuable skills that have rounded me out as a scientist/engineer that I would not have gotten without this program, and it has really shaped me into an expert in this field.”

Hans Johnson 2022 S1

“However, it was not just the advanced techniques that I learned, but also the people I met and the networking I was able to do that was a critical part of my experience. I met many scientists who pushed my understanding in my field to new heights, and who gave me career and research advice along the way.”

Leila Wahab 2021 S2

“This combination of hands-on experience and networking has been an immense boost to my professional development, and I would encourage any other grad student in a similar place in their early science career to pursue SCGSR opportunities whenever possible.”

Cooper Wagner SCGSR 2022 S1

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

Christine Burgan 2022 S2
Office of Science Research and R&D Programs

- Dr. Christine Clarke – ARDAP (Christine.Clarke@science.doe.gov)
- Dr. David Rabson – ASCR (david.rabson@science.doe.gov)
- Dr. Justin Hnilo – BER (Justin.Hnilo@science.doe.gov)
- Dr. Robin Hayes – BES (Robin.Hayes@science.doe.gov)
- Dr. Julie Ezold – DOE IP (Julie.Ezold@science.doe.gov)
- Dr. Curt Bolton – FES (Curt.Bolton@science.doe.gov)
- Dr. Jeremy Love – HEP (Jeremy.Love@science.doe.gov)
- Dr. Kenneth Hicks – NP (Kenneth.Hicks@science.doe.gov)