SCGSR Program: Goal and Key Elements

The goal of the Office of Science Graduate Student Research (SCGSR) program is to prepare graduate students for science, technology, engineering, or mathematics (STEM) careers critically important to the DOE Office of Science mission, by providing graduate thesis research opportunities at DOE laboratories.

- The SCGSR program provides supplemental awards to graduate students to spend 3 to 12 consecutive months conducting part of their graduate thesis research at a DOE lab in collaboration with a DOE laboratory scientist.
- The purpose of the SCGSR program is to prepare graduate students for science, technology, engineering, or mathematics (STEM) careers critically important to the DOE Office of Science mission, by providing graduate thesis research opportunities at DOE laboratories/Facilities.
- The research opportunity is expected to advance the graduate student's overall doctoral thesis while providing access to the expertise, resources, and capabilities available at the DOE laboratories/Facilities.

2022 Solicitation 2 – Applications Due November 9, 2022, 5:00PM ET

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

Program Management and Budget

The SCGSR program is managed by the DOE Office of Science's Office of Workforce Development for Teachers and Scientists (WDTS) in collaboration with 6 SC research and 2 R&D program offices and 17 participating DOE national laboratories plus GA/DIII-D. Oak Ridge Institute for Science and Education (ORISE) provides support for program administration.

Fiscal Year (Budget)/Solicitations		Awards
FY 2014 ($2.0M appropriated), 1 Solicitation		65
FY2015 ($2.5M appropriated), 2 Solicitations	2015 Solicitation 1	47
	2015 Solicitation 2	52
FY2016 ($2.5M appropriated), 2 Solicitations	2016 Solicitation 1	43
	2016 Solicitation 2	55
FY2017 ($2.5M appropriated), 2 Solicitations	2017 Solicitation 1	52
	2017 Solicitation 2	60
FY2018 ($2.5M appropriated), 2 Solicitations	2018 Solicitation 1	47
	2018 Solicitation 2	70
FY2019 ($3.5M appropriated), 2 Solicitations	2019 Solicitation 1	49
	2019 Solicitation 2	62
FY2020 ($4.5M appropriated), 2 Solicitations	2020 Solicitation 1	52
	2020 Solicitation 2	78
FY2021 ($4.6M appropriated), 2 Solicitations	2021 Solicitation 1	67
	2021 Solicitation 2	87

SCGSR Research Project Related to SC User Facilities

- **All 27 SC User Facilities (https://science.osti.gov/user-facilities/) can participate.**
  - An opportunity for training and recruiting highly skilled workforce of DOE national laboratories/facilities.
- **An SCGSR application is NOT a user facility proposal. Applications proposing to use an SC user facility must apply for user facility time separately.**
  - The graduate research opportunity provided by the DOE SCGSR program is expected to advance the graduate students' overall doctoral thesis while providing access to the expertise, resources, and capabilities available at the DOE laboratories/facilities.
- **Based on 16 completed cycles (since 2014), 40-50% of all SCGSR applications and awards proposed research projects related to the SC User Facilities. The projects primarily aim at:**
  - Using SC user facilities to do science in an SCGSR priority area identified by SC Program Offices (ASCR, BES, BER, FES, HEP, NP). See a list of the current priority areas for SCGSR 2022 in the next slide.
  - Contributing to the R&D activities to advance the capabilities of facilities
    - Graduate students' extended residence at a user facility, instead of short, periodic visits through a user proposal;
    - Dedicated focus on research problems of mutual interest, to both graduate student's doctoral thesis and to the user facility at a host DOE national laboratory;
    - Staff scientists at user facilities (for instance, Instrument or Beamline Scientists) may serve as a *Collaborating DOE Laboratory Scientist*, who provides supervision and research mentorship to graduate students. https://science.osti.gov/wdts/scgsr/information-for-collaborating-doe-laboratory-scientists-and-thesis-advisors/

SCGSR Program: Priority Research Areas for 2022 Solicitation 2

https://science.osti.gov/wdts/scgsr/how-to-apply/priority-sc-research-areas/

Convergence Research Topical Areas
(a) Microelectronics (ASCR, BES, HEP, and NP)
(b) Data Science (ASCR, BES, BER, FES, HEP, and NP)
(c) Conservation Laws and Symmetries (HEP and NP)
(d) Accelerator Science (ASCR, BES, BER, FES, HEP, NP, DOE IP, and ARDAP)

Advanced Scientific Computing Research (ASCR)
(a) Applied Mathematics
(b) Computer Science
(c) Computational Partnerships
(d) Advanced Computing Technologies

Basic Energy Sciences (BES)
(a) Accelerator and Detector R&D
(b) Basic Geosciences
(c) Basic Science for Advanced Manufacturing
(d) Basic Science for Clean Energy and Decarbonization
(e) Chemical and Materials Sciences for Quantum Information Science (QIS)
(f) Data and Computational Sciences for Materials and Chemical Sciences
(g) Fundamental Electrochemistry for Chemical and Materials Sciences
(h) Gas Phase Chemical Physics
(i) Instruments R&D for Neutron and X-ray Facilities
(j) Instruments and Techniques R&D for Electron and Scanning Probe Microscopy
(k) Materials Sciences and Chemistry for Microelectronics
(l) Nuclear Chemistry and Radiochemical Separations
(m) Radiation Effects in Materials and Chemistry

Biological and Environmental Research (BER)
(a) Computational Biology and Bioinformatics
(b) Biomolecular Characterization and Imaging Science
(c) Plant Science for Sustainable Bioenergy
(d) Environmental Microbiology
(e) Environmental System Science
(f) Atmospheric System Research
(g) Earth System Model Development
(h) Regional and Global Model and Analysis

Fusion Energy Sciences (FES)
(a) Burning Plasma Science & Enabling Technologies
(b) Discovery Plasma Science

High Energy Physics (HEP)
(a) Theoretical and Computational Research in High Energy Physics
(b) Advanced Accelerator and Advanced Detector Technology Research and Development in High Energy Physics
(c) Experimental Research in High Energy Physics

Nuclear Physics (NP)
(a) Medium Energy Nuclear Physics
(b) Heavy Ion Nuclear Physics
(c) Fundamental Symmetries
(d) Nuclear Structure and Nuclear Astrophysics
(e) Nuclear Theory
(f) Nuclear Data and Nuclear Theory Computing
(g) Accelerator Research and Development for Current and Future Nuclear Physics Facilities
(h) Quantum Information Science for Experimental and Computational Nuclear Physics
(i) Artificial Intelligence and Machine Learning for Nuclear Physics
(j) Advanced Detector Technology Research and Development in Nuclear Physics

Isotope R&D and Production (DOE IP)
(a) Isotope Production Research
(b) Isotope Processing, Purification, Separations and Radiochemical Synthesis
(c) Biological Tracers and Imaging
(d) Isotope Enrichment Technology

Accelerator R&D and Production (ARDAP)
(a) Accelerator Technology Research
(b) Accelerator Technology Development

Eligibility, Awards, and Application

- Graduate students must apply online through the online application system.
- The application requires a research proposal and letters of support from both the graduate student's thesis advisor and the collaborating DOE laboratory scientist.
- Student's research and proposed SCGSR project must be aligned with one of the identified SCGSR priority research areas defined by the SC Program Offices and specified in the solicitation.
- Applications proposing to use an SC user facility must apply for user facility time separately.

Eligibility:

- U.S. Citizen or Lawful Permanent Resident
- Qualified graduate program & Ph.D. Candidacy
- Graduate research aligned with an SCGSR priority research area
- Establishment of a collaborating DOE laboratory scientist at the time of application

Award Benefits:

- A stipend of up to $3,600/month for general living expenses
- Reimbursement of inbound/outbound travel expenses to/from the DOE laboratory of up to $2,000.

(Award payments are provided directly to the student.)

Application Requirements

All applications to the SCGSR program must be completed through the online application 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 graduate applicant, primary graduate thesis advisor, and collaborating DOE laboratory scientist
  - Academic information, including undergraduate and graduate study
  - Professional information, including scientific publications and awards, research experiences, etc.
  - Alignment of proposed research to one of the SCGSR Priority Research Areas https://science.osti.gov/wdts/scgsr/how-to-apply/priority-sc-research-areas/
- A **SCGSR Research Proposal** (*3-page maximum including references, full guidance provided*). https://science.osti.gov/wdts/scgsr/how-to-apply/research-proposal-guidelines/
- Official graduate transcripts and proof of Ph.D. Candidacy. https://science.osti.gov/wdts/scgsr/how-to-apply/graduate-transcripts/
- Two Letters of Support, one by primary graduate thesis advisor, and the other by collaborating DOE laboratory scientist. https://science.osti.gov/wdts/scgsr/how-to-apply/letters-of-support/

Merit Review Criteria

1. Scientific and/or Technical Merit of the Proposed Research*

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 (graduate student) sufficiently well 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 by the DOE laboratory collaborating scientist?

2. Relevance of the Proposed Research* to Graduate Thesis Research and Training

a. Does the proposed research have the potential to make a significant contribution to the applicant's (graduate student's) thesis research project?

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

* Research proposed is explicitly the scope of the research proposed to be conducted by the applicant (graduate student) at the DOE Laboratory/Facility.

Key Dates for 2021 - 2023

At the submission deadline (shown in red), the online application system will close after which no additional materials will be accepted.

The online application system closes at 5:00 PM Eastern Time.

	2021 Solicitation 2 (Ongoing)	2022 Solicitation 1 (Under Review)	2022 Solicitation 2 (Upcoming)
On-line Application Opens	August 19, 2021	February 9, 2022	August 17, 2022
Applications Due (including all letters of support)	**November 10, 2021**	**May 4, 2022**	**November 9, 2022**
Offer Notification Period *Begins on or around*	April/May 2022	September 8 –21, 2022	April 3 – 17, 2023
*Earliest** Start Date for Proposed Project Periods	June 13, 2022	November 14, 2022	June 12, 2023
*Latest*** Start Date for Proposed Project Periods	October 3, 2022	March 6, 2023	October 2, 2023

**Proposed project periods may not begin before this date, and may be 3 to 12 consecutive months in duration.*
*** Proposed project period must begin no later than this date, and may be 3 to 12 consecutive months in duration.*