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

What has been the hardest part of applying to the SCGSR program so far?

Office of Science Graduate Student Research Program (SCGSR)

Application Assistance Workshop 2 for 2026 Solicitation 1

April 9, 2026

"This has been the most productive year of my PhD."

SCGSR 2023 S2 Awardee

U.S. DEPARTMENT of ENERGY | Office of Science

Energy.gov/science

Schedule

(All times East)

2:00-2:50 PM Webinar:

- The SCGSR Program
- Evaluation of the Applications
- Proposal format
- Tips on Proposal Writing
- Q&A

3:00-3:30 PM **Panel I: Recent SCGSR Awardees** (2 parallel panels)

3:30-4:00 PM **Panel II: DOE National Lab Scientists** (2 parallel panels)

SCGSR Program

Support 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

- PhD candidacy at U.S. University
- 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**

Not an Internship!

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

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

Types of Research for SCGSR

- **Hypothesis driven**: Fundamental research (NOT 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.

63 Priority Research Areas

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

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 ele[illegible]onic, atomic, and molecular levels
Isotope R&D and Production (IRP)	National preparedness for isotope production and distri[illegible]on
Fusion Energy Sciences (FES)	Build the scientific foundations for a fusion energy[illegible]rce
High Energy Physics (HEP)	Understand how the universe works at its most fundam[illegible]tal level
Nuclear Physics (NP)	Discover, explore, and understand all forms of nuclear matter

Convergence Areas

Exclusions!

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**

SCGSR is ON SITE at the host DOE National Laboratory!!!

SCGSR Proposal

WHAT REVIEWERS LOOK FOR

1. Overall Goal:

Overarching problem or question? **THE BIG PICTURE!**

2. Background:

- Current understanding/state of the art? **UP TO DATE!**
- Relevance? **THE BIG PICTURE!**
- Fit in an SCGSR priority research area?
- Broadly: how can this problem/question be answered? **GENERAL STRATEGY**
- *Preliminary results/data* suggesting your idea may work? **CREDIBILITY**

3. Specific aims:

Basis for your research plan. Split Goal into smaller targets.

4. Approach:

- Strategy, general steps with rationale. Will you use **the best methods** there are?
- What will you be doing in the lab from day 1? **SPECIFICS**
- What results do you expect? The **impact** of your work.
- Potential problems? **PREPAREDNESS**

5. Timeline:

Expected pace of progress? **BUILD IN TIME FOR TRAININGS!**

3 pages

6. References:

Separate **1** page.

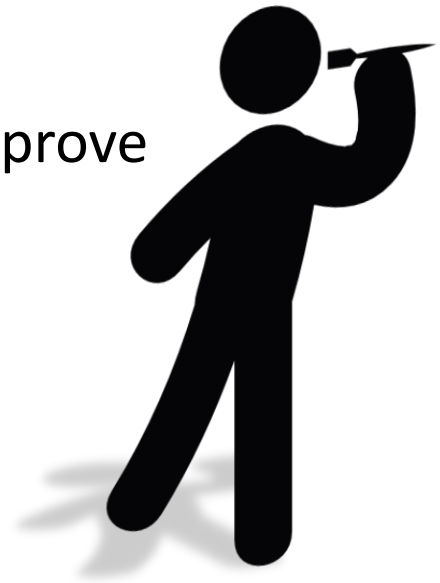
USE IT!

A Straw Man Proposal

From brainstorming to a draft

- Start with bullets
- Include all ideas: good and bad

  -> then you can trim and improve
- Beef the surviving bullets up
- Connect the bullets



Help your Reviewers:

Wording Typical of Key Elements

The *aim* of my research is to develop *the scientific basis* for…..
This work will deepen the *fundamental understanding of* ….

XXX is one of the most promising approaches for ….(REF) However, it is not well *understood* the *mechanism* of how XXX….

Background/ Rationale

We have observed that… and… (REF). *Our results suggest* that YYY…

Credibility/ Hypothesis

To determine the potential *role* of YYY on *the mechanism* of XXX… we *propose* to…

Overall strategy

ZZZ at AAA *National laboratory* has developed …*tools* that are ideally suited to test our hypothesis.

SCGSR

Therefore, we propose to *collaborate* with AAA to…. **SCGSR**

We will *first*… *this will determine* whether…. **Steps along with rationale**

Based on the outcomes of… , *we will* either… or …. **Expectations/Strategy**

It is *possible* that…, in this case we will… **Contingency plans**

Ultimately, we *expect* to… **Expected results**

Reaching this understanding *addresses the grand challenge* listed in the report… (REF or link). **Overall goal – Relevance to SC Mission/Impact – Vision**

Aligning Proposal to SC Mission/SCGSR Priority Research Areas

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

Program office's websites:

- Basic research needs reports ➡ grand challenges: does your research aim that way?
- PI meeting/workshop reports for some of their divisions ➡ find potential collaborating scientists

Find them along with many other document types at:

- ASCR: https://science.osti.gov/ascr/Community-Resources
- BER: https://science.osti.gov/ber/Community-Resources
- BES: https://sc.osti.gov/bes/Community-Resources
- IRP: https://sc.osti.gov/Isotope-Research-Development-and-Production/Resources
- FES: https://sc.osti.gov/fes/Community-Resources
- HEP: https://sc.osti.gov/hep/Community-Resources
- NP: https://sc.osti.gov/np/Community-Resources

EXERCISE: 3 minutes

Write down your overall research goals in 2-3 sentences

1. Start rough, polish later

2. Clear and concise sentences

3. Avoid being wordy

4. Try to show the expected impact

EXERCISE: 3 minutes

List 5 tools, methods, and/or techniques* that you would need to reach your research goals

*Not available at your home university

Explain briefly:

- Why do you need them?
- How would you use them?

Homework: which DOE National Lab has them?

Proposal 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**?

EXERCISE: Homework

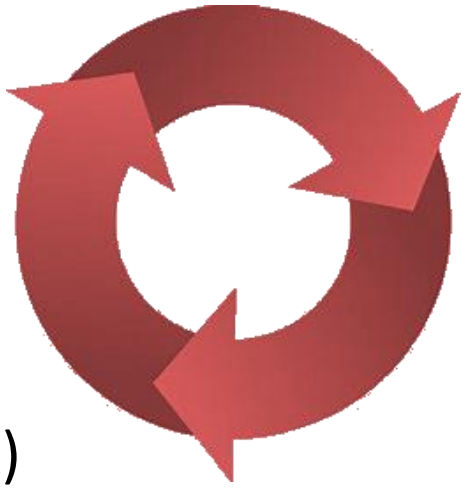
Grab Your Proposal Draft and Assess it Against the Review Criteria

Even better: ask a friend to do it for you
(just don't get mad about criticisms)

Check flow:

- **Logic of the ideas**: How articulate and complete is the reasoning? Are there any gaps?
- **Readability**: Can they understand what you meant to say?

Rate each item of the criteria on a 1 – 4 scale
(yes… that is arbitrary, but gives you an idea of what needs more work)



Write-Feedback-Write

Top 10 Concerns of Past Reviewers

1. Lack of **detail** or specificity in the research plan/goals/methodologies/outcomes. (~30%)
2. Overly **ambitious scope** for the timeline/scope **too broad**. (~20%)
3. Inadequate **preliminary data**/prior experience. (~15%)
4. Insufficient **discussion of challenges**/limitations of proposed methods/**risk mitigation** strategies. (~15%)
5. Unclear connection to **thesis/training** enhancement. (~12%)
6. Lack of **novelty**/broader scientific **impact**/connection to **DOE mission**. (~10%)
7. Lack of clear **scientific hypothesis**. (~10%)
8. Insufficient justification for DOE **national lab resources**/fit. (~10%)
9. Proposal **writing/clarity**/grammar issues. (~10%)
10. Insufficient consideration of alternative methods/**comparison to other methods**/questionable **appropriateness** of technique/method. (~10%)

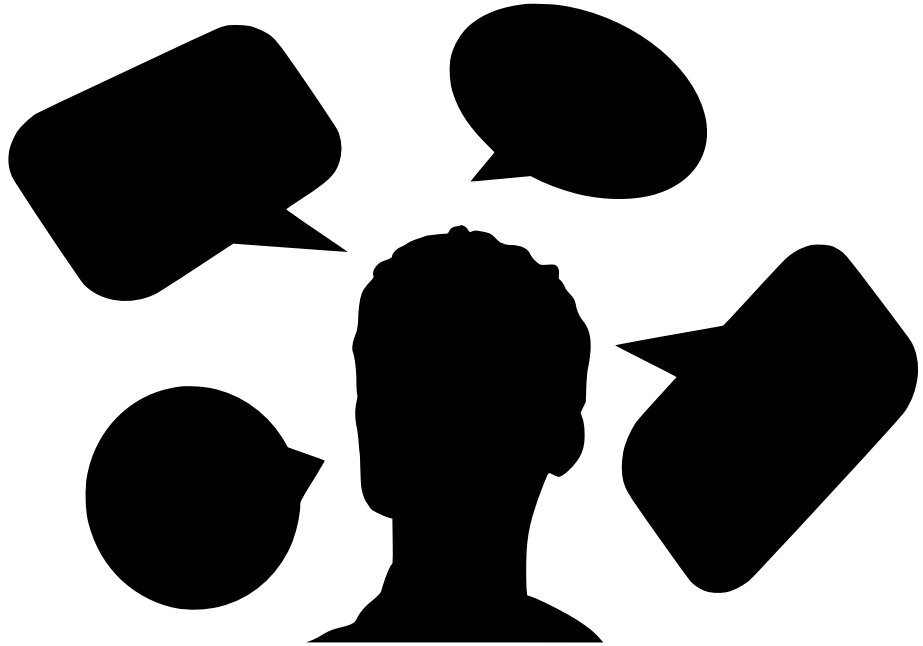
Keep in Mind

Reviewers are…

Smart: they won't fall for attempts to embellish an idea or cover some deficiency – be honest and go straight to the point

Busy: don't make them lose time with items that aren't needed

Multitasking: short sentences go a longer way



The Art of Scientific Writing: Reviewers Need Clarity

What Reviewers Experience

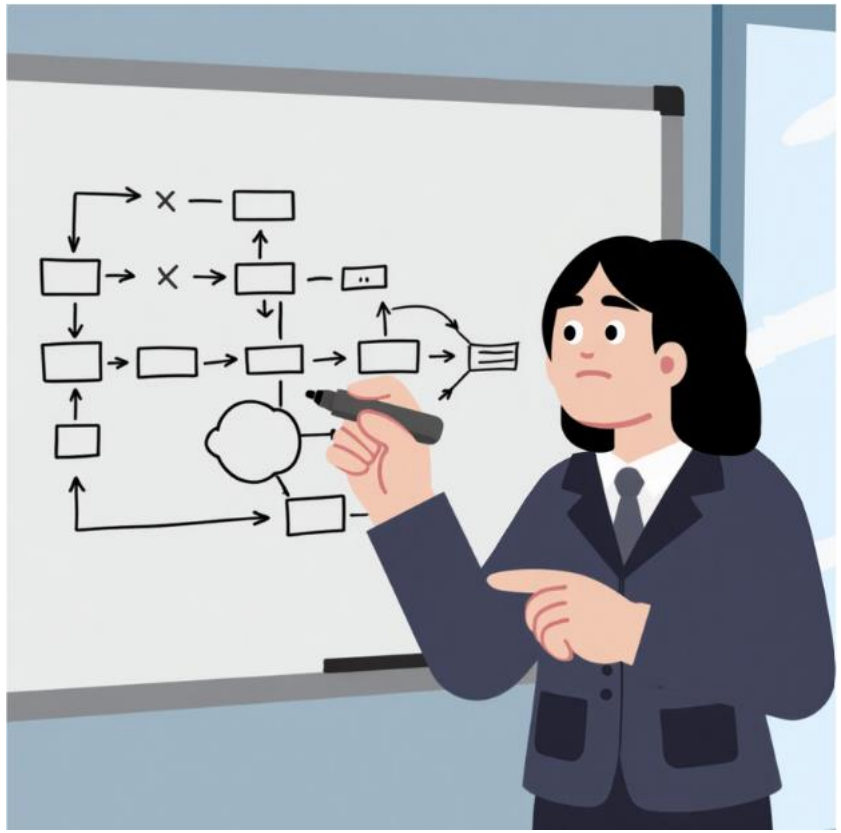
- **Common complaint: *"The proposal lacks clarity"***
  - The science is hard to follow
  - Your hypothesis is not well defined
  - Your approach is not fully developed
  - You are not fully prepared
- **Clarity…**
  - Conveys your confidence on the research proposal
  - Builds reviewer trust in your proposed project

Your Action Plan

- **Start with a messy first draft**
  - Get your outline and ideas down
- **Refine, refine, refine!**
  - Dedicate the time
  - Step away from draft
  - Get feedback from multiple perspectives
- **Set aside your ego and perfectionism**
  - Accept critical feedback
  - Revise your ideas
  - Cut whole sections of text

Illustrating Complex Concepts

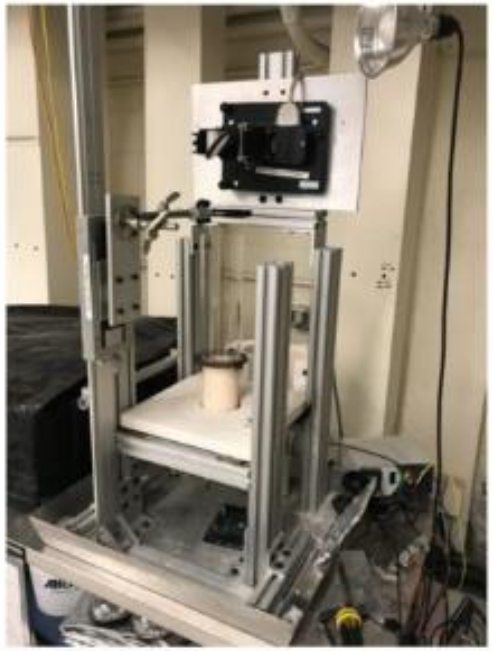
- **Consider adding ONE high-impact figure:**
  - Conceptual model
  - Experimental workflow
  - Schematic of equipment
  - Preliminary data
  - Timeline
- **A strong figure can:**
  - Clarify your hypothesis
  - Show feasibility
  - Demonstrate a well-thought-out research plan
  - Reduce reviewer fatigue
  - Make your proposal memorable
- **Start with a plan – what do you want to convey?**



Illustrating Complex Concepts

If a reviewer looked at these figures, which would they better understand?

Option 1



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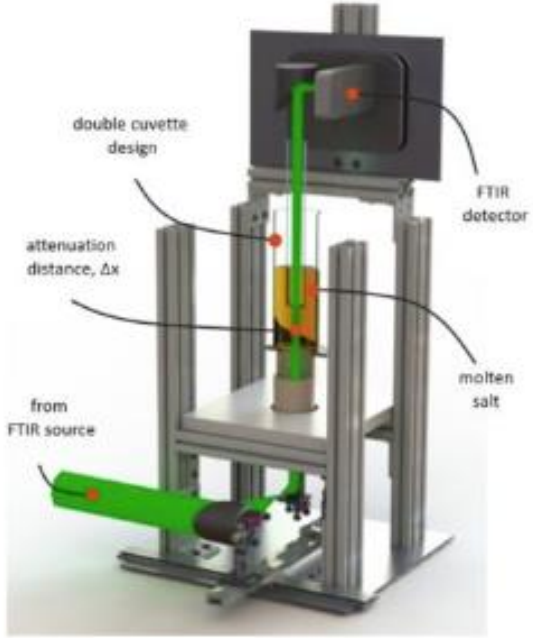

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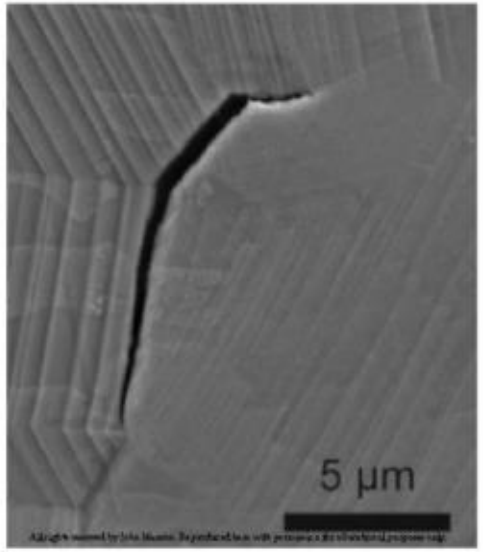
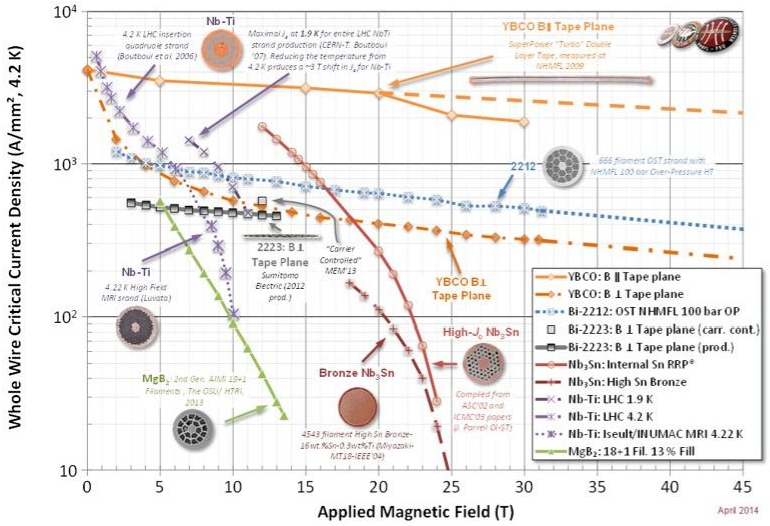


Option 2

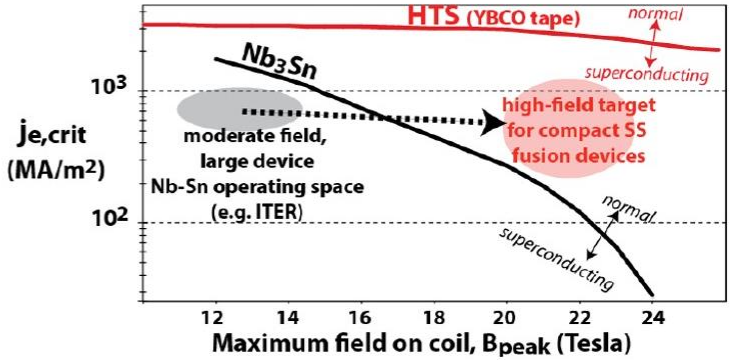
The Art of Illustrating Complex Concepts

If a reviewer looked at these figures, which would they better understand?

Option 1

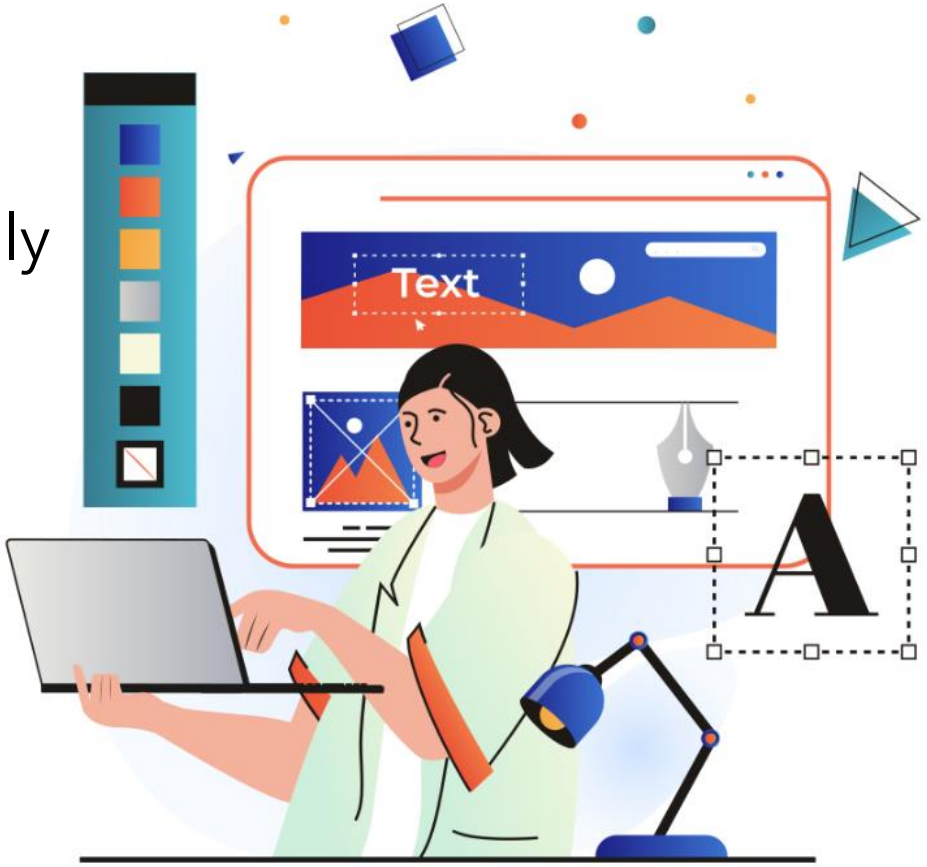


Option 2



Design Tips

- Keep it simple (no clutter)
- Large, readable text and labels
- Use color intentionally
- Caption should explain the figure appropriately
- Figure should enhance your proposal



Before you submit, a final checklist

Ask yourself:

- ✅ Is my hypothesis clearly stated?
- ✅ Do my aims directly test it?
- ✅ Is my scope realistic?
- ✅ Is my approach specific with adequate background and/or prelim data?
- ✅ Can a reviewer in my proposed priority research area follow my logic?
- ✅ If a figure is included, is it high-impact and does it enhance my proposal?
- ✅ Have I justified relevance to the DOE mission and why DOE Lab resources are essential?
- ✅ Is the benefit to my dissertation and development clearly stated?
- ✅ Have I addressed potential challenges with contingency plans?
- ✅ Does my timeline match my aims?
- ✅ Can a reviewer with expertise in my proposed priority research area follow my logic?

Then:

Proposal Samples

In the chat box you will find some sample proposals that former awardees generously agreed to share with you.

You are welcome to use them as examples, but we ask that you please refrain from distributing them and that you delete them after you have used them (this may be a month from now).

Questions So Far?

Panels with 2025 S1 SCGSR Awardees

Panel 1:

- **Maya Mancini** – BNL – *Advanced Accelerator and Detector Research:* Integrated circuits for picosecond-level timing
- **Noah Huerta** – PNNL – *Quantum Information Science:* Simulation and design of molecular spin Qubits
- **Alice Giem** – NLR – *Microelectronics:* Electrochemical strategies for accessing neuromorphic functions

Panel 2:

- **Diana Taj** – PNNL – *Earth System Model:* Modeling saline pulse responses in coastal wetlands
- **Alondra Rodriguez-Rolon** – ANL – *Separation Science:* Zwitterionic ion-channel membranes
- **Erin Huntzinger** – LLNL – *Nuclear Structure and Astrophysics:* Rapid neutron capture process in the Milky Way stellar halo

Panels with National Laboratory Scientists

Panel 1:

- **Dr. Alex Martinson** – ANL – Interfaces, *in situ* characterization of materials synthesis
- **Dr. Silvia Zorzetti** – FNAL – Quantum computing, quantum transduction, quantum communication
- **Dr. Gary Trubl** – LLNL – Meta-omics, microbial ecology, soil microbiology, biogeochemistry
- **Dr. Dustin McIntyre** – NETL – Optical sensing methods in harsh environments

Panel 2:

- **Dr. Leah Broussard** – ORNL – Neutron physics, neutron decay
- **Dr. Dmitry Polyansky** – BNL – Photochemistry, artificial photosynthesis, ultrafast transient spectroscopy
- **Dr. Alexander Austregesilo** – TJNAF – Hadron Physics, GlueX, hybrid meson searches

Thank You!

- After the Panels: **Feedback Poll**
- Office Hours: Every Friday 1-2 pm ET at

https://www.zoomgov.com/j/1600539575?pwd=KvKGfPnkogW2jjNuT2qxcdfCZhFFj1.1