REUs and You: Why Research Experiences for Undergraduates Matter for Graduate School

November 6, 2025

Meeting Logistics

- Meeting is being recorded and will be made available with slides to NNE enrollees
- Please submit questions for the speakers in the Q&A button in your toolbar
- You will have an opportunity to complete a survey after the webinar to guide future NNE programming
- Meeting overview:
  - Introduction and Welcome from Matthew Linton, Council of Graduate Schools
  - Presentations from Janet Rutledge, Kelsey Briggs, and Kateryna Friedman
  - Moderated Q&A with presenters
  - Conclusion and upcoming events

Learning Goals

- Understand what research experiences for undergraduates (REUs) are and how they differ from other undergraduate research opportunities.
- Learn how to find out if REUs are available on your campus and, if so, how to apply.
- Explore how REU sites work and why you might choose an REU versus other resume building opportunities (volunteering, internships, additional courses, etc.).
- Learn how graduate programs value REUs and how they prepare you for graduate study.
- Other research opportunities for undergraduates that may get you some of the same skills and experiences if REUs are not available at your institution or in your field.

Meet the Presenters

Janet Rutledge

Dean-In-Residence
Council of Graduate Schools

Kelsey Briggs

Director of Programs and Strategic Initiatives, Data Science Program
Worcester Polytechnic Institute

Kateryna Friedman

Assistant Professor of Physics
Worcester Polytechnic Institute

REUs and You: Why Research Experiences for Undergraduates Matter for Graduate School

November 6, 2025

Understanding the Purpose of Bachelor's, Master's, Ph.D.

- **Bachelor's degree** provides a foundation of knowledge to build on for a lifetime of learning.
- **Master's degree** provides more in-depth knowledge in one or more areas. May or may not include a thesis.
- **Ph.D. degree** provides understanding of how to do structured research. You contribute new knowledge to your field.

What Are “Research Experiences for Undergraduates” or REUs?

Group Experiences

- Formal programs that typically support 8-10 or more students working on research projects in a related area supervised by faculty and graduate students
- Can be at a university or government research facility (such as NIH or NASA)
- Most are during the summer and provide stipend and housing
- Includes professional development and community building activities

Individual Experiences

- Summer or semester experience working with faculty and graduate students on a research project
- Usually at your home university but can be at another university
- Can be paid a stipend or earn class credit toward your degree
- Sometimes linked to other on-campus REU projects to include professional development and community building activities

Why Are REUs Valuable Preparation for Graduate School?

- Introduction to the process of research that you will be doing in graduate school
- Experience working on open-ended problems and contributing to an on-going research project
- Exposure to specific research going in an academic department to learn what areas are interesting (or not) to you

Why Are REUs Valuable Preparation for Graduate School? *(continued)*

- **Application essays** ask you to describe
  - What research topics you are interested in pursuing and why
  - Past research experiences and what you contributed
- **Letters of recommendations** from faculty who can discuss your ability to pursue open ended research topics and how well you work independently and with others
- Studies show that undergraduates who have research experiences feel more connected to their disciplines and have **higher degree completion rates**

How To Find REU Opportunities

- **Talk with faculty at your university** to learn about group and individual REU opportunities during the summer or academic year
- **National Science Foundation**
  - REU Site Search https://www.nsf.gov/funding/initiatives/reu/search
  - NSF Educ and Training Application https://etap.nsf.gov/applicant-info
- **National Institute of Standards and Technology**
  - NIST Summer Undergraduate Research Fellowship (SURF) https://www.nist.gov/surf
- **National Institutes of Health**
  - NIH Summer Internship Program https://www.training.nih.gov/research-training/pb/sip/
- **NASA Internship Programs**
  - https://www.nasa.gov/learning-resources/internship-programs/
- **Smithsonian Internship Opportunities**
  - https://internships.si.edu/opportunities

Keep in Mind

- Ask questions – understand the *why* in addition to the *what* and *how*
- Learn about a variety of projects to help you figure out what areas interest you most (and which do not) for your future grad school (or employment)
- Prepare yourself: **“Opportunity is where luck meets preparation”**
- Have fun – these are your “good old days” that you’ll be looking back on
- Keep your eyes on the prize

Applied AI for Advanced Applications, NSF REU Site 2349370

Worcester Polytechnic Institute

Fall 2025

Program Overview

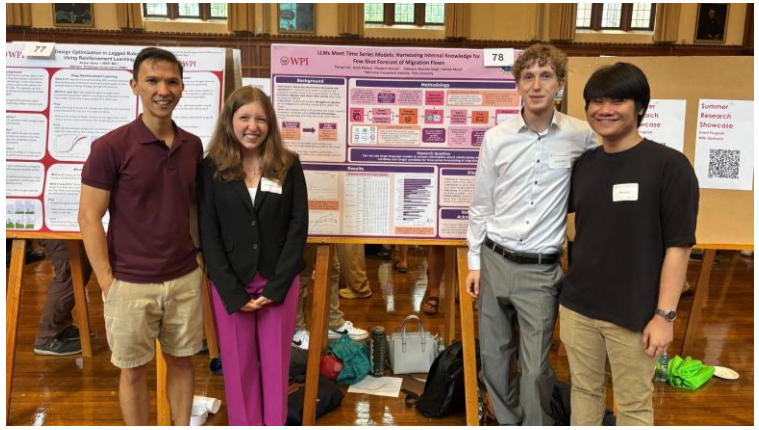
- Successfully operated since 2016
- 10-week, all expenses paid research experience
  - Tentative Date(s): Tuesday, May 25, 2026 – Saturday, August 1, 2026
- Site Leadership
  - PI Elke Rundensteiner, Co-PI Chun-Kit (Ben) Ngan, and Co-PI Kelsey Briggs.
- Advised by faculty experts and graduate student mentors
- Industry visits & professional development opportunities
- All REU Site Poster Symposium
  - Tentative Date: Thursday, August 27
- Opportunities to publish in professional journals and present at conferences

WPI

Stipends, Travel, Housing & Meals

- $8,400.00 stipend over the 10-week program ($840.00 per week, paid bi-weekly)
  - $700.00 weekly participation stipend
  - $140.00 weekly meal allowance
- Up to $700.00 reimbursement in travel expenses to and from WPI.
- LEED Gold–certificated (green/sustainable housing) on-campus residence housing, paid for directly by the program

REU At A Glance






Students perform research in Artificial Intelligence, focusing on challenges in areas critical to societal impact from digital health, fake and bias information detection, to critical resource prediction.

WPI

Eligibility

- According to the National Science Foundation, to be eligible for this program at WPI, **a student must be**:
- A U.S. citizen, U.S. national, or permanent resident of the United States or a U.S. Territory/Possession. *There are NO exceptions - this is an NSF requirement.*
- Enrolled in a degree program (part-time or full-time) leading to a baccalaureate or associate degree.
  - Students who are transferring from one college or university to another and are enrolled at neither institution during the intervening summer may participate.
  - High school graduates who have been accepted at an undergraduate institution but who have not yet started their undergraduate study are also eligible to participate.
  - Students who have received their bachelor's degrees and are no longer enrolled as undergraduates are generally not eligible to participate (i.e. students should not apply if they will complete the bachelor's degree prior to Summer 2025).
- Individuals that meet these criteria, and that are interested in Data Science.
- **Everyone is encouraged to apply, including from any** racial and ethnic backgrounds, any gender, persons with disabilities, veterans, and students from all socioeconomic status communities.

WPI

Application Process

- NSF Education & Training Application (ETAP)
  - View REU Sites: https://etap.nsf.gov/search
  - DS/AI REU Site Application:

  - Applications will open January 2026
  - Visit our website for status updates/to learn more: REU Program | Worcester Polytechnic Institute

WPI

Questions?

Questions about the DS/AI REU Site?

Contact us!

datascience@wpi.edu

Center for Early Research Experiences in Functional Materials

NSF REU

Worcester Polytechnic Institute

Fall 2025

Program Overview

- New REU site at WPI since 2025
- 10-week, all expenses paid research experience
  - Tentative Date(s): Tuesday, May 25, 2026 – Saturday, August 1, 2026
- Site Leadership
  - PI Kateryna Kushnir Friedman, Co-PI Lyubov Titova.
- Advised by faculty experts and graduate student mentors
- Industry visits & professional development opportunities
- All REU MRS Boston meeting 2026, first week after Thanksgiving
- All REU Site Poster Symposium
  - Tentative Date: Thursday, August 27
- Opportunities to publish in professional journals and present at conferences

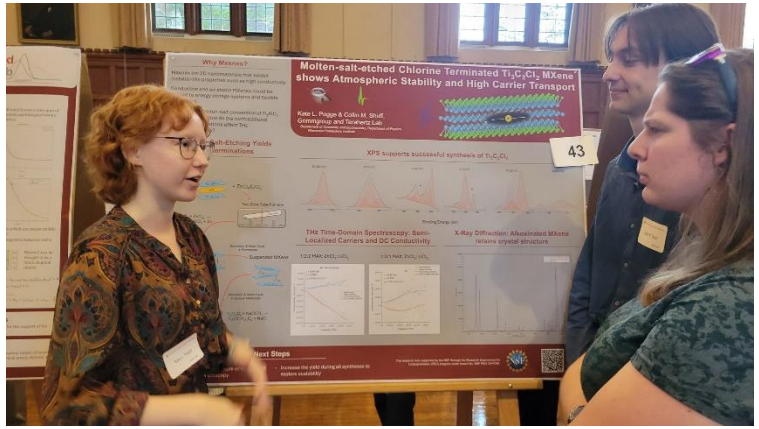
WPI

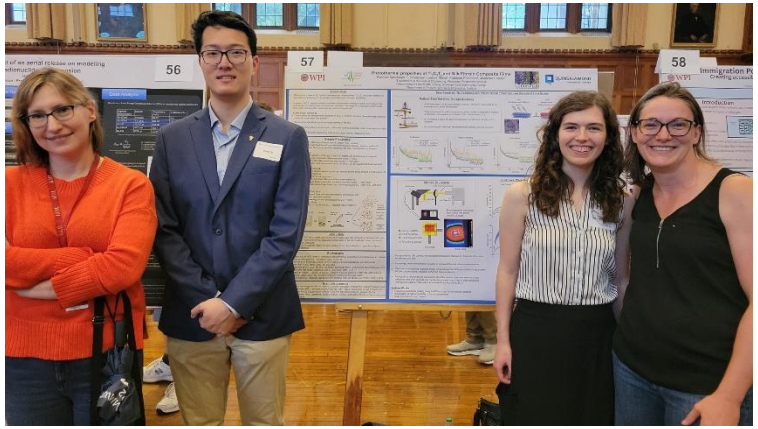
Stipends, Travel, Housing & Meals

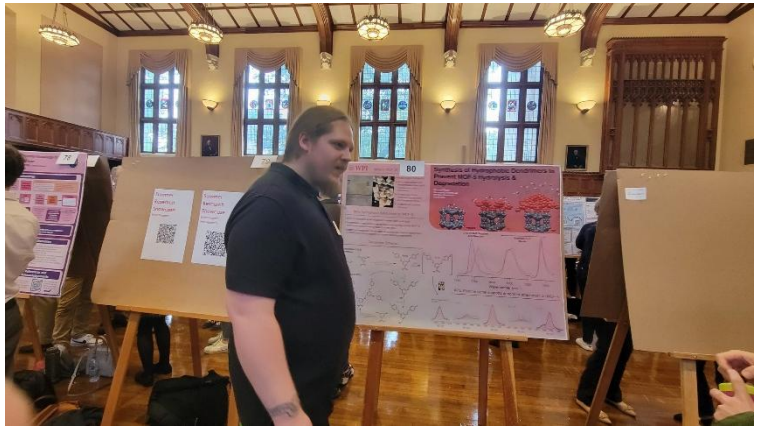
- $7000.00 stipend over the 10-week program ($700.00 per week, paid bi-weekly)
  - $700.00 weekly participation stipend
- Up to $1500.00 reimbursement in travel expenses to and from WPI, including MRS registration, transportation, hotel, food, etc.
- LEED Gold–certificated on-campus residence housing, paid for directly by the program

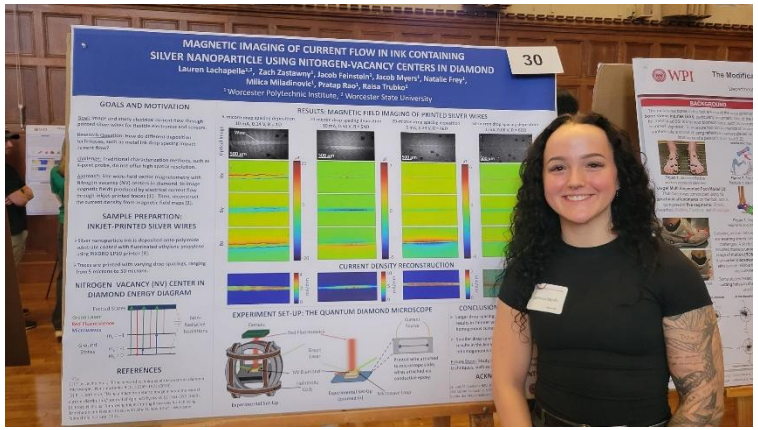
WPI

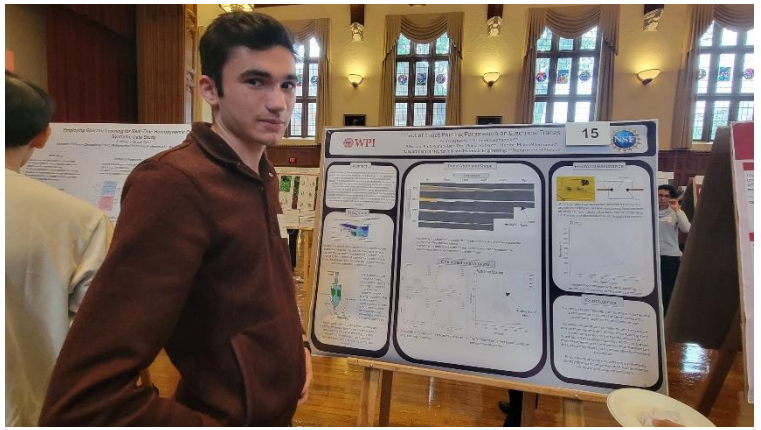
REU At A Glance



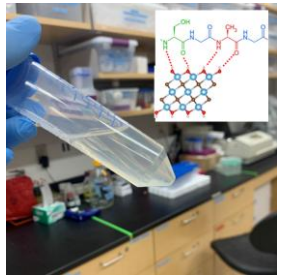








Examples of the Projects:



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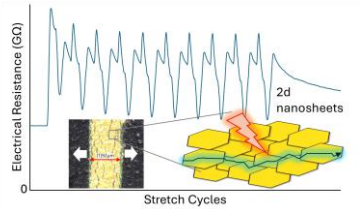
Functional nano- and bio-material composites for optical and biomedical applications



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Two-dimensional materials for flexible electronics

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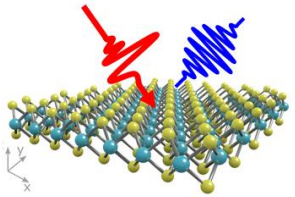
Using quantum sensing and optical tools to understand current flow in nanomaterials



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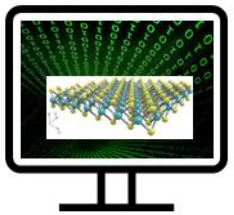
Liquid metals for applications in printed electronics: chemical synthesis and devices



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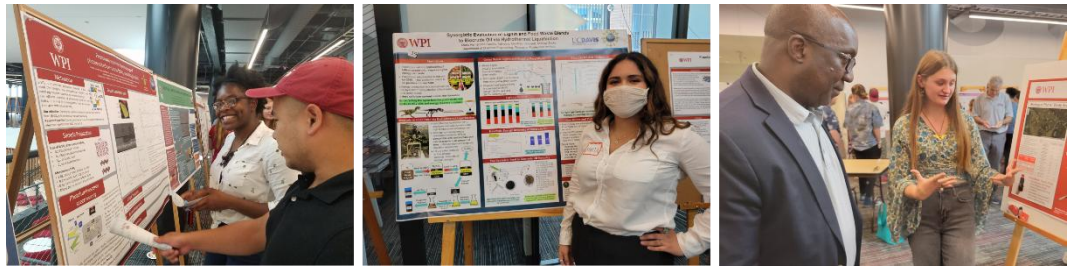
Two-dimensional nanomaterials and their physical properties (modeling and experiments)



WPI

Eligibility

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  - High school graduates who have been accepted at an undergraduate institution but who have not yet started their undergraduate study are also eligible to participate.
  - Students who have received their bachelor's degrees and are no longer enrolled as undergraduates are generally not eligible to participate (i.e. students should not apply if they will complete the bachelor's degree prior to Summer 2025).
- Individuals that meet these criteria, and that are interested in Material Science.
- **Everyone is encouraged to apply, including from any** racial and ethnic backgrounds, any gender, persons with disabilities, veterans, and students from all socioeconomic status communities.

WPI

Application Process

- NSF Education & Training Application (ETAP)
  - View REU Sites: https://etap.nsf.gov/search
  - Applications will open December 2025 / January 2026
  - Visit our website for status updates/to learn more: https://wp.wpi.edu/nsf-reu/

WPI

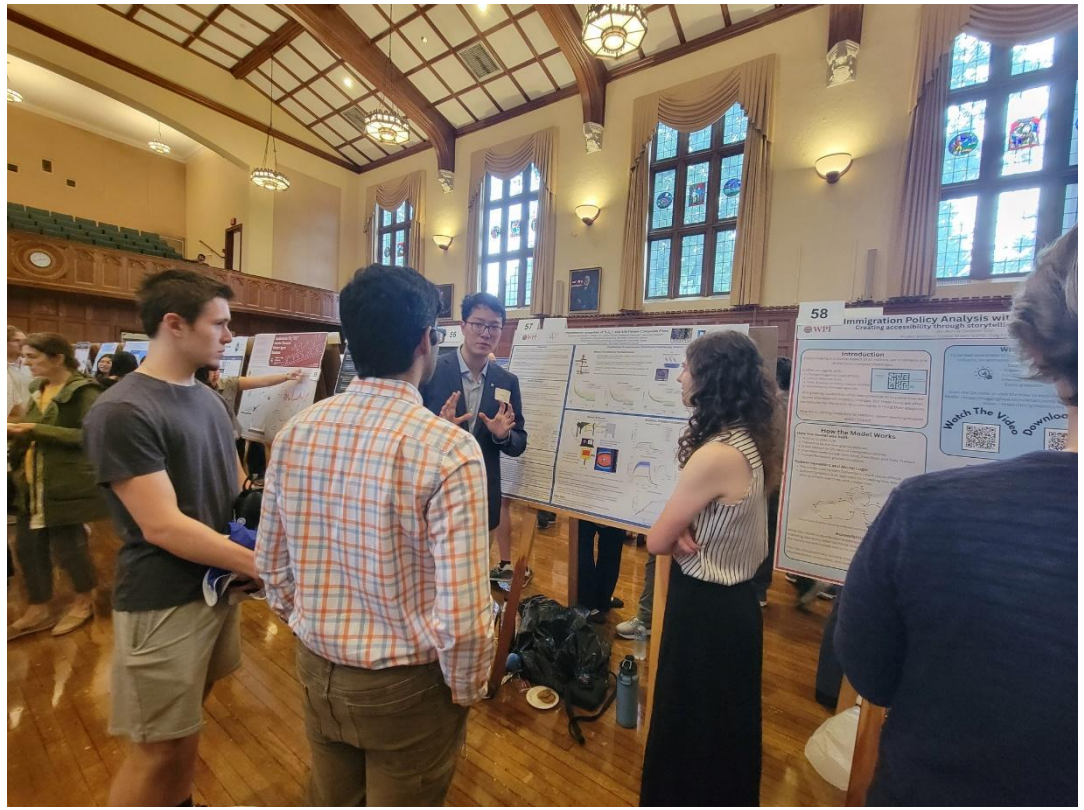
Questions?

Questions about the Functional materials REU Site?

Contact us!

kkushnir@wpi.edu

ltitova@wpi.edu



WPI

Audience Q&A

Please submit your questions in the Q&A section of your Zoom toolbar.
You can upvote questions that you would like prioritized.

GRAD$ENSE

- **GradSense is a free website to help you make good financial decisions about graduate school.**
  - Breaks down key factors like how to choose a program, how to fund your degree, what you can expect to earn compared to any debt you may take on, and tips for how to manage your money during the program
  - Includes a glossary of terms, a quiz to check your knowledge, and links to further resources

Grad school is a journey. We're here to help.

Thank you!

Please remember to complete the post-webinar survey. If you have questions about NNE, email us at nne@cgs.nche.edu.