

**CSAAPT FALL 2024 MEETING**  
**SATURDAY, OCTOBER 19, 2024**  
**JEFFERSON LAB, NEWPORT NEWS, VA**



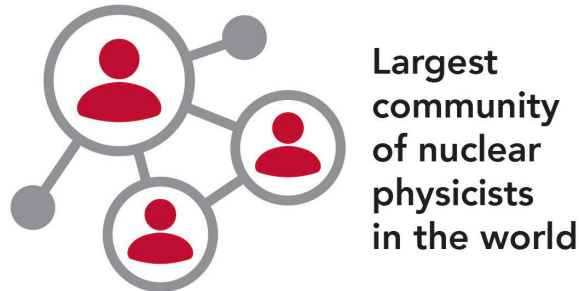
**JLab**  
SCIENCE EDUCATION

# Workforce & Community Impact Through STEM Initiatives

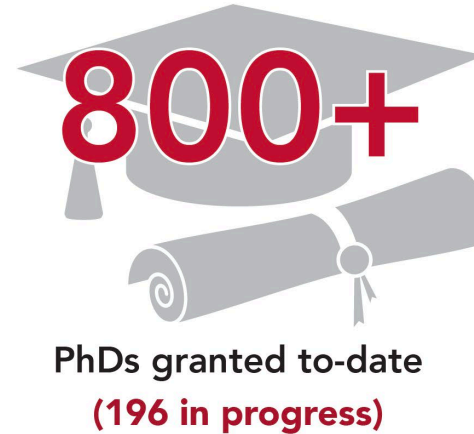
*Jalyn Dio, Science Education Administrator*  
*Lisa Surlles-Law, Science Education Manager*

# Jefferson Lab By The Numbers

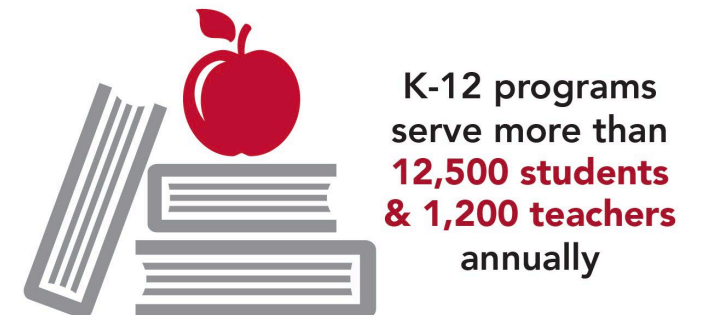
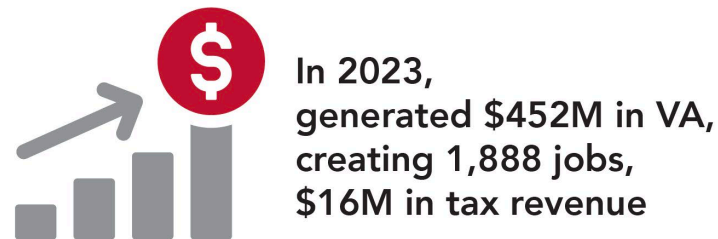
## LAB POPULATION



## EDUCATION



## OUTCOMES



# Science Education – Outreach Pathways

- Develop local and state **partnerships** to advance STEM education
- Improve the quality of K-12 instruction by **enhancing teachers' content** knowledge
- Immerse graduate, undergraduate, and high school students in a **world-class facility research environment** to prepare the nation's next generation of leaders



# Science Education Pathways

As a world-class research facility, TJNAF is a valued partner to the local, regional, and national education community. Jefferson Lab's long-term commitment to science education continues to focus on:

- increasing the number of teachers with a substantial background in math and science,
- strengthening the motivation and preparation of all students,
- addressing underrepresentation of minorities and females in STEM careers

## STEM Educator Professional Development

- JLab Science Activities for Teachers (JSAT)
  - Grades 5, 6, and 8
- Region II Annual Teacher Night

**Annually serves >940 teachers**

## K-12 Programming

- Becoming Enthusiastic About Math and Science (BEAMS)
- High School Summer Honors Program (HSSHP)
- Summer Residential Governor's School (SRGS) in Engineering
- Mentorship Program

**Annually serves >13,000 students**

## Undergraduate Programming

- Science Undergraduate Laboratory Internship (SULI)
- Research Experience for Undergraduates (REU)
- Community College Internship (CCI)
- Mexican Physical Society (MPS)
- Undergraduate Physics Research (UPR) Program
- Minority/Female Undergraduate Research Assistantships (M/FURA)

**Supports >55 undergraduate students/year**

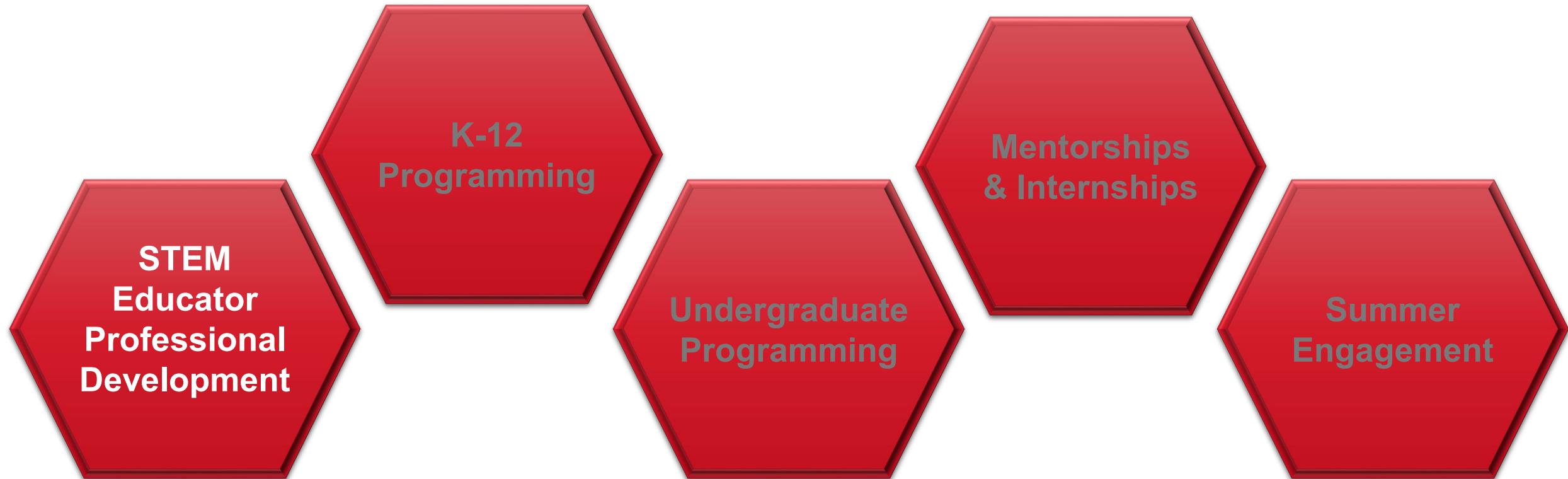
## Graduate Research

- Office of Science Graduate Student Research (SCGSR) Program

**Supports >100 graduate students/year**

# Science Education Pathways

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# STEM Educator Professional Development

*JSAT places JLab as the community leader in providing needed professional development for local teachers through SOL-based content and STEM applications during the school year.*



**APPLY HERE**



<https://education.jlab.org/jsat/>

Jefferson Lab

- JLab Science Activities for Teachers (JSAT)
  - Grades 5, 6, and 8
- Region II Annual Teacher Night – Teachers from the JSAT (Jefferson Lab Science Activities for Teachers) program share science-themed classroom activities, focused on upper elementary and middle school students.
- Professional development participants and attendees

***Annually serves >940 teachers, impacting 28K+ students***

# JLab Science Activities for Teachers (JSAT)

***APPLY HERE***



***<https://education.jlab.org/jsat/>***

- Jefferson Lab Science Associates **Teacher Development Initiative**
- 5<sup>th</sup>, 6<sup>th</sup> & 8<sup>th</sup> grade cohorts
- Meet twice monthly
- Receive classroom equipment and supplies to conduct activities
- 48 teacher education recertification points
- Participation stipend



# STEM Educator Professional Development

*Visiting Faculty Program (VFP) is designed for full-time faculty members from institutions historically marginalized in STEM research.*

- Enhance research competitiveness
- Innovative STEM learning that both professor and students can participate in a funded collaborative experience at a DOE lab
- Offered over the summer for 10 weeks or during the fall or spring terms, with financial support for a teaching buyout



***First participant, Summer 2024***

***APPLY HERE***



***<https://science.osti.gov/wdts/vfp>***



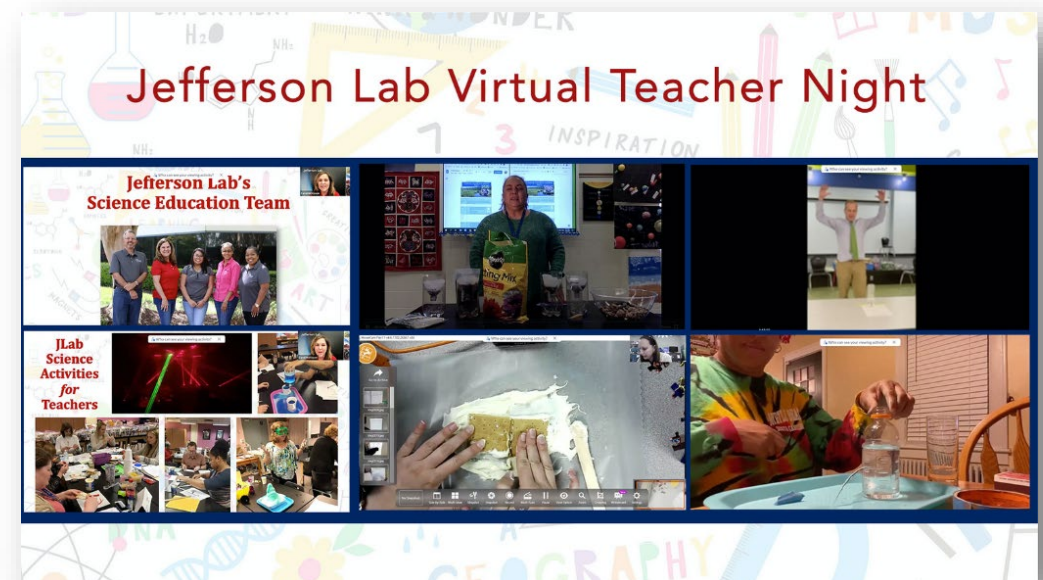
# Region II Teacher Night

*Teachers from the JSAT (Jefferson Lab Science Activities for Teachers) program share science-themed classroom activities, focused on upper elementary and middle school students.*

**REGISTER HERE:**

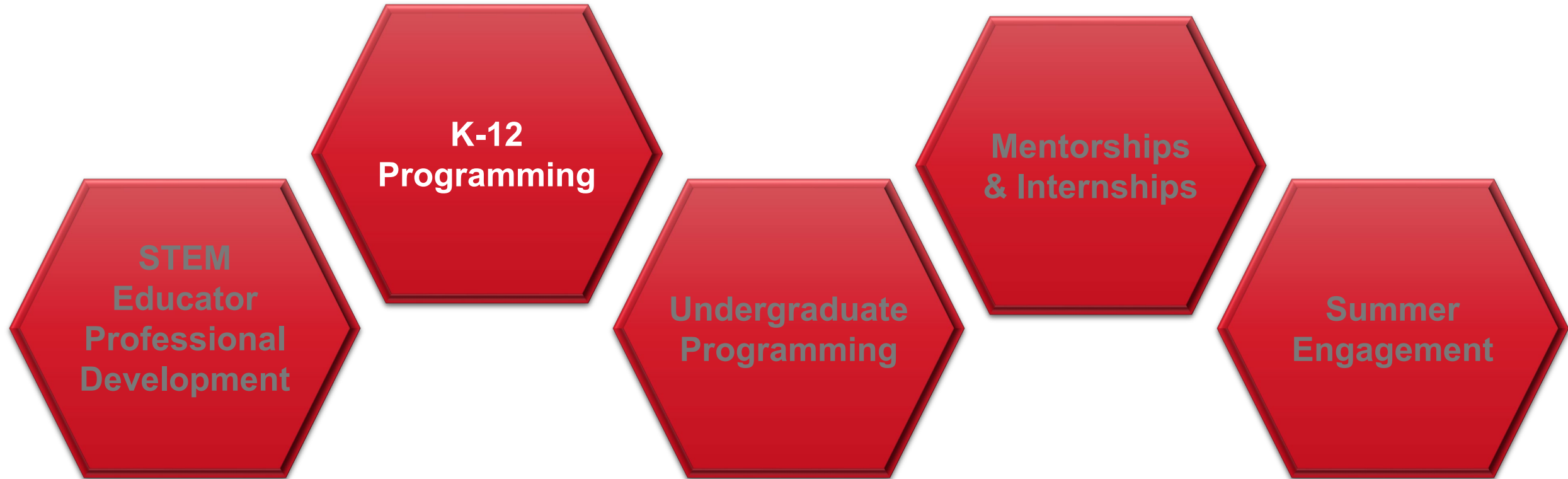


*~ April 3<sup>rd</sup>, 2025 ~*



# Science Education Pathways

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# Elementary and Middle School Programming

*Opportunities for students at surrounding schools to engage with JLab, the world of STEM and the career staff that supports it.*

- School classroom activity visits
- Science Fair judges
- Career Fairs
- STEM Days



***Annually serves >13,000 students***

# Middle and High School Virginia Regional Science Bowl

TJNAF is a regional host for the U.S. Department of Energy (DOE) National Science Bowl® middle and high school academic competition.

<https://science.osti.gov/wdts/nsb>

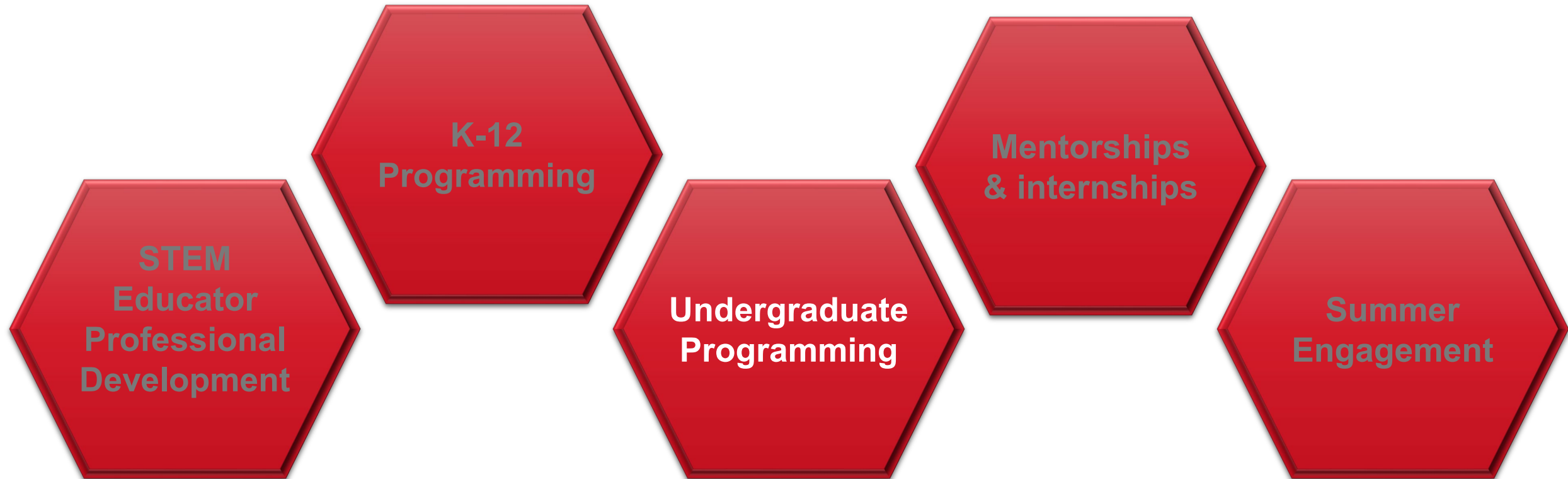


High School – February  
Middle School – March

*Registration begins Oct 1*



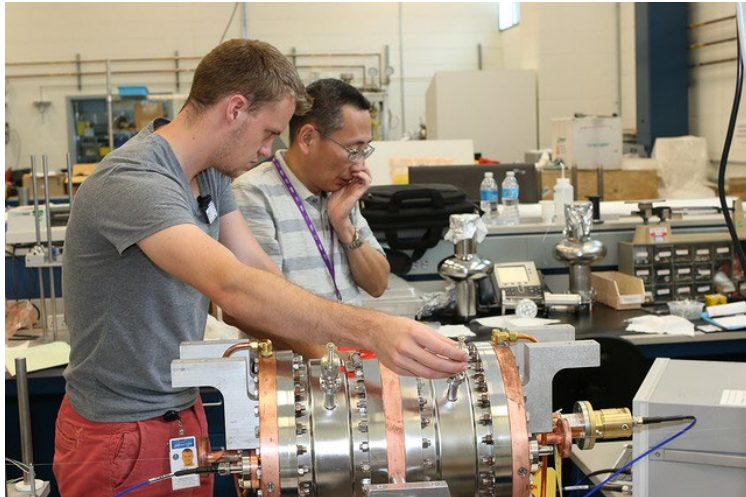
# Science Education Pathways



# Undergraduate Programming

- Science Undergraduate Laboratory Internship (SULI)
- Community College Internship (CCI)
- Undergraduate Physics Research (UPR) Program
- Minority/Female Undergraduate Research Assistantships (M/FURA)

***Supports ~50 undergraduate students annually***



# Minority/Female Undergraduate Research Assistantships (M/FURA)

Assistantships for minority or female students to work on projects, with their nominating professors, that are part of or directly related to the TJNAF's research program.



[https://www.jlab.org/human\\_resources/MFURA](https://www.jlab.org/human_resources/MFURA)

**MINORITY OR FEMALE**  
**JSA Undergraduate Research Assistantship**  
*Accelerate your Physics Knowledge with us!*

Jefferson Lab is offering a research assistantship for three minority or female undergraduate students from an accredited university. This assistantship offers the students an opportunity to work on science and engineering projects related to the lab's research. Jefferson Science Associates will provide funds to support the students at the university during the 2024 - 2025 academic year.

- JSA will provide a \$6,000 stipend to the selected student's university to pay the students through its student employment program. The assistantship will not provide support for tuition, fees, support of senior thesis projects or other such expenses.
- Additionally, up to \$1,500 is available for the selected students to visit Jefferson Lab or to attend a related research workshop.
- Students Must Be:
  - Enrolled fulltime during the 2024-2025 academic year
  - Majoring in Physics
  - Nominated by a faculty member for Assistantship
- There will be three selected students that will work at the university under the guidance of a university faculty member and must submit a project report at the end of the assistantship.

**APPLICATIONS GO LIVE: February 15, 2024**

Contact: Rhonda Bell [rbell@jlab.org](mailto:rbell@jlab.org)  
Program Lead: Lisa Surles-Law

**How to apply:**

Nominations must be submitted by the faculty sponsor before the student may apply. After the faculty member has nominated a student, the student will be sent an email with the link to the form to be completed.

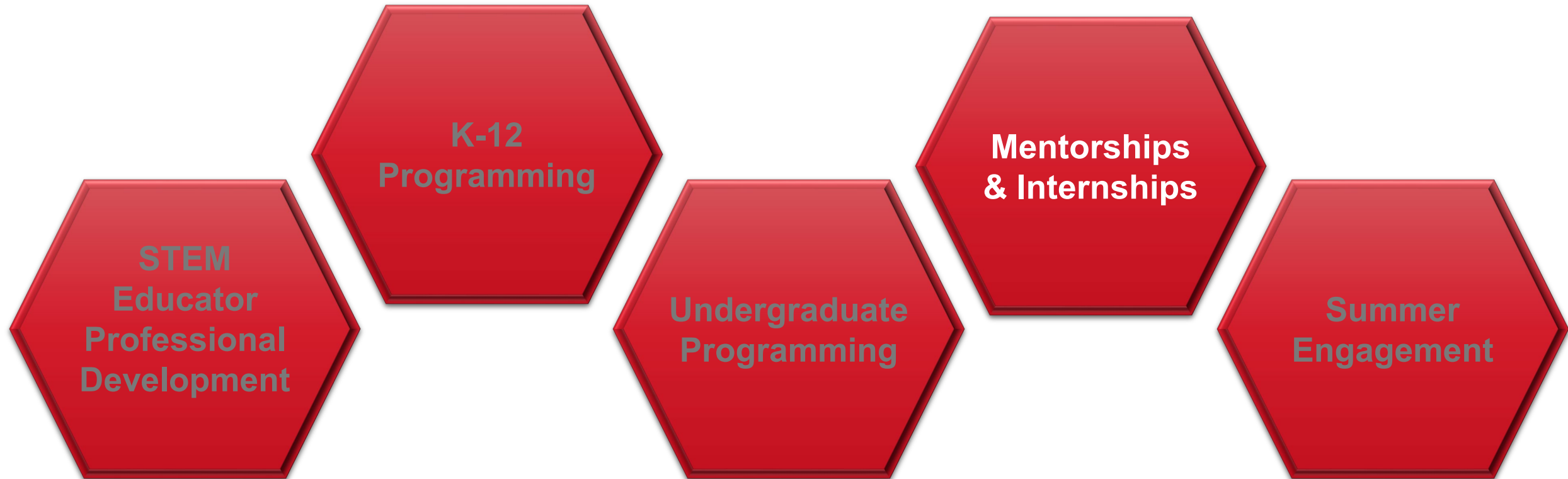
Faculty Nominations due by: **MARCH 31, 2024**  
Student Component due by: **APRIL 15, 2024**

Faculty sponsors, visit this link to nominate a student:  
[https://www.jlab.org/human\\_resources/MFURA](https://www.jlab.org/human_resources/MFURA)

This assistantship is supported by the JSA Initiatives Fund Program, which supports projects, initiatives, and activities that further the scientific outreach, and promote the science, education and technology missions of Jefferson Lab in ways that complement its basic and applied research focus.

# Science Education Pathways

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# Mentorships and Internships

*TJNAF staff and users encourage and prepare high school and undergraduate students to pursue advanced degrees in experimental/theoretical physics and accelerator science.*

## Programs by the numbers:

- 26 Science Undergraduate Laboratory Internship (SULI) students for FY24
- 10 NSF-Funded Research Experience for Undergraduates (REU) students via Old Dominion University for Summer 2024
- 2 Community College Internship (CCI) students for FY24
- 12 High School Summer Honors Program (HSSHP) students for Summer 2024
- 11 Summer Residential Governor's School (SRGS) in Engineering students for Summer 2024
- 10 High School Mentorship students for FY24
- 3 MFURA Assistantship Positions
- 2 CNU Captains Program students



**TJNAF supports ~55 undergraduate students and ~40 high school students annually.**

# Science Education Website



[HOME](#) [TEACHERS](#) [STUDENTS](#) [GAMES](#) [VIDEOS](#) [VA SOL](#) [PROGRAMS](#)

Search...



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#### SCIENCE AT HOME EXPERIMENTS:

[Cold Stuff](#)  
[Electromagnets](#)  
[Mystery Materials](#)  
[UV Detectives](#)

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#### QUICK LINKS:

[All About Atoms](#)  
[Periodic Table of Elements](#)  
[SOL Practice Tests](#)  
[Who Wants to Win...](#)  
[Questions and Answers](#)  
[Science Vocabulary Hangman](#)  
[Frostbite Theater](#)  
[Surprise me!](#)

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# Science Education Website Resources

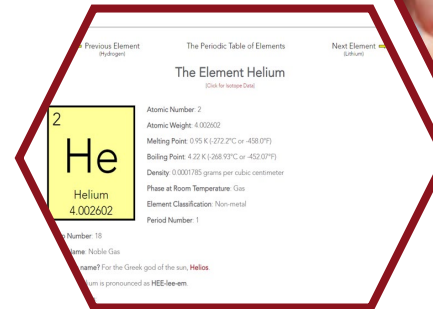
*Educational resources for students and teachers: interactive periodic table of elements, engaging “Science at Home!” video series, Frostbite Theater video series, STEM virtual games, and SOL Review Practice Tests*

## On-line Games and Puzzles

(Show Descriptions)

Element Balancing Game  
Element Concentration  
Element Crossword Puzzles  
Element Flash Cards  
Element Hangman  
Element Matching Game  
Element Math Game  
Element Word Scramble  
Jefferson Lab Coloring Book  
Looking for the Top Quark  
Mystery Math  
The Nim Number Game

Place Value Game  
Reading Comprehension  
Science Crossword Puzzles  
Science Vocabulary Hangman  
Scrambled Science Words  
SpeedMath Deluxe  
SpeedMath - Add and Subtract  
SpeedMath - Multiply and Divide  
SpeedMath - Inequalities  
VA SOL Practice Tests  
Who Wants to Win \$1,000,000?



*Interactive Periodic Table of Elements*

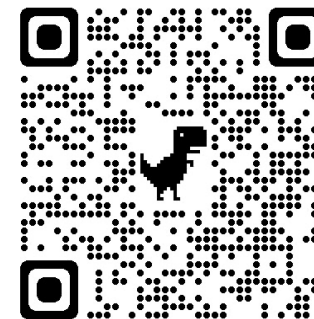


*Science at Home!  
UV Detectives*



*Fun with Static Electricity*

<https://education.jlab.org>



# QUESTIONS?



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