U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

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Innovative Nuclear Research Integration Office Overview

ANS Career Fair

September 22-23, 2020

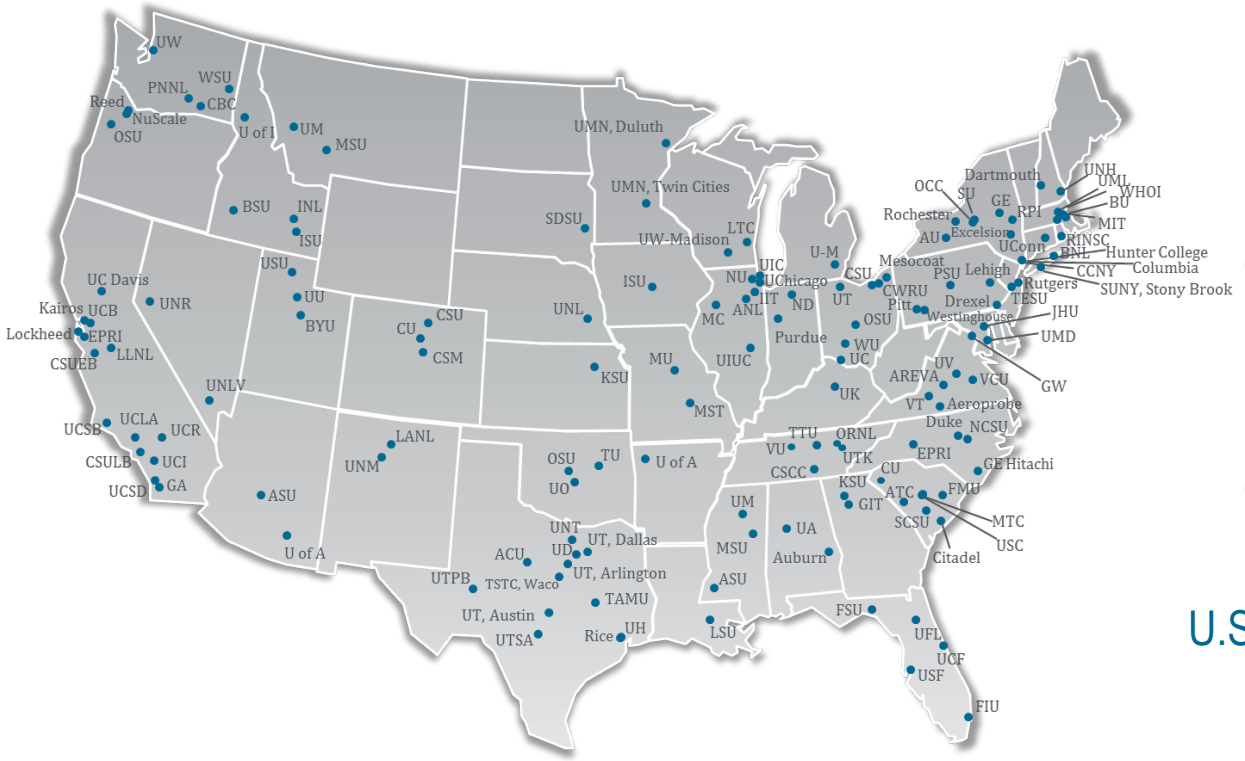
CINR and Integrated University Program

- **The Consolidated Innovative Nuclear Research (CINR) and the Integrated University Program (IUP) have a well established competitive process for awarding R&D, infrastructure and scholarship/fellowship support.**
  - FY19 Scholarship & Fellowship awards: 42 scholarships and 34 fellowships, totaling $5M
  - FY20 NEUP awards: 58 R&D, totaling $41.1M; 21 Infrastructure, totaling $5.7M; 3 IRPs, totaling $10.8M
  - FY20 NEET awards: 6 R&D, totaling $6M; 7 R&D with NSUF access, totaling $3.4M

$802M
Total Funding
FY09 – FY20

1,883
Awards Issued

42
States & D.C.



7
National Laboratories

11
Industry/Utilities

126
U.S. Universities & Colleges

Innovative Nuclear Research Integration Office (INR-IO) Overview

- The INR-IO manages the application and review processes for DOE Office of Nuclear Energy's competitively funded research programs which include:
  - **Nuclear Energy University Program (NEUP)-** R&D and infrastructure funding for U.S. colleges and universities.
    - Research & Development
    - Integrated Research Projects
    - Reactor Upgrades and General Scientific Infrastructure
  - **Nuclear Energy Enabling Technologies Cross-cutting Technology Development Program (NEET-CTD)**
  - **Nuclear Science User Facilities (NSUF)-** Irradiation and PIE calls
  - **Integrated University Program (IUP)-** Undergraduate Scholarship & Graduate Fellowship Program
  - **U.S. Industry Opportunities for Advanced Nuclear Technology Development**
  - DOE-NE related **Small Business Innovation in Research (SBIR)** topic areas

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  - **Integrated University Program (IUP)-** Undergraduate Scholarship & Graduate Fellowship Program
  - **U.S. Industry Opportunities for Advanced Nuclear Technology Development**
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CINR FOA

FY 2021 CINR & Infrastructure FOA Objectives and Priorities

- DOE NE mission is to advance U.S. nuclear power in order to meet the nation's energy needs by:

  1) Enhancing the long-term viability and competitiveness of the existing U.S. reactor fleet;
  2) Developing an advanced reactor pipeline, and,
  3) Implementing and maintaining the national strategic fuel cycle and supply chain infrastructure.

- All applications submitted under this FOA will need to demonstrate a strong tie to at least one of these three priorities.

- NE conducts crosscutting nuclear energy research and development (R&D) and associated infrastructure support activities to develop innovative technologies that offer the promise of dramatically improved performance for its mission needs as stated above, while maximizing the impact of DOE resources.

CINR FOA Research Elements

- **Program Supporting**
  - supports NE programs
  - defined by, and focused on, the statement of objectives developed by responsible programs

- **Mission Supporting**
  - must support NE mission
  - includes research in fields or disciplines of nuclear science and engineering that are relevant to NE's mission but may not fully align with the specific initiatives and programs as described in Program Supporting objectives

CINR FOA Organization

University-led R&D (NEUP and NSUF workscopes):

- Appendix A
  - Program Supporting
  - Mission Supporting

University-, National Laboratory-, or Industry-led R&D (NEET, NSUF workscopes):

- Appendix B
  - Program Supporting
  - Industry may only lead on NSUF workscopes

FY 2021 CINR and Infrastructure FOA Highlights

- **Funding Mechanism**
  - Universities: Cooperative Agreements issued by DOE
  - National laboratories: Work Authorizations managed by DOE
  - Industry: Cooperative Agreements issued by DOE
  - Nuclear Science User Facilities (NSUF) Access: NSUF User Agreement
- **Collaborative Opportunity**
  - NSUF (requires signed user agreement)
    - applications for CINR R&D support and NSUF access
    - applications for NSUF access only
- **Eligibility Requirements**
  - U.S. based universities and industry, national laboratories (FFRDCs)
  - Use the FOA to check your eligibility to apply
- **Official FOAs (CINR FOA: DE-FOA-0002361, Infrastructure FOA: DE-FOA-0002362)** at http://www.grants.gov
- **Apply through** http://www.NEUP.gov

University-led R&D: Appendix A

- **Award Size**
  - Program Supporting: up to $800,000
  - Mission Supporting: up to $400,000
- **Period of Performance**
  - up to three years
- **Eligibility**
  - only universities are eligible to lead
  - universities, national laboratories, and industry are eligible to collaborate
- **Estimated Funding Level**
  - approximately $40 million, totaling approximately 40 awards

University-, National Laboratory-, or Industry-led: Appendix B

- **Award Size**
  - Program Supporting NEET: up to $1,000,000
  - NSUF workscopes: $500,000 for R&D request, up to $4 M for irradiation/PIE, $1.5 M for irradiation, or $750,000 for beamline or PIE access request
- **Period of Performance**
  - Up to 3 yrs; up to 7 if irradiation and PIE are proposed in NSUF workscopes
- **Eligibility**
  - NSUF-1 and NSUF-2 applications are open to universities, national laboratories, and industry to lead or collaborate except for NSUF-2.1, which can only be led by industry.
- **Estimated number of awards**
  - Approximately $3 million in NEET and NEET supported workscopes, with up to $4 million for NSUF Access (totaling approximately 7 awards)

Tools for Understanding the FOA

- CINR FOA: https://neup.inl.gov/SiteAssets/FY2021_Documents/NEGTN02-230407-v8-FY_2021_CINR_FOA_FINAL.pdf
- Scientific Infrastructure FOA: https://neup.inl.gov/SiteAssets/FY2021_Documents/NEGTN02-230410-v3-FY_2021_CSIS_INFRASTRUCTURE_FOA_FINAL.pdf
- R&D Federal/Technical Points of Contact: https://neup.inl.gov/SitePages/FY21_RD_Technical%20_Program_Contacts.aspx
- FY 2021 Webinar Presentations: https://neup.inl.gov/SitePages/FY21_Webinar_Presentations.aspx

FY 2021 Important Dates

- FOAs release: Sept 3, 2020
- NSUF LOI's: Sept 16, 2020
- R&D/NSUF pre-applications: Sept 30, 2020
- NSUF preliminary SOW: Nov 12, 2020
- Infrastructure applications: Nov. 12, 2020
- Full application invitations: Dec 2020
- NSUF final SOW: Jan 22, 2021
- Full R&D applications: Feb 11, 2021

www.neup.gov

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Integrated University Program

Scholarships & Fellowships

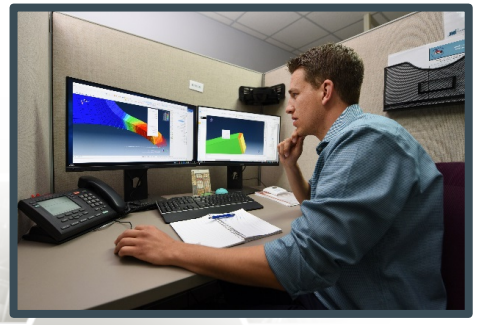
Julie Jacobson
Integrated University Program (IUP)
September 22, 2020

Integrated University Program: Overview

- Established in 2009 through the Omnibus Appropriations Act
- Joint effort among the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC), and the National Nuclear Security Administration (NNSA) to provide support for university research and development, faculty, and students in areas critical to maintaining the discipline of nuclear science and engineering
- Each agency independently manages its own portion of the program
  - DOE-NE: Scholarships and fellowships
  - NRC: Faculty development, scholarships and fellowships
  - NNSA: Multi-university consortia

DOE IUP Objectives

- Attract the brightest students to the nuclear professions by providing undergraduate level scholarships and graduate level fellowships to students pursuing a nuclear energy-related degree
  - Enhance the research and development capabilities of U.S. universities
  - Build the next generation nuclear engineering workforce, fulfilling the national demand for highly trained scientists and engineers to work in NS&E areas



DOE IUP Funding Opportunities

- Scholarship and Fellowship Requests for Applications (RFAs)
  - Undergraduate and graduate students from two and four-year Institutions of Higher Education (IHEs) pursuing a discipline related to nuclear energy
  - Opportunities are promoted through a mailing list and website posting, as well as at various conferences and university visits
  - Up to 70 scholarships and 30 fellowships depending on funding level (~$5M)
  - Current Opportunity opens in Fall of 2020 and applications are due January 28, 2021.
- University Funding Opportunity Announcement (FOA)
  - For universities and colleges to establish their ability to accept student scholarship and fellowship funds through IUP and manage the award on behalf of DOE-NE
  - A new University FOA (#DE-FOA-0002265) will be issued this fall and current or new universities must apply to participate in this program

IUP Integrated University Program
U.S. Department of Energy

Scholarships and Fellowships

- **Award Amounts:**
  - Scholarship – $7,500 one-year award
  - Fellowship – $161,000 over three years

- **RFA General Requirements:**
  - U.S. citizen or legal permanent resident
  - Beyond first year in college (scholarships only)
  - In first year or starting second year in graduate school (fellowships)
  - Enrolled in an IUP-approved college or university determined by the FOA application
  - Field of study of interest to DOE-NE
  - Minimum 3.5 GPA at both undergraduate and graduate levels (fellowships)
  - Minimum 3.25 GPA (scholarships)

Fellowships: Internships and Required Reporting

Internship

- Fellows are required to participate in a 10-week minimum internship at DOE, a DOE national laboratory, or a facility designated and approved by DOE-NE.
- An additional $5,000 allowance is provided to offset the costs of travel and housing.
- Students work with their advisor to identify an appropriate internship.
- Fellows submit a report at the end of their internship.

Reporting

- Fellows submit an annual report at the end of each academic year, as well as a final report at the conclusion of their award.
  - Reports include accomplishments for the year, plans for the following year, and a list of presentations/papers/patents.
  - Concluding fellows also provide annual email update on career progress for up to 5 years after their award ends.

Review Process

When evaluating applications, reviewers addressed the following Merit Review Criteria:

- How does the student's chosen course of study and career goals align to the DOE-NE mission?
- How well qualified is the student to complete the proposed course of study?
- How does the student's previous and proposed research align to the DOE-NE mission? (Fellowships)

Scholarships:

- Personal Career Goal Essay
- Letters of Reference (3)
- Official Academic Transcripts
- ACT/SAT scores

Fellowships:

- Personal Career Goal Essay
- Proposed Graduate Research Essay
- Letters of Reference (3)
- Official Academic Transcripts

Tracking IUP Fellows

27 are still completing degrees

2 are employed by a local school district

7 are working at universities

12 have positions with the federal government

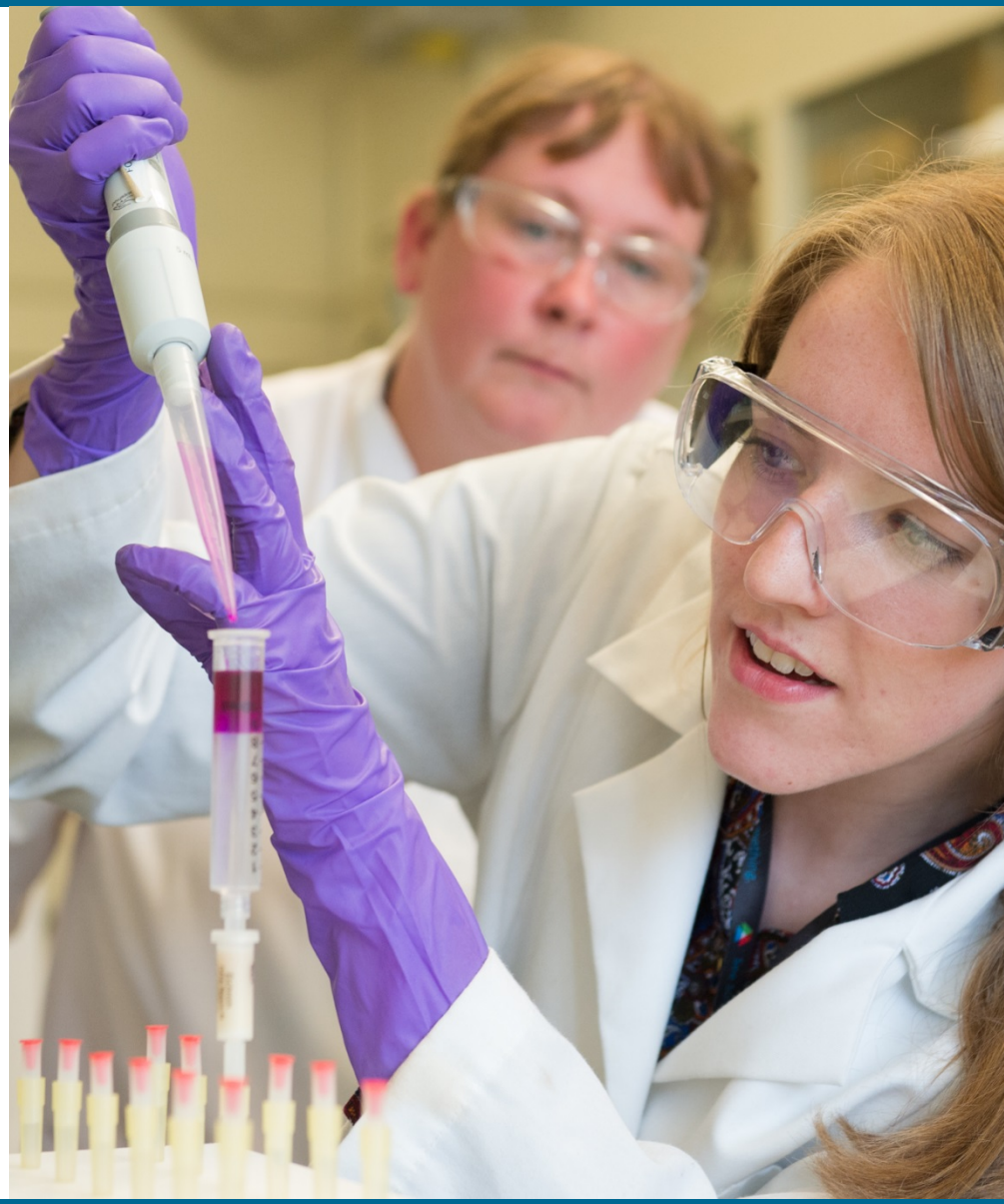
50 are working in industry

41 work at national laboratories

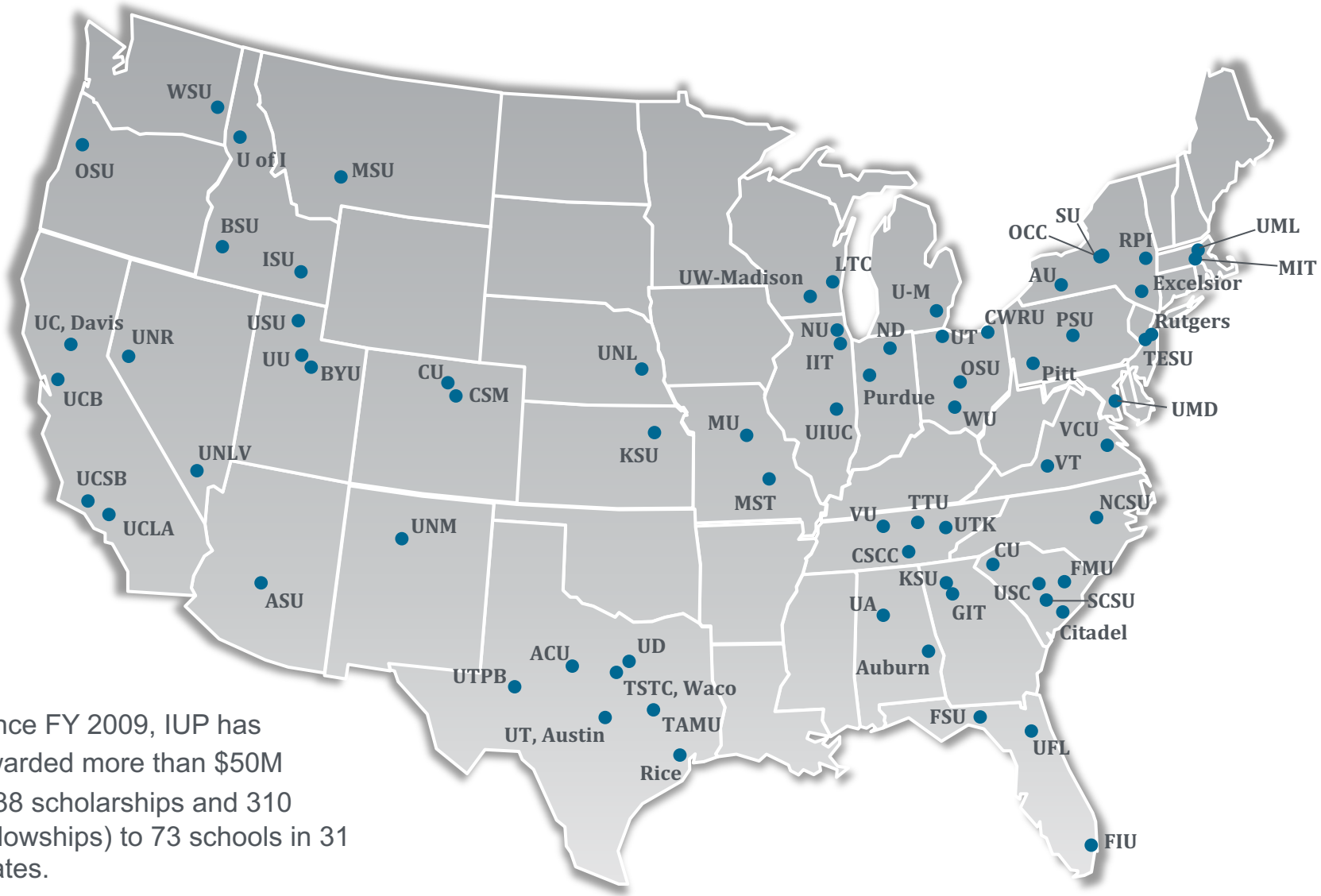
17 are post-docs

4 have left the field

1 is actively seeking employment



IUP Award Recipients



Since FY 2009, IUP has awarded more than $50M (538 scholarships and 310 fellowships) to 73 schools in 31 states.

Contact Information

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Questions regarding the IUP Program:

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Questions regarding the University FOA:

Andrew Ford
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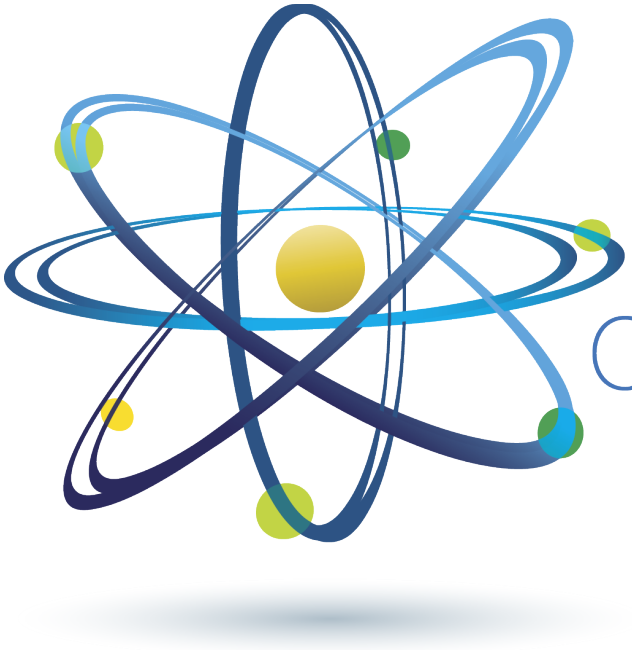
fordaj@id.doe.gov

Please visit www.NEUP.gov for more information and to submit applications.

Questions?



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