Developing and enabling innovative, collaboration-based programs

INL University Partnerships

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NUC Annual Meeting
Idaho Falls, ID • August 14-16, 2017
University Partnerships Hosted 663 People from 118 U.S. and 14 International Institutions from 12 Countries in FY 2017 (YTD)
FY2017 NUC...By the Numbers

- 7/23 Joint Appointments
  - MIT – 1, outgoing
  - NCSU - 1
  - OSU - 1
  - TOSU – 1

- 1/37 Postdoctoral Researchers
  - TOSU – 1

- 1/2 Distinguished Postdoctoral Researchers
  - OSU - 1

- 1/225 Employee Education
  - OSU - 1

- 6/11 INL Graduate Fellows (54%) – inaugural year
  - NCSU - 2
  - OSU - 2
  - TOSU - 2

- 37/337 Interns (11%)
  - 153 NUC applicants in 1,900+ pool (8%)
    - MIT - 4
    - NCSU - 16
    - OSU - 7
    - TOSU - 4
    - UNM - 6
Distinct Programs Build the Future Talent Pipeline

Developing and enabling innovative, collaboration-based programs to support INL’s strategic objectives

Students
- Interns
- Co-Op
- Practicums
- INL Graduate Fellowships (New)

Researchers
- Postdoctoral Researchers
- Joint Appointments
- International Researchers
- Academic Visitors
- Faculty Researchers
- Teaming Teachers

Workforce Development
- University-related: YourFIT
- ESTEC
- UI Fire Protection
- EITC RadCon
- BSU/ISU/UI Cyber
- Community College Grant
- My Amazing Future (150 8th grade girls)

Internal Staff Development
- Employee Education
- Seminar Series: Mentoring Workshops
- Generations in the Workplace
Internships Program

• 1,900+ applicants in FY17
• Diverse internship positions (high school, undergraduate, graduate level and Faculty Research Appointments)
• Internship opportunities enable collaboration with experienced scientists and engineers to develop innovative solutions for challenging, real-world projects
• 80% of the intern’s time is spent with their mentor working on their project and getting exposure to the work environment
• 20% of the time is spent participating in enrichment activities (e.g. facility tours, internship breakfast)
New in 2017 – Graduate Fellowship Program

Designed to identify and recruit exceptional talent in research areas aligned with INL’s strategic agenda; thereby advancing INL’s core capabilities and building leadership strength in mission delivery.

INL Graduate Fellow
- Provided mentorship by both INL and university through graduate studies
- Provided “stipend” funding throughout Fellowship

University
- Leads recruiting efforts
- Responsible for tuition and fees (and if possible a stipend) during initial 1-3 years of graduate studies

INL
- Offers a paid 1-3 month internship during first years of graduate school
- Provides ~$60k/year during last two years of PhD, while at INL performing research
- Covers last two years of tuition & fees

Key is identifying research that is of mutual interest to INL and the university.
Postdoctoral Appointee Program

- Supports the research directorates in recruiting, selecting and hiring the next generation of independent researchers

This program develops postdoctoral researchers supporting the establishment of INL as the pre-eminent nuclear energy laboratory...

...and as a leader in the development of unique national and homeland security capabilities and sustainable energy systems.

FY13 = 8
FY14 = 25
FY15 = 32
FY16 = 41
FY17 YTD = ~50

Postdoctoral research appointees are provided a mentored research experience and the highest quality of training to prepare the program participant for transition to research independence.
Distinguished Postdoctoral Program

- Independent, unrestricted choice of research focus and direction within INL’s Research Directorates’ mission
- Active mentoring with recognized technical leaders and SLT members
- Access to unique capabilities, facilities, equipment, and instrumentation
- Competitive salary and benefit package (as compared to national average for Distinguished Postdocs), including health/dental insurance and relocation allowance
- Potential for discretionary research funds
- Research-related travel and conference funds
- Access and interaction with INL senior executives
- Two year assignment term with a possible third year extension
New in 2017 - Deslende de Boisblanc Distinguished Postdoctoral Appointees – Inaugural Candidates

- Thomas V. Holschuh II
  - Oregon State University, Nuclear Engineering
  - INL Start Date: August 2017
  - INL Mentor: Dan Wachs
  - INL Research Plan: “Simple method for more accurate determination of reactor kinetics parameters of TREAT”

- Abdalla Abou Jaoude
  - Georgia Institute of Technology, Nuclear & Radiological Engineering
  - INL Start Date: January 2018
  - INL Mentor: Gilles Youinou
Joint Appointment Program (Seconding)

- Focus on research collaboration
- Actively engage universities with INL research and development mission and strategic objectives
- Utilize universities’ strength in scientific inquiry, critical thinking, innovation and creativity
- Enable recognized, meaningful and productive engagement of university capabilities

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<th>Master Blanket Agreements (18):</th>
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<tr>
<td>Boise State University - CAES</td>
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<tr>
<td>Cal State Long Beach</td>
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<td>Idaho State University - CAES</td>
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<td>Indiana University</td>
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<td>MIT (outgoing) - NUC</td>
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<td>North Carolina State University - NUC</td>
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<td>The Ohio State University - NUC</td>
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<td>Oregon State University - NUC</td>
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Eight under negotiation: Colorado School of Mines, Georgia Tech, James Madison, SRI, University of Michigan, University of Nebraska, University of New Mexico – NUC and University of Texas- San Antonio
Employee Education

• Strengthen the workforce

• Overview
  – ~$3M investment/year
  – Open to all current “regular” employees
  – Enables resources for community

• Advance the missions of INL
  – Options include
    • Degree Seeking
    • Continuing Education Courses
    • Licenses and Certifications Courses
International Researchers

- INL is a Department of Energy Exchange Visitor Program Participant

- Purpose is to provide foreign nationals with opportunities to participate in educational and cultural exchanges in the United States and return home to share their experiences.

- The program currently sponsors exchange visitors on J-1 (or B-1) Visas in the categories of:
  - Government Visitor
  - Specialists
  - Short-Term Scholars
  - Research Scholars

- The program is of critical value to INL scientific community. Over the past several years, this program has enabled INL to bring foreign national researchers and scientists to the U.S.
Academic Visitors

• Promotes an interactive culture between university staff, research personnel and INL research organizations.

• Mechanism to provide badging and/or security plans to allow university personnel, with no existing funding or contracts with INL, to have access to INL facilities, as needed to support identified scope.

• Academic visitors can participate in a variety of activities including, but not limited to:
  – Guest Lectures
  – Collaborating with INL researchers
  – Collaborating with INL researchers on projects funded jointly by the university and INL
  – Providing educational opportunities to INL staff
  – Mentoring INL staff on new technology or academic research
  – Discussing topics of mutual interest
University Workforce Development

- INL is leading regional and national efforts to ensure a new generation of technicians and engineering technologists are trained to fill positions vacated by a retiring energy workforce. The need for highly-trained and qualified maintenance technicians and operations staff is especially acute.

- INL’s Energy Workforce Initiative is addressing this need by helping to build technical programs and academic and industrial partnerships that will prepare students to enter the energy industry.

- Invest about ~$300k each year

- Examples:
  - ESTEC – variety of technicians
  - EITC transition to a Community College (CEI)
  - EITC – Radcon program
  - UI – Fire Protection Certificate
  - Practicums
  - Leveraging and building bridges through partnership with Economic Development, Community Giving, HRI&D and STEM K-12
Partnering for STEM

• My Amazing Future
https://www.youtube.com/watch?v=Hgp35Z0cXRc&feature=youtu.be

• Your Future in Technology

• Team INL STEMazing!
National University Consortium - Response to 2016 S&T Committee Recommendations

• Recommendations: “Establish common understanding of expectations” & “Relationship based on LDRD is not sustainable – look beyond”
  – Meetings were held throughout the year including a closed session at the NUC annual meeting to discuss the changes in direction and expectations
  – NUC partners are focusing on collaborating with INL to increase external funding and joint publications
  – As part of the annual meeting, breakout sessions were held to discuss potential partnerships
  – NUCs are seeking INL input into hiring decisions
  – Larger potential collaborations were solicited and several ideas were developed. Examples include
    • NUC representatives are leading the academic efforts on the Versatile Fast Neutron Source project
    • Exploring feasibility of a radiation damage in materials center
    • Several INL/Industry/Academia workshops were held
Resources

- University Partnerships Annual Report

- Recruiting Video
  https://www.youtube.com/watch?v=rRUTW5UbbLc&feature=youtube

- University Partnerships Page:
  https://www.inl.gov/inl-initiatives/education/

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