



# DOE-FIU Cooperative Agreement Annual Research Review – FIU Year 4

Monday, September 16, 2024		
9:00 - 9:05 AM ET	Kick-Off /Welcoming Remarks (DOE-EM)	Rod Rimando (Acting Director, Technology Development) – DOE EM-3.2
9:05 - 9:10 AM ET	Welcoming Remarks (DOE-LM)	Ms. Jalena Dayvault (Site Manager) – DOE LM
9:10 - 10:10 AM ET	Project 3: Waste and D&D Engineering & Technology Development	FIU, DOE HQ, SRNL, PNNL, LBNL, INL, ANL
10:10 - 10:25 AM ET	Project 3: Q & A	
10:25 am - 11:25 AM ET	Project 1: Chemical Process Alternatives for Radioactive Waste	FIU, DOE HQ, PNNL, WRPS, SRNL, SRS
11:25 - 11:40 AM ET	Project 1: Q & A	
<b>35-MIN BREAK [11:40 AM – 12:15 PM]</b>		
12:15 - 1:15 PM ET	Project 2: Environmental Remediation Science & Technology	FIU, DOE HQ, SRNL, PNNL, ORNL, LANL, LBNL, CBFO
1:15 - 1:30 PM ET	Project 2: Q & A	
Thursday, September 19, 2024		
2:30 - 3:30 PM ET	Projects 4 & 5: STEM Workforce Development and Training	FIU, DOE HQ (EM & LM), SRNL, PNNL, WIPP, SRS, ORP, LBNL, WRPS, INL, Grand Junction
3:30 - 3:45 PM ET	Project 4 & 5: Q & A	
<b>BREAK [3:45 – 4:00 PM]</b>		
4:00 - 5:00 PM ET	Wrap Up (FIU Projects 1, 2, 3, 4 & 5)	FIU, DOE HQ (EM & LM)

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## DOE-FIU Cooperative Agreement Annual Research Review – FIU Year 4

### PROJECT 4

# DOE-FIU Science & Technology Workforce Development Program

*Worlds  
Ahead*

*Advancing the research and academic mission of Florida International University*

# FIU Personnel and Collaborators

**Program Director:** Leonel Lagos

**Program Manager:** Ravi Gudavalli

**FIU Faculty/Staff:** Walter Quintero, Clint Miller, Angelique Lawrence, Anthony Abrahao, Pieter Hazenberg

**DOE-EM Fellows:** Alejandro De La Noval\*, Aris Duani Rojas, Aubrey Litzinger, Brendon Cintas, Bryan Torres, Bryant Pineda, Carlos Rios, Carolyn Cooke, **Daniel Coelho\***, David Rojas, Douglas Baptiste\*, Ellie Risher, Fabiola Rivera-Noriega, Gabriel Cerioni, Hannah Aziz\*, Joel Adams, Kevin Yulkowski, Melissa Dieguez, Nicholas Espinal\*, Pedro Chaviano, Philip Moore, Rafael Velasquez, Reann Nicolas\*, **Shawn Cameron\***, Theophile Pierre, **Valeria Ocampo**, Victor Gonzalez

**DOE-EM:** Genia McKinley, Junita Turner, Mary Ann Maloney

**DOE National Laboratories, Sites, Contractors**

\*Former staff/student contributors



**Overall Needs:**

- There is a national need for more careers in science, technology, engineering and mathematics (STEM). The lack of the STEM workforce is felt at the federal government and private industry.

**Objectives:**

- The DOE-FIU Science and Technology Workforce Development Program has been designed to build upon the existing DOE-FIU relationship by creating a “pipeline” of minority engineers specifically trained and mentored to enter the Department of Energy workforce in technical areas of need.
- The Program provides interested students with a unique opportunity to integrate course work, DOE fieldwork, and “hands on” research at FIU into a well-structured academic program.



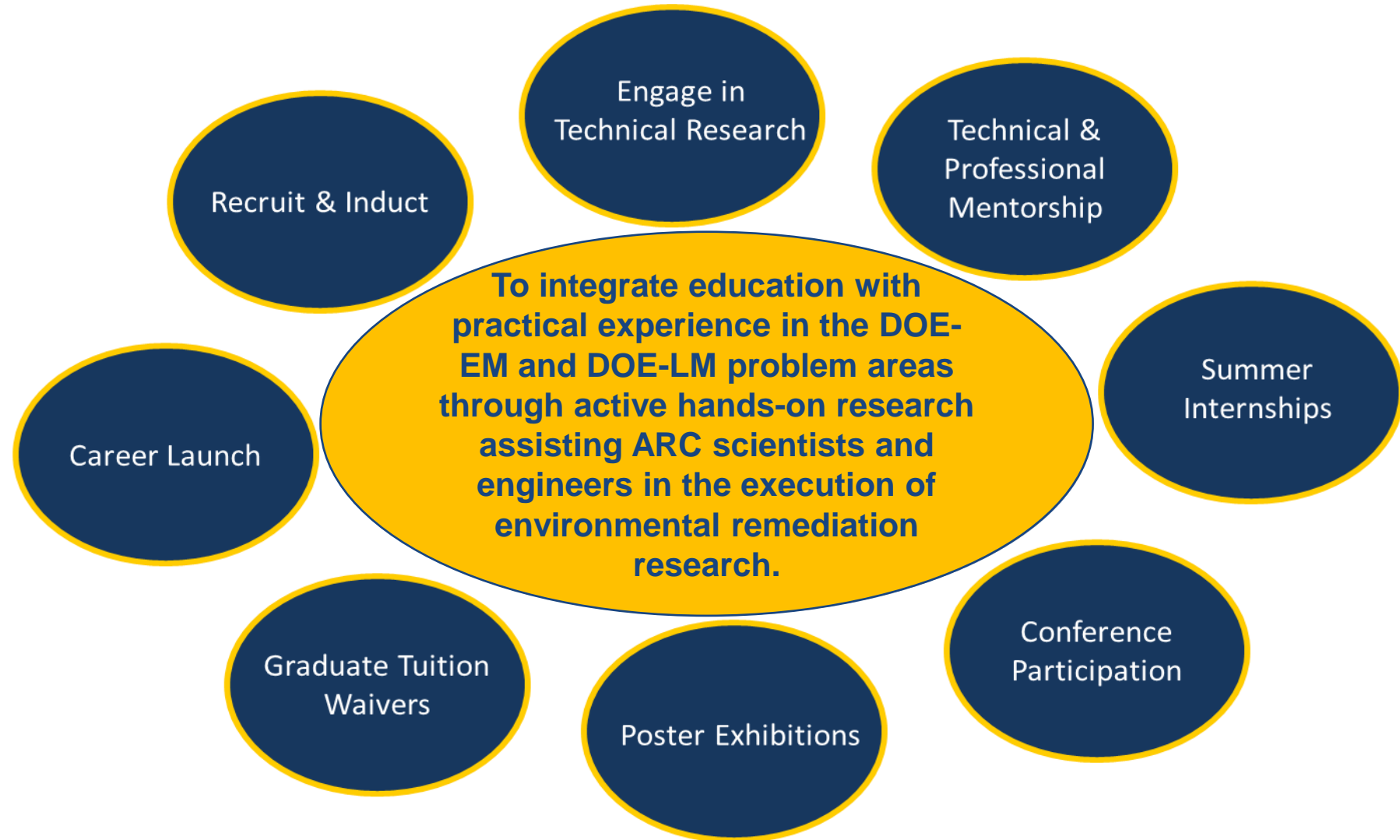
# DOE-FIU COOPERATIVE AGREEMENT

FIU ARC Committed to Supporting & Advancing DOE-EM's and DOE-LM's Environmental Restoration Mission for 28 Years

- **Deactivation & Decommissioning (D & D) of Contaminated Facilities**
- **Soil & Groundwater Remediation & Modeling**
- **STEM Workforce Development**
- **Robotics**
- **Intelligence Applications (D&D and Soil/Groundwater)**
- **Radioactive Waste Management & Treatment**
- **Information Technology Tools for Environmental Application**
- **Long -Term Stewardship of Environmental Protection (LM)**



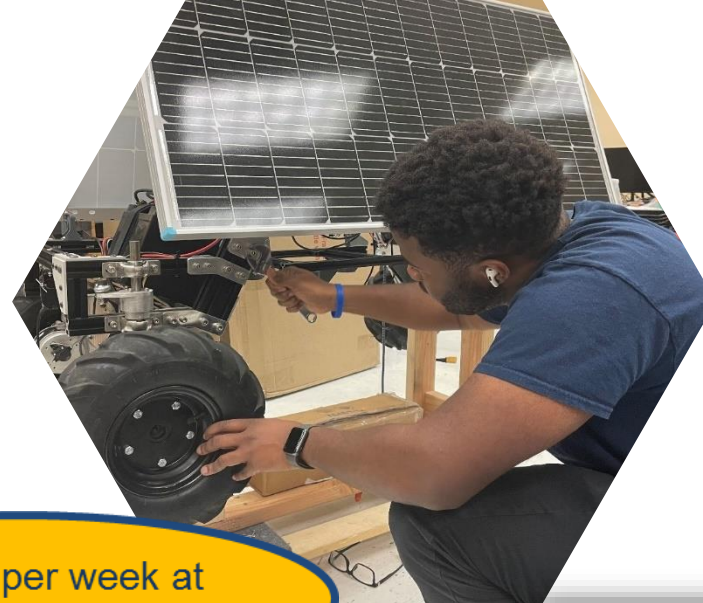
# DOE Fellows Program Components



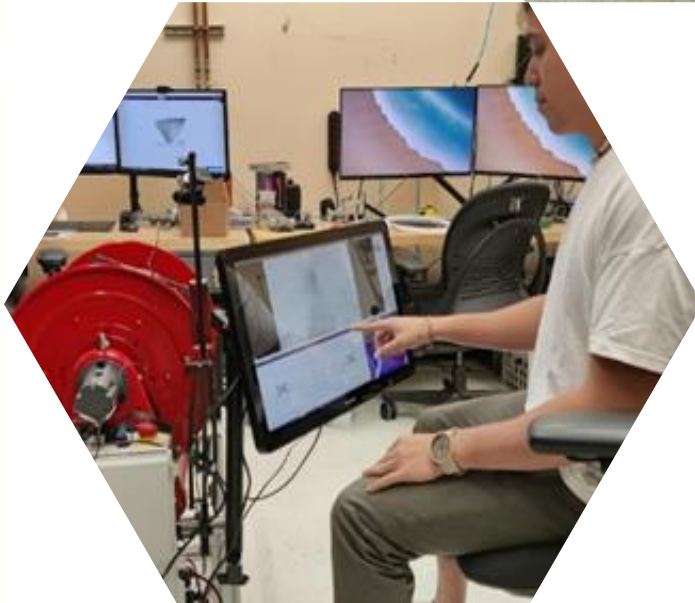
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# Engaging in Technical Research at FIU



20 hours per week at  
FIU ARC





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# FIU Year 4

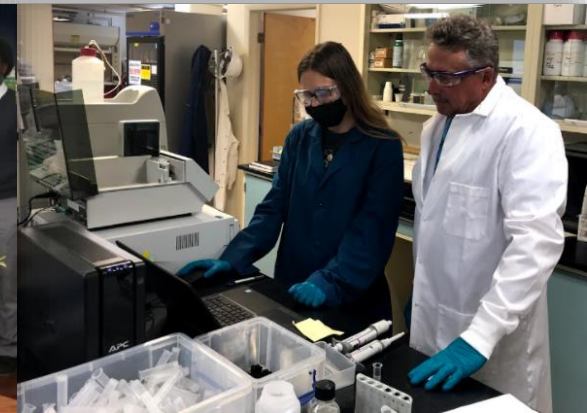
## Highlights & Accomplishments





# FIU Year 4 Highlights & Accomplishments:

- Conducted recruitment campaigns and selected **8** FIU students to join the programs
- **26** Fellows supported FIU scientists and engineers in the development of the technical work
- Conducted induction ceremony and inducted DOE Fellows Class of 2023 (**12**)
- **16** summer internships were conducted across the DOE complex, including **1** LM Fellow Internship
- **18** DOE Fellows participated and presented posters during DOE Fellows Poster exhibition



# DOE-EM Fellows Introduction Ceremony

Bryant Pineda  
Carlos Rios  
\*Daniel Coelho  
David Rojas  
Fabiola Rivera  
Grace Cooke  
Melissa Dieguez  
Pedro Chaviano  
Reann Nicolas  
Theophile Pierre  
\*Valeria Ocampo  
Victor Gonzalez



**DOE Fellows Inducted - Class of 2023**

\*LM Fellows



# Summer 2024 Internship Program (SIP)

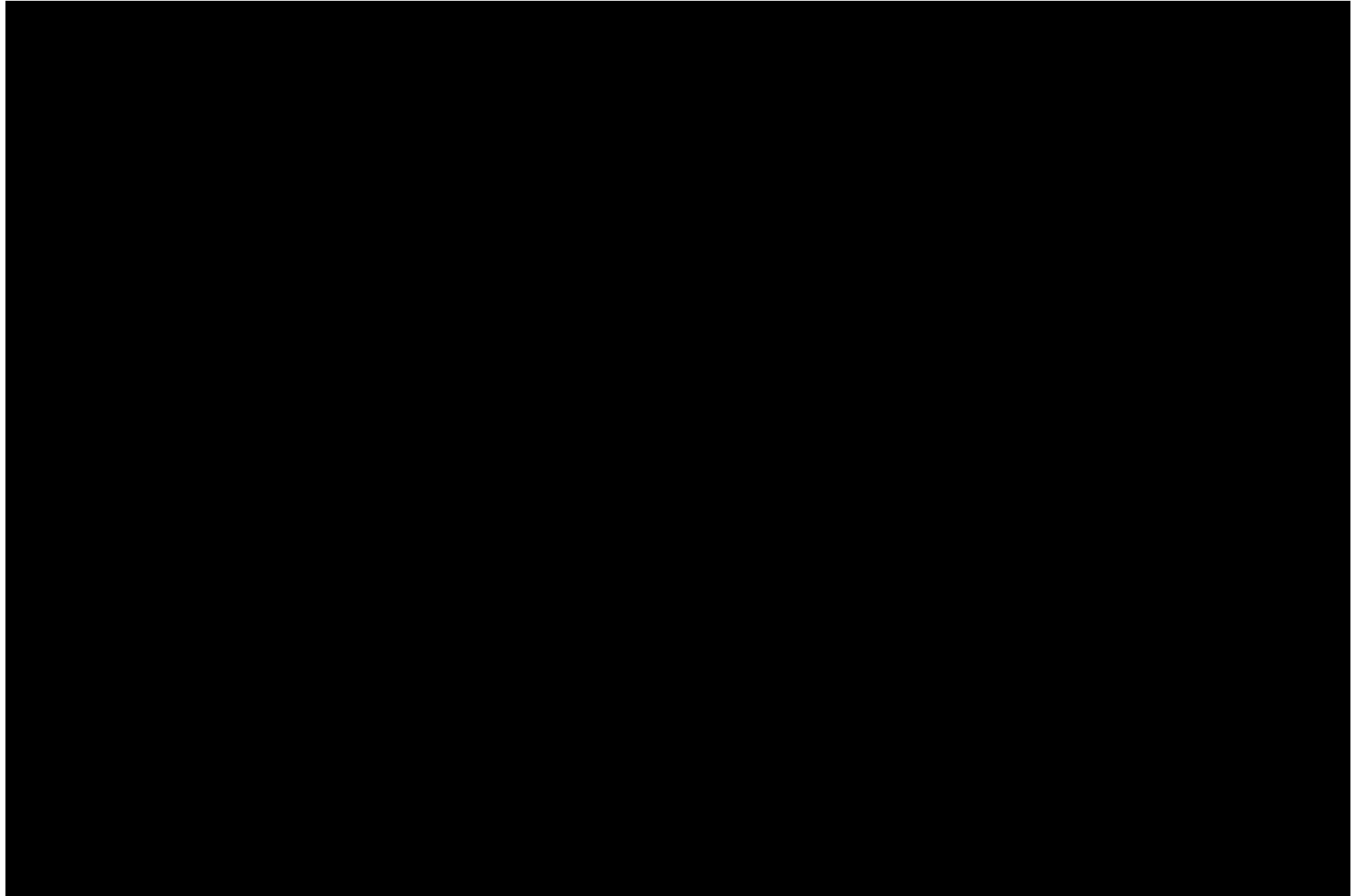
Name	Location
Rafael Velasquez†	INL (partially funded by INL)
Gabriel Cerioni*	SRNL (funded by MSIPP)
Aubrey Litzinger	Drummond Carpenter, PLLC
Aris Duani Rojas	PNNL
Melissa Dieguez	PNNL
Bryan Torres	SRMC
Bryant Pineda	SRNL
Carlos Rios	SRNL
Carolyn Cooke	SRNL
Victor Gonzalez	SRNL
Fabiola Rivera	SRNL
Brendon Cintas	WRPS
David Rojas	WRPS
Pedro Chaviano	WRPS
Theophile Pierre	WRPS
Valeria Ocampo	Grand Junction



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# Summer 2024 Internships



## Waste Management 2024 (WM24) Symposia

- 15 DOE Fellows attended and participated at the WM2024 Symposia.
- 2 DOE Fellows, **Alejandro De La Noval** and **Aubrey Litzinger** were awarded Roy G. Post foundation scholarships.
- Former DOE Fellow **Olivia Bustillo** and **Dr. Ravi Gudavalli** received ASME Award - Best Poster/Paper Presentation, presented at WMS2024.
- DOE Fellow **Brendon Cintas** and former DOE Fellow **Olivia Bustillo**, participated in panel sessions.





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# WASTE MANAGEMENT 2024



# BUILDING THE PIPELINE: DOE FELLOWS JOINING THE WORKFORCE



**Melissa Dieguez**  
PNNL



**Alejandro De  
La Noval**  
SRNL



**Josue Estrada**  
WRPS



**Sebastian Story**  
LANL/NNSA



**Phuong Pham**  
SRNL



**Mariah Doughman**  
PNNL

**2023 -2024**

# BUILDING THE PIPELINE: DOE FELLOWS JOINING THE WORKFORCE



**Olivia Bustillo**  
Drummond  
Carpenter



**Silvina  
Di Pietro**  
NNSA/LLNL



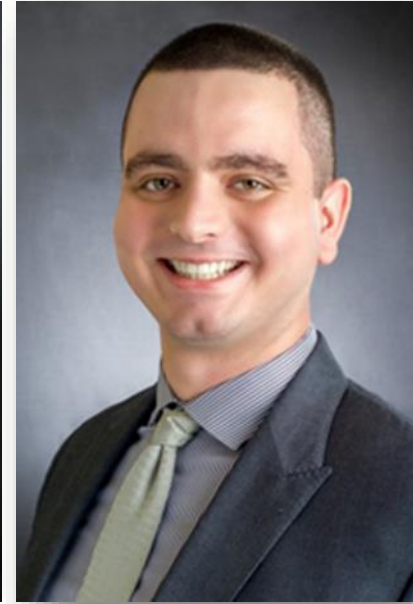
**Juan Morales**  
SRNL/U.S. Navy



**Jeff Natividad**  
WRPS



**Gisselle Gutierrez**  
Kimley-Horn and  
Associates, Inc.



**Tristan  
Simoes-Ponce**  
SRNL

**2020 - 2022**



# BUILDING THE PIPELINE: DOE FELLOWS JOINING THE WORKFORCE



**Roger Boza**  
INL



**Hansell  
Gonzales-Raymat**  
SRNL



**Rosa Ramirez**  
DOE-HQ



**Stephen Wood**  
ORNL



**Nicole  
Anderson**  
NETL



**Adamandios  
Manoussakis**  
SNL

# BUILDING THE PIPELINE: DOE FELLOWS JOINING THE WORKFORCE



**Charles Castillo**  
ORNL



**Edgard Espinosa**  
DOE-HQ



**Merlin Ngachin**  
ANL



**Rubymir Romero**  
Bechtel Power



**Lee Brady**  
DOE-HQ



**Duriem Calderin**  
PNNL

# Overall Accomplishments

- **215 FIU STEM** minority students (graduates & undergraduates) inducted as DOE Fellows since program inception.
- **23** DOE Fellows hired throughout DOE Complex: DOE EM HQ (3), DOE national laboratories (17), NNSA (1), and DOE EM contractors (2).
- **19** Fellows hired by other federal, state or local governments including: Dept. of Defense, NASA, Army Corp of Engineers, Dept. of Commerce, Florida Dept. of Environmental Protection, DERM, Dept. of the Navy (NAVSEA).
- **86** DOE Fellows graduated FIU with bachelor's/master's degrees and employed in STEM industry.
- **17** DOE Fellows graduated FIU and pursued graduate STEM degrees at other major Universities (MIT, Virginia Tech, Georgia Tech, Stanford, Northwestern, etc.).
- **19** Fellows pursuing respective degrees at FIU and are part of DOE Fellows Program.
- DOE Fellows graduate FIU and immediately obtain employment with federal government, state/local government and STEM industry in general. Hiring rate upon graduation is approximately 98%.



## **FIU Year 5 Projected Scope**

Active hands-on research assisting ARC scientists/engineers during execution of DOE-EM research, integrating education with practical experience in DOE-EM problem areas.

- Recruit qualified talented FIU minority STEM students
- Engage in DOE-EM research under the technical projects
- Conduct poster exhibition & competition
- Host DOE Fellows induction ceremony
- Coordinate summer internship program and internship technical reports
- Conference participation & presentations, including WM Symposia, American Nuclear Society, American Geophysical Union (AGU), Rempex
- DOE-EM HBCU collaboration/interactions - extend recruitment to include HBCU/MSI students interested in Ph.D. at FIU
- Work closely with DOE nat. labs to identify opportunities for Ph.D. students including extended work assignments that can lead to post-doctoral positions



# Project 5: Long-Term Stewardship of Environmental Remedies: Contaminated Soils and Water and STEM Workforce Development

## FIU Year 5 Projected Scope

Active hands-on research assisting ARC scientists/engineers during execution of DOE-LM research, integrating education with practical experience in DOE-LM problem areas.

### Task 1: Use of Apatite for Uranium Sequestration at Old Rifle Site

- Study desorption mechanism of U from apatite under various environmental conditions.

### Task 2: Climate Resiliency Studies for Long-Term Surveillance of DOE-LM Sites

#### Task 2.1: Sensor Integration and Data Analysis

- Increase developed GPR robot's Technology Readiness Level (TRL).
- Evaluate higher penetration GPR antennas.

#### Task 2.2 Extreme Event Characterization and Modeling

- Develop hydrological model.
- Integrate drone and GPR observations.

### Task 3: STEM Workforce Development

- Recruit qualified, talented FIU minority STEM students.
- Engage in DOE-LM research under the technical projects.
- Conduct poster exhibition & competition.
- Host DOE Fellows induction ceremony.
- Coordinate summer internship program and internship technical reports.
- Conference participation & presentations, including WM Symposia & American Geophysical Union (AGU).





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# DOE-FIU Cooperative Agreement

## Upcoming Events Announcement



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**18TH ANNUAL**  
**DOE FELLOWS**  
**POSTER EXHIBITION**

**NOVEMBER 12, 2024**

**1:00 - 4:00 PM**

**FIU ENGINEERING CENTER**

**PANTHER PIT**

[fellows.fiu.edu](https://fellows.fiu.edu)



A STEM Workforce Development Program  
sponsored by the U.S. Department of Energy

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CLASS OF  
**2024**

# SAVE-THE-DATE

*18th Annual*  
**DOE Fellows  
Induction Ceremony**

WEDNESDAY  
**NOV.**

**13**

**2024**  
AT 12:00 PM

**FIU MODESTO MAIDIQUE CAMPUS**

Graham Center (GC) Ballroom  
GC Parking, 10955 SW 15th St, Miami, FL 33199

A collaboration between  
the U.S. Department of Energy's Office of Environmental Management  
and Florida International University's Applied Research Center





Thank You. Questions?