DOE-FIU
Science & Technology
Workforce Development Program

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Program Description

FIU’s Applied Research Center (ARC) and the US Department of Energy’s Office of Environmental Management have established a workforce development program for the training of FIU STEM, minority students in an effort to create a pipeline of scientists and engineers that will enter DOE’s workforce upon completing their degrees and research at FIU.
DOE EM Workforce

- Age 40 and above: 91% of EM’s workforce
- Age 30-39: 8% of EM’s workforce
- Age 30 and below: 1% of EM’s workforce
DOE EM Environmental Challenges
60 Year Legacy of R&D and Production of Nuclear Weapons
Program’s Components

- Paid 10-week summer internships at DOE national laboratories, DOE sites, DOE-HQ or DOE contractors working under the supervision of DOE scientists (mentors)
- Paid 20 hours/week Student Research Assistantship at ARC during school year
- Research experience with ARC scientists at FIU during school year: one-on-one mentoring performing “hands on” DOE-related applied research
- 2 - 4 years Developmental Training Program
- DOE Lecture Series and technical seminars
- Participation in conferences/workshops (Waste Management, ANS, etc.)
- Tuition waiver for graduate studies (Masters, PhDs)
Eligibility Requirements

• United States Citizens/Permanent Resident Aliens
• Minimum 3.0 grade point average
• Two letters of recommendation from faculty members
• Fill out Program’s application (http://fellows.fiu.edu)
• FIU undergraduate and graduate students
• Must be available to participate in program activities (summer internships, conferences, weekly meetings)
• Required to work 20 hrs/week
DOE Fellows Training at FIU
DOE Fellows Induction Ceremony

Since 2007, a total of 8 Induction Ceremonies have been conducted.

A total of 108 FIU STEM students have been inducted as DOE Fellows.
Our Fellows have presented over 140 papers/posters and have obtained 1st place at WM’s Professional Poster Track (Leydi Velez) and at 5 Student Poster Competitions (Denisse Aranda, Danny Carvajal, Stephen Wood, Alexandria Fleitas, Christine Wipfli)

Active participation in DOE related conferences including Waste Management Symposia, ANS, IEEE, and ICEM13 conferences
Fellows at WM15
DOE Fellows 10-week Internships Across the Complex

95 internships completed since 2007

Advancing the research and academic mission of Florida International University.
Major Accomplishments

- **108** students recruited/inducted as DOE Fellows since program inception in 2007. An additional **12** will be inducted in Nov 2015
- **95** internships completed at DOE sites, DOE national labs, DOE-HQ, and DOE contractors across the Complex
- **74** students hired by federal, local/state government and STEM industry
- **6** DOE Fellows have obtain bachelors degrees at FIU and continued their graduate education at MIT, Michigan, Purdue, Stanford, Virginia Tech, and other institutions
- **19** DOE Fellows currently participating in the program
Major Accomplishments

• Presented over 140 papers and posters at Waste Management (2008-2014) and other national/international conferences, including two (2) presentations at ICEM13 (Brussels, Belgium), and 5 at ANS conference

• Waste Management Symposia Best Student Posters awarded to Christine Wipfli (WM15), Alexandra Fleitas (WM14), Stephen Wood (WM11), Denny Carvajal (WM10) and Denisse Aranda (WM09). Best Overall Professional Poster awarded to Leydi Velez (WM09)

• 35 Fellows started program as undergraduates and continued to obtain a Masters and/or PhD degree at FIU
STEM Minority Students Pipeline
Getting Them Hired

- 8 Fellows hired by DOE, DOE national labs, and DOE contractors - (8%)
  - DOE EM Professional Development Corp (1)
  - Federal Pathway Program (2) – 640 hrs. of federal work
  - DOE National Lab and DOE contractors HR (5)

- 13 Fellows hired by other federal, state, and local gov’t agencies (Dept. of Defense, NASA, Dept. of Commerce, Dept of the Navy (NAVSEA), etc.) - (12%)

- 53 Fellows hired by STEM industry (GE, Lockheed Martin, Raytheon, Texas Instruments, Motorola, Florida Power & Light, Boeing, Inter Corporation, MWH Global Inc., and others) - (49%)
Getting Them Hired - Challenges

• Direct involvement & commitment from DOE – Creation on transition programs  *(meeting on 10/23/15 with DOE HR and Program Leads)*

• Close coordination with DOE HR offices – when are opportunities available, succession planning, federal budget constrains. DOE HR should provide 1-5 year projections for manpower management

• Engagement with DOE National Labs & DOE contractors HR offices

• DOE Fellows application to federal jobs via Jobs.Gov
  – Help student create profile and resumes with key words
  – Dedicated % FTE of staff member to
  – Consider other federal agencies
Getting Them Hired – Solutions?

- DOE Human Resources commits to conducting two (2) Job Fair / Employment Workshops for our DOE Fellows each year.
- Ensure FIU identifies those current Fellows who are preparing to transition to the workforce at least one year out, and provide DOE with the steps we are pursuing to facilitate their transition to the DOE workforce.
- Incorporate USA jobs training into monthly meetings, and disseminate DOE job openings found on USA Jobs to the Fellows.
- At designated conferences (e.g. WM, ANS, etc.) host “Workshop Hiring Socials” with DOE contractors, the national labs, etc.
- Mentoring plan for your students so you keep track of their future plans (graduate school, transition to federal gov. vs private industry, etc.)
STEM and Cyberspace Test Technology Research

Department of Defense – Test Resource Management Center
&
Florida International University’s Applied Research Center
FIU’s Applied Research Center (ARC) and the US Department of Defense’s Test Resource Management Center (TRMC) have established a workforce development program for the training of FIU STEM, minority students in an effort to create a pipeline of scientists and engineers that will engage in cyberspace research and join the DoD’s workforce upon completing their degrees and research at FIU.
TRMC-FIU Partnership

- Established of Cyberspace Technology Testing and Training Center ($CT_3C$)
- Developed of Cyber Fellows Program (6 STEM minority students hired)
- Established summer internship Program
- Conducted Net centric research with InterTEC suite and TENA middleware & training of FIU staff and students
- Developing T&E TRL3 Cyberspace Test Technology
Phase I: Cyberspace Technology Testing & Training Center (CT₃C) – Ribbon Cutting Ceremony & Cyber Fellows Induction Ceremony – Class of 2014
Cyber STEM Workforce Development

- Develop a **pipeline** of STEM minority students trained and mentored in Department of Defense technical areas of need
- Provide hands-on applied research opportunities that facilitate the training and mentorship of FIU STEM undergraduate and graduate students
- Provide summer internship opportunities to FIU students
- Provide professional development opportunities to Cyber Fellows (conferences, presentations, workshops, etc.)
- Facilitate transition of minority students into the workforce by connecting the students to government and industry partners
Cyber STEM Workforce Development

- Eighteen (18) summer internships completed by FIU STEM minority students in 2013, 2014 and 2015. Students were deployed to Point Mugu Naval Base, GBL System, Georgia Tech Research Institute, Eglin Air Force Base, National Cyber Range (NCR), and Lockheed Martin (Orlando, Fla)

- Three (3) Cyber Fellows graduated FIU (Sylvia Vidaurre, Christopher Lopez and William Chavez) and were immediately hired by DoD contractor – Lockheed Martin (Orlando and Maryland). The other 3 Cyber Fellows are completing their FIU degrees and 3 new Fellows hired in Fall 2015
• 9 students hired under this pilot program

• Three (3) Cyber Fellows graduated FIU (Sylvia Vidaurre, Christopher Lopez and William Chavez) and were immediately hired by DoD contractor – Lockheed Martin (Orlando and Maryland) – (100%)

• Hiring of student direct result of summer internships and participation in FIU cyber security STEM program

• The other 3 Cyber Fellows are completing their FIU degrees and 3 new Fellows hired in Fall 2015

• Cyber security and IT “Hot Area” – almost automatic placement/transition

• Need to be US citizens and obtain security clearance