Research Spotlight Forum

8.6.19 Cybersecurity

UNM Global and National Security Programs

PRESENTED BY:

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Sandia National Laboratories | Georgia Institute of Technology | ILLINOIS | PURDUE UNIVERSITY | THE UNIVERSITY OF TEXAS AT AUSTIN

THE UNIVERSITY OF NEW MEXICO | NM STATE UNIVERSITY | NEW MEXICO TECH SCIENCE • ENGINEERING • RESEARCH UNIVERSITY

SAND2019-9382 PE

UNM Global and National Security Programs

Gilfeather is currently Director of the UNM Intelligence Community – Center of Academic Excellence National Security Studies Programs in GNSPI. He has served as Chairman of the Department of Mathematics and Statistics and an Associate VP for Research. He was Executive Director of the High-Performance Computing Education and Research Center at UNM from 1993 to 2002 which was responsible for establishing and overseeing the Maui (Hawaii) High Performance Computing Center under a Cooperative Agreement with AFRL. From 2002-2008 he was PI on the UNM University Strategic Partnership Program, an IDIQ contract with the Defense Threat Reduction Agency. Gilfeather is Emeritus Professor in the Department of Mathematics and Statistics and was a Program Director in the Mathematics Division at the National Science Foundation and served as the first Staff Director for the Board on Mathematics Sciences at the National Research Council of the U.S. National Academy of Sciences.

Keywords:

Workforce development, diversity, critical technologies, advanced professional degree, national security, intelligence community, cybersecurity, artificial intelligence education

Professional Master of Science in Global and National Security(PMSGNS)

Nature of the PMSGNS Degree

- PMSGNS Professional Degree, non-traditional, interdisciplinary degree
- Online graduate courses and modules and in-person meetings
- Designed to provide the workforce and UNM students with a broader context of security issues that affect their work
- Close collaboration with Sandia, Los Alamos, and the Air Force Research national labs, and the national security industry in the State of New Mexico
- Broad definition of global and national security including nuclear proliferation, infrastructure resiliency, food, water, and energy security, terrorism, humanitarian issues, innovation, cyber security, environmental security, US national security policy, the rule of law, and global health

Requirements of the PMSGNS Degree

Required: Successful completion of 33 credit hours with 15 required credit hours and 18 elective credit hours and a BA or BS in any major with a 3.0 GPA.

No thesis and or GRE required

Required courses:

- Introduction to Global and National Security (3 credits),
- Two modules, 6 credits each: Fundamentals of Cybersecurity and Directed Energy; Human Decision Making, Leadership, and National Security

Electives include:

Global Technology Management, and National Security; Global Health and Human Security; Environmental Security; Global Nuclear Security, Safeguards and Policy; Introduction to Resilience and Decision Making Under Uncertainty; Law and National Security; American National Security, Process, and Issues; Global Health and National Security; US-Latin America Strategic Partnership and National Security

Critical Technology Studies Program in GNSPI

Intelligence Community Centers of Academic Excellence (15 such Centers)

- Critical Technologies Program (5 institutions nationally)
- UNM Critical Technology Studies Program and Consortium (CTSP)
- Objectives:
  - Diversify national security workforce
  - Develop and expand Critical Technology curriculum
    - Cyber Security Course at undergraduate level – assessable to more students
    - Social Media – issues, abuse, monitoring, ethics, self and legal regulation
  - NM Consortium – 8 Northern NM Minority Institutions

\ Inst	UNM Main	Gallop Branch	Los Alamos Branch	Valencia Branch	NMHU	San Juan College	Navajo Tech. Univ.	NNMC
Hispanic	47	11	54	62	56	16	-	68
Native Amer	6	80	7	4	8	34	99	11
African Amer	2	1	2	1	6	1	-	4
Multi-racial	3	2	3	2	1	2	-	5
Total Minority	58	94	66	69	71	53	99	88

- Data from U.S. Dept of Education College Scorecard - https://collegescorecard.ed.gov/

Funding Sources

UNM supports the GNSPI programs through and combination of internal intuitional funding and external grants. GNSPI programs are part of the Office of Provost and work closely with all UNM Departments, Colleges, and Schools

External funding to date includes:

- GNSPI Master's Degree – LANL
- UNM/Sandia GNSPI Speaker's Program (new in 2019) – Sandia
- CTSP – Office of Director of National Intelligence – funds program including NM Consortium

PROGRAM NEEDS

Global and National Security Policy Institute (GNSPI) was established in 2017 and now supports both undergraduate and graduate programs including the IC-CAE programs. .

GNSPI Professional Master of Science In Global and National Security (PMSGNS)

- Graduate interdisciplinary course development – especially quality for on-line offerings related to national security

GNSPI Critical Technology Studies Program is part of the National Security Studies Program – established in 2009 under a federal grant

- Curriculum development especially in CT fields at an undergraduate level
- Curriculum, outside of CS, which is accessible to STEM students (e.g., data science and analysis)
- Integration into courses of the nexus of science, technology and policy – especially wrt cyber, data, regulation, and security.
- Undergraduate internships needed to attract US students into cybersecurity and CT fields