

CURRICULUM VITAE OF JAMES C. PETROSKY

NAME <i>James C. Petrosky</i>	POSITION TITLE <i>Chair, Graduate Nuclear Engineering Program, AFIT</i>
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A. Professional Preparation

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Millersville University of Pennsylvania	B. A.	1985	Engineering Physics/Computer Science
Rensselaer Polytechnic Institute	M. S.	1992	Engineering Physics
Rensselaer Polytechnic Institute	Ph.D.	1995	Engineering Physics

B. PROFESSIONAL HISTORY

- April, 1993- June, 1996 Instructor/Assistant Professor of Physics, U.S. Military Academy: Responsible for preparation, coordination and teaching general physics and senior nuclear engineering courses at the undergraduate level...functioned as the nuclear engineering course director, assistant radiation safety officer, and physics department computer hardware support officer.
- June, 1996- May, 1997 Student of Turkish Language, Defense Language Institute
- May, 1997- May, 1998 Student Air Command And Staff College:
- May, 1998- July, 1999 Operations Officer US Army
- July, 1999-August, 2000 Executive Officer US Army
- August, 2000- November, 2004 Nuclear Research Officer, DTRA/Assistant Professor of Nuclear Engineering, US Army
- November, 2004-present: Assistant Professor of Nuclear Engineering: Responsible for graduate education in nuclear weapon effects in support of Air Force and other DoD initiatives...develops curricula to support education requirements...conducts research in radiation effects on electronics and radiation effects on materials...manages up to \$600k in research...responsible for maintenance of laboratories and partnerships...GNE Curriculum Chair...Nuclear Research Laboratory Director...AFIT Primary Radiation Safety Officer...Chair of NNSA QASPR Independent Review Committee.

C. AWARDS AND HONORS

- Army Achievement Medal (1985)
- USA Commendation Medal (1986, 1988, 1989, 1991)
- Meritorious Service Award (1996, 1998, 2004)
- Legion Of Merit (2004)
- DLI Student Leadership Award (1996)
- DTRA Field Grade Officer of the Quarter (2001)
- AFIT Instructor of the Quarter (2002/2007)
- AFIT Charles A. Stone Award (2003)
- AETC Science and Technology Professor of the Year (2004)
- (Runner Up) US Air Force Science and Technology Professor of the Year (2004)

D. SCHOLARLY ACTIVITIES:

1. **Teaching:**
USMA

PHY231, Physics I: 1993/1994
PHY232, Physics II: 1993/1994
PHYS 381, Advanced Physics Laboratory, 1994/1995
PHYS 451, Nuclear Reactor Engineering, 1994/1995
PHYS 453, Nuclear Systems Engineering, 1994/1995

AFIT (all course are 4 credit hours)

PHYS 531, Electromagnetics: 2001, 2002
PHYS 556, Modern Physics: 2004
NENG 560, Electromagnetic Waves and Effects: 2004, 2005, 2006
NENG 597, Effects of Nuclear Weapons: 2005, 2006
NENG 605, The Physics of Nuclear Explosions: 2006
NENG 612, Advanced Nuclear Laboratory, 2002
NENG 625, Electromagnetic Pulse and Effects: 2003
NENG 660, Radiation Effects on Electronics: 2001-2007
NENG 664, Radiation Effects Laboratory: 2001-2007
NENG 720, Nuclear Reactor Systems, 2006

2. Research:

Successfully chaired 15 Nuclear Engineering, 1 Physics, 1 Electrical Engineering and 1 IDE Masters Thesis. I have successfully chaired 2 PhD students. I currently have 1 Masters and 1 PhD student.

3. Publications:

Accepted/Refereed

- Petrosky J., Howard J., Block R., Bhat I, and Stauber M., "An Innovative Approach to Modeling Current Enhancement Effects Due to Total Dose Ionizing Radiation in Hg_{1-x}Cd_xTe Photodiodes" IEEE Transactions in Nuclear Science vol.30, December 1993.
- *Hogsed M., Yeo Y. K., Ahoujja, M., Ryu M., Petrosky J., Hengehold R., "Radiation-induced Electron Traps in Al_{0.14}Ga_{0.86}N by 1 MeV Electron Radiation," Applied Physics Letter 86, 2005.
- *Kucko J., Petrosky J. Reid J., Yeo Y. "Non-Charge Related Mechanism Affecting Capacitive MEMS Switch Lifetime" IEEE- MEMS and Actuators, April, 2005.
- *John W. McClory, James C. Petrosky, *James M. Sattler, and *Thomas A. Jarzen. "An Analysis of the Effects of Low-Energy Electron Irradiation of AlGa_N/Ga_N HFETs" IEEE-T/NS, Dec2007.
- John W. McClory and James C. Petrosky. "Temperature Dependent Electrical Characteristics of Neutron Irradiated AlGa_N/Ga_N HFETs", IEEE-T/NS, Dec2007.

Publication Accepted (non-refereed)

- J.Petrosky, "Preparation for Graduation School," NBC Report, Spring 2003.
- J. Spear and J. Petrosky, "Concept For a Single Fermi Chopper Neutron Detector," NBC Report, Spring, 2004.
- LaGraffe, J. Petrosky, and P. Coomber, "Combating Weapons of Mass Destruction Educational Programs at the Air Force Institute of Technology," NBC Report, Spring 2007.

Conference

- 2007 National Space Radiation Effects Conference, IEEE, "Trap Assisted Tunneling Induced Currents In Neutron Irradiated Al_xGa_{1-x}N/Ga_N HFETs"
- 2007 National Space Radiation Effects Conference, IEEE, "Temperature Dependent Electrical Characteristics of Neutron Irradiated Al_xGa_{1-x}N/Ga_N HFETs"
- 2007 National Space Radiation Effects Conference, IEEE, "An Analysis of the Effects of Low-Energy Electron Radiation On Al_xGa_{1-x}N/Ga_N HFETs."

Conference (Non refereed)

- 2005 ANS National Conference, Neutron Spectroscopy, J. Spear and J. Petrosky, "Characterizing Neutron Energy Spectrums Using Forward Edge Neutron Time-of-Flight Spectroscopy"
- 2005 ANS National Conference, Radiation Effects on Electronics, T. Uhlman and J. Petrosky, "Temperature-dependent I-V Measurements of Neutron Irradiated Al_xGa_{1-x}N/Ga_N MODFETs"

- Conference Proceedings of the American Society of Engineering Education, Hawaii, July 2007,.D. LaGraffe and J. Petrosky, “Developing a Professional Science Master’s Degree Program in Combating Weapons of Mass Destruction”

Invited Speaker

- ANS National Conference, 2006, Troy NY, “Motivations for Proliferation and the Coming Energy Crisis”

E. SERVICE:

(a) Committee Memberships

- Chair, QASPR review Committee:
- Member HEMP Review Committee:

(b) Profession:

- Member of Nuclear Engineering Heads Organization.
- Member: American Nuclear Society
- Member: Sigma Xi Research Society
- Member: ASEE
- Member: IEEE/Plasma Physics

(c) AFIT Community service:

- 2003-present: Chairman, Graduate Nuclear Engineering program
- 2001-present: AFIT Primary Radiation Safety Officer
- 2006-present: Member, CBTWmd program panel