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# APPENDIX A

## **URL Curriculum on Defense Analysis (CODA)**

The Defense Analysis (DA) Department is devoted to the study of operationally oriented issues in military and security affairs. As the most important and interesting issues tend to be crosscutting in nature, DA's approach has always been interdisciplinary. Faculty members have been teaching and doing research on irregular warfare since 1993, and began to do the same in the area of information operations just a few years later. Their educational goal during these years has been to provide instruction both for specialists and generalists – as the former must develop deep expertise in these areas, and the latter have a need to reflect on and understand the manner in which the overall force is influenced by two of the most significant changes in military affairs over the past decades: the rise of irregular warfare and the impact of the information revolution.

The CODA for URLs is designed to provide one year of in-residence education at NPS, resulting in a certificate that may be turned into a master's degree on the basis of post-residence distributed learning, a two-quarter extension of residence, or a later return to NPS. While the program emphasis is on providing an overview of issues relating to the role of sea power in irregular wars (e.g., variously, either supporting or suppressing insurgencies, etc.) and the risks and opportunities posed by information operations and cyberwar techniques, the overall course of instruction will cover the broader issues in 21<sup>st</sup> century naval affairs as well (e.g., beginning with the course on "sea power in the information age). Course offerings will also include study in the areas of culture and influence, regional security and critical thinking and ethical decision making. Finally, there will also be instruction in formal analytic methods, from mathematical modeling to game theory.

The sample four-quarter sequence listed below consists almost entirely of courses already part of one or another of the current DA curricula. But the course on sea power in the information age would be somewhat new – being an amended, augmented version of the current survey course on conflict in the information age.

### **Sample Course Sequence:**

Quarter 1

Sea Power in the Information Age

Critical Thinking and Ethical Decision Making

Mathematical Modeling in Military and Naval Affairs

Regional Security Seminar: South Asia

## Quarter 2

Joint and Naval Campaign Analysis

Conflict in Cyberspace

Applied Game Theory

Regional Seminar: Latin America

## Quarter 3

Wicked Problems

Network Analysis

Culture and Influence

Regional Seminar: The Med and the Middle East

## Quarter 4

Roots of Strategic Culture

The Anthropology of Conflict

Survey of Irregular Warfare

Regional Seminar: Either Africa or East Asia

Note: The above sequence is notional. URLs who wish to begin a particular track (e.g., IO, network analysis, OA, etc.) would have a differently tailored set of courses. For those wishing to continue on, from certificate to master's, the 5<sup>th</sup> and 6<sup>th</sup> quarter courses would likely be heavily focused on the particular track they have chosen, and would include two blocks of directed reading and thesis work.

# APPENDIX B

## **John Arquilla, Chairman**

### **EDUCATION:**

**PhD** - Stanford University, 1991

**MA** - Stanford University, 1989

**BA** - Rosary College, 1975

### **NPS EXPERIENCE:**

- 2005-present: Chairman/Professor of Defense Analysis
- 1996-2005: Associate Professor of Defense Analysis
- 1993-1995: Assistant Professor of National Security Affairs

### **OTHER EXPERIENCE:**

- 1993 - 2003 - senior consultant to the RAND Corporation
- 1989 - 1993 - RAND analyst
- 1987 - 1991 - Doctoral fellow, Stanford University
- 1975 - 1987 - Surety bond executive

### **TEACHING INTERESTS:**

- Revolution in Military Affairs
- Information-Age Conflict
- Irregular Warfare

### **RESEARCH INTERESTS:**

- Revolution in Military Affairs
- Information-Age Conflict
- Irregular Warfare

### **AWARDS:**

- Schieffelin Award, 2002
- Hamming Award, 2001

### **SELECTED PUBLICATIONS:**

- *Insurgents, Raiders, and Bandits* (2011)
- *Worst Enemy: The Reluctant Transformation of the American Military* (2008)
- *Information Strategy and Warfare* (2007)
- *The Reagan Imprint: Ideas in American Foreign Policy from the Collapse of Communism to the War on Terror* (2006)
- *Networks and Netwars: The Future of Terror, Crime, and Militancy* (NDRI, 2001)
- *In Athena's Camp: Preparing for Conflict in the Information Age* (RAND, 1997)

## Leo Blanken, Assistant Professor

### EDUCATION:

- PhD – UC Davis 2006
- MA – Columbia University 1995
- BA – University of San Francisco 1993

### NPS EXPERIENCE:

- 2008-present Assistant professor

### OTHER EXPERIENCE:

- 2006-2008 – Post doctoral appointment, UC Davis

### TEACHING INTERESTS:

- International relations theory
- Grand strategy and strategic decision making
- Social science methodology

### RESEARCH INTERESTS:

- Strategic decisions
- Wartime assessment
- Grand strategy

### AWARDS:

- 2005, Harry Frank Guggenheim Dissertation Fellowship
- 2006, Western Political Association Best Dissertation Award (all fields)

### SELECTED PUBLICATIONS:

- Leo Blanken. 2012. *Rational Empires: Institutional Incentives and Imperial Expansion* (Chicago: University of Chicago Press)
- Leo Blanken and Jason J. Lepore. 2011. "Slowing Down to Keep the Lead in Military Technology." *Defense and Peace Economics* 22 (3): 317-334.
- Leo Blanken and Justin Overbaugh. Forthcoming. "Looking for Intel...or Looking for Answers? Reforming Military Intelligence for a Counterinsurgency Environment." *Intelligence and National Security*
- Scott Sigmund Gartner and Leo Blanken. 2012. "Beyond Victory and Defeat." in H. Rothstein and J. Arquilla eds., *Afghan Endgames: Strategy and Policy Choices for America's Longest War*. (Washington DC: Georgetown University Press).

## **Douglas A. Borer, Associate Professor**

### **EDUCATION:**

- **PhD** - Boston University, 1993
- **MA** - University of Montana, 1988
- **BA** - Ripon College, 1985

### **NPS EXPERIENCE:**

- Associate Professor
- Associate Chair for Instruction (2004-2010)

### **OTHER EXPERIENCE:**

- Visiting Professor of Political Science, Department of National Security and Strategy, US Army War College, Carlisle Barracks, PA. 2003 - 2004.
- Associate Professor (tenured), Department of Political Science, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 2002 - 2003.
- Director of International Studies, College of Arts and Sciences, Virginia Tech, 2002- 2004.
- Director of Graduate Studies, Department of Political Science, Virginia Tech, 2002.
- Fulbright Visiting Scholar, Strategic and Security Studies Unit, University Kebangsaan Malaysia (Malaysia National University). Kuala Lumpur, May-October. 1998.
- Director of Post-Graduate Studies, Department of History/Politics, University of the South Pacific, 1993-94.

### **RESEARCH INTERESTS:**

- War and Political Legitimacy
- Economic Statecraft
- Strategy in irregular and unconventional war

### **TEACHING INTERESTS:**

- Information-Age Conflict
- Nation States and Networks
- Irregular and Unconventional Warfare
- Strategy

### **AWARDS:**

- Outstanding Civilian Service Medal, Department of National Security and Strategy, US Army War College, 2004.
- Faculty Teaching Award, Department of Political Science, Virginia Tech, 2000.
- Outstanding Political Science Professor, 1996-1997, Virginia Tech. Teaching award presented by Pi Sigma Alpha - Political Science Student Honor Society.

### **Recent select PUBLICATIONS:**

- Mark T. Berger and Douglas A. Borer, editors. *The Long War: Insurgency, Counterinsurgency and Collapsing States*. 2008.
- John Arquilla and Douglas A. Borer, editors. *Information Strategy and Warfare: A Guide to Theory and Practice*. 2007.
- John Arquilla and Douglas A. Borer, "Strategic Dimensions of the Iraq Conflict." Chapter in *The Three*

- Circles of War: Understanding the Dynamics of Conflict in Iraq.* 2010.
- Douglas A. Borer and Steve W. Twing. "Blundering Into Baghdad: an analysis of Strategy, Structure, Principals and Agents." In *Cambridge Review of International Affairs*. Vol 24, Number 3 (2011).
- Douglas A. Borer, Sean F. Everton, and Moises Nayve. "Global Development and Human (In)Security: understanding the rise of the Rajah Solaiman Movement and Balik Islam in the Philippines." *Third World Quarterly*. Volume 30 Number 1 (2009),.
- Douglas A. Borer and James David Bowden, "Rethinking the Cuban Embargo: An Inductive Analysis." *Foreign Policy Analysis*. Volume 3 Number 2, (2007).
- Douglas A. Borer and Jason J. Morrissette, "Russian Authoritarian Pluralism: A Global Trend?" *Cambridge Review of International Affairs*. Volume 19 Number 4, (December 2006).

## **Randy P. Burkett, CIA Representative and National Intelligence Chair**

### **EDUCATION:**

- MA – US Naval Postgraduate School, 1989
- BA – California State University Fullerton, 1982

### **NPS EXPERIENCE:**

- 2010-present: Director of the CIA Representative to NPS and Chair for National Intelligence

### **OTHER EXPERIENCE:**

- 2009-2010 -- Intelligence Educator, Program Manager for Counterterrorism and Denial and Deception training, CIA University
- 2000-2009 -- CIA Directorate of Operations/National Clandestine Service officer
- 1997-1999 -- USAF Representative to the National HUMINT Requirements Tasking Center
- 1995-1997 -- Associate Professor of Aerospace Studies, Loyola-Marymount University, Santa Monica, CA
- 1990 - 1995 -- HUMINT officer, US Air Force Special Activities Center
- 1987 - 1989 -- Graduate student, NPS
- 1983 - 1987 -- Missile Operations Officer, Minot AFB
- 1980 - 1982 -- Undergraduate student
- 1977-1980 -- SIGINT analyst, US Army Field Station, Augsburg, West Germany

### **TEACHING INTERESTS:**

- Intelligence History/Policy
- International Terrorism
- Irregular Warfare

### **RESEARCH INTERESTS:**

- Unconventional Warfare/Covert Action
- Intelligence and Counterintelligence
- Selection, education, and training of elite forces

### **AWARDS:**

- Col Leo A. Codd Memorial Award for Excellence in ROTC Instruction, 1996
- Naval Institute Award for Original Research, 1989

### **SELECTED PUBLICATIONS:**

- *The Training and Employment of Foreign Area Specialists in the Armed Forces* (1989)

## Dorothy E. Denning, Distinguished Professor

### EDUCATION:

- PhD - Purdue University, *Computer Science*, 1975
- MA - University of Michigan, *Mathematics*, 1969
- BA - University of Michigan, *Mathematics*, 1967

### NPS EXPERIENCE:

- 2002- present; Professor, Department of Defense Analysis

### OTHER EXPERIENCE:

- Georgetown University, Washington DC, Patricia and Patrick Callahan Family Professor of Computer Science, 2001-2002; Professor of Computer Science, 1991-2002; Chair of Computer Science Department, 1991-1994; Director, Georgetown Institute for Information Assurance, 2000-2002.
- Digital Equipment Corporation, Systems Research Center, Palo Alto, CA, Principal Software Engineer, 1987-1991.
- SRI International, Computer Science Lab, Menlo Park, CA, Senior Staff Scientist, 1983-1987.
- Purdue University, Computer Science Department, W. Lafayette, IN, Professor of Computer Science, 1975-1983.

### TEACHING INTERESTS:

- Conflict and Cyberspace
- Computer Network Attack and Defense
- Trust, Influence, and Networks

### RESEARCH INTERESTS:

- Conflict and the Internet
- Cybercrime, cyber terrorism, cyber warfare, and cyber protest
- Cyber defense and security
- Trust
- Influence and information operations
- Social networks

### AWARDS:

- Distinguished Fellow, ISSA, 2010
- Outstanding Innovation Award, ACM SIGSAC, 2008
- Fellow of (ISC)<sup>2</sup>, International Information Systems Security Certification Consortium, 2008
- Security 7 Award, 2006
- Distinguished Science Alumnus, Purdue University, 2006
- Harold F. Tipton Award, International Information Systems Security Certification Consortium, 2004
- ISSA Hall of Fame, 2003
- COMPASS Award, *CSO Magazine*, 2003
- Honorary Certified Information Security Manager (CISM), Information Systems Audit and Control Association, 2003
- Award for Excellence in Information Security, George Washington University, 2002

- Augusta Ada Lovelace Award, Association for Women in Computing, 2001
- Security innovator, *Time* magazine, 2001
- TechnoSecurity Professional of the Year Award, 2000
- National Computer Systems Security Award, 1999
- ACM Fellow, 1995
- Distinguished Lecturer in Computer Security Award, Aerospace, 1990

#### **BOARDS/MEMBERSHIPS:**

- Editorial board, *International Journal of Critical Infrastructure Protection*, 2008-.
- Editorial board, *International Journal of Cyber Crimes and Criminal Justice*, 2006-.
- Editorial board, *International Journal of Information and Computer Security*, 2004-present.
- Editorial board, *Information Security and Privacy*, IEEE Computer Society, 2003-present.
- Editorial board, *Ethics and Information Technology*, 1999-present.
- Editorial board, *Information, Communication & Society*, 1997-present.
- Member, Association for Computing Machinery

#### **PUBLICATIONS:**

4 books and 150 articles, including:

- Denning, D. E., *Information Warfare and Security* (Addison-Wesley, 1999)
- Denning, D. E., "Activism, Hacktivism, and Cyberterrorism: The Internet as a Tool for Influencing Foreign Policy," in *Networks and Netwars : The Future of Terror, Crime, and Militancy* (J. Arquilla and D. F. Ronfeldt eds.), RAND, 2001, pp. 239-288.
- Denning, D. E., "A View of Cyberterrorism Five Years Later," *Readings in Internet Security: Hacking, Counterhacking, and Society* (K. Himma ed.), Jones and Bartlett Publishers, Boston, 2006.
- Denning, D. E., "The Ethics of Cyber Conflict," in *Information and Computer Ethics* (K. E. Himma and H. T. Tavani eds.), Wiley, 2007
- Denning, D. E., "Terror's Web: How the Internet is Transforming Terrorism," *Handbook on Internet Crime* (Y. Jewkes and M. Yar, eds.), Willan Publishing, 2010.
- Denning, D. E., "Cyber Conflict as an Emergent Social Phenomenon," *Corporate Hacking and Technology-Driven Crime: Social Dynamics and Implications* (T. Hold and B. Schell eds.), IGI Global, 2011, pp. 170-186.

## Sean Everton, Assistant Professor

### EDUCATION:

- PhD - Stanford University, 2007  
*Sociology*
- MA - Stanford University, 2000  
*Sociology*
- MA - San Jose State University, 1999  
*Sociology*
- MDiv - Vanderbilt University, 1990
- BS - Santa Clara University, 1980

### NPS EXPERIENCE:

- 2008-Present - Assistant Professor, Department of Defense Analysis, Naval Postgraduate School
- 2007-2008 - Research Assistant, Department of Defense Analysis, Naval Postgraduate School

### OTHER EXPERIENCE:

- 2003-2006 - Lecturer, Department of Sociology, Stanford University
- 2001-2007 - Lecturer, Departments of Religious Studies and Sociology, Santa Clara University

### TEACHING INTERESTS:

- Tracking, Disrupting, and Destabilizing Dark Networks
- Religion and Collective Action
- Religion and Violence

### RESEARCH INTERESTS:

- Sean Everton is an Assistant Professor in the Department of Defense Analysis at the Naval Postgraduate School (NPS). Prior to joining NPS in 2007 he was an adjunct professor at both Santa Clara University and Stanford University. Professor Everton earned his MA and PhD in Sociology at Stanford University (2007) and wrote his doctoral thesis on causes and consequences of status on the economic performance of venture capital firms. He has published articles in the areas of social network analysis, sociology of religion, economic sociology and political sociology and currently specializes in the use of social network analysis to track and disrupt dark networks (i.e., criminal and terrorist networks). He recently completed a monograph for Cambridge University Press on using social network analysis for the crafting of strategies for the disruption of dark networks that will be released in 2012.

### AWARDS:

- Centennial Teaching Assistant Award, Stanford University - 2004
- Cilkler Award (Excellence in Teaching), Stanford University - 2002
- The LaPiere Award for Second Year Paper, Stanford University - 2002
- American Sociological Association Honors Student - 1998
- Founder's Medalist (Valedictorian), Vanderbilt University - 1990
- Cum Laude, Santa Clara University - 1980

### BOARDS/MEMBERSHIPS:

- Editorial Board, *Sociological Perspectives*
- American Sociological Association
- Association for the Sociology of Religion
- Association for the Study of Religion, Economics, and Culture
- International Network for Social Network Analysis
- Religious Research Association
- Society for the Scientific Study of Religion

### **SELECTED PUBLICATIONS:**

- **PROFESSIONAL PUBLICATIONS**
  - 2012. *Disrupting Dark Networks*. Cambridge and New York: Cambridge University Press.
  - 2011. "Network Topography, Key Players and Terrorist Networks." *Connections* (forthcoming).
  - 2011. "Social Movement Theory." Pp 37-40 in *Gangs and Guerrillas: Ideas From Counterinsurgency and Counterterrorism*, edited by M. Freeman and H. Rothstein. Monterey, CA: Department of Defense Analysis, Naval Postgraduate School.
  - 2011. "Strategies for Combating Dark Networks." *Journal of Social Structure* 12(2) (with Nancy Roberts):  
<http://www.cmu.edu/joss/content/articles/volume12//RobertsEverton.pdf>.
- **PRESENTATIONS AT PROFESSIONAL MEETINGS**
  - 2011. "A Social Network Theory of Religious Violence." Paper presented at the annual meeting of the *Society for the Scientific Study of Religion*, Milwaukee, WI, October 30<sup>th</sup>.
  - 2011. "The Jesus Seminar and the Scientific Quest for the Historical Jesus." Paper presented at the annual meeting of the *Society for the Scientific Study of Religion*, Milwaukee, WI, October 28<sup>th</sup>.
  - 2011. "Terrorist Network Adaptation to a Changing Environment." Paper presented at the annual meeting of the Illicit Networks Workshop, Montreal, Canada, October 3<sup>rd</sup> (with Dan Cunningham).
  - 2011. "FARC Key Broker Social Network Analysis." Paper presented at The FARC Workshop, Monterey, CA, August 31<sup>st</sup>.
  - 2011. "Re-Assessing Dark Networks by Incorporating Spatial Data into a Multi-Modal Analysis of Insurgent Groups." Paper presented at Sunbelt XXXI, the annual meeting of the International Network for Social Network Analysis, St. Pete Beach, FL, February 12<sup>th</sup> (with Phil Murphy and Nancy Roberts).
  - 2011. "Balancing Risk and Security: The Density and External Connections of Insurgent Networks." Paper presented at Sunbelt XXXI, the annual meeting of the International Network for Social Network Analysis, St. Pete Beach, FL, February 12<sup>th</sup> (with Nancy Roberts and Dan Cunningham)
  - 2011. "Road Networks and Insurgent Violence in the Philippines." Paper presented at Sunbelt XXXI, the annual meeting of the International Network for Social Network Analysis, St. Pete Beach, FL, February 12<sup>th</sup> (with Dan Cunningham and Rob Schroeder).
  - 2011. "Homophily Networks for Large Populations: Development, Methodology and Use." Paper presented at Sunbelt XXXI, the annual meeting of the International Network for Social Network Analysis, St. Pete Beach, FL, February 10<sup>th</sup> (Stephen Lieberman).

## **William P. Fox, Professor**

### **EDUCATION:**

- **PhD** - Clemson University, Industrial Engineering Operations Research, 1990
- **MS** - Naval Postgraduate School, *Operations Research and System Analysis*, 1982
- **BS** - USMA, General Engineering, 1973

### **NPS EXPERIENCE:**

- 2006- present; Professor, Department of Defense Analysis

### **OTHER EXPERIENCE:**

- Professor, USMA, 1982-1986, 1990-1998
- Professor and Chair, Department of Mathematics, Francis Marion University, 1998-2006

### **TEACHING INTERESTS:**

- Mathematical Modeling
- Optimization
- Statistics
- Simulation Modeling
- Operations Research
- Game Theory
- Decision Theory

### **RESEARCH INTERESTS:**

- Medical Statistical Analysis and Modeling
- Mathematical Modeling Optimization
- Simulation Models
- Game Theory
- Combat Models
- Detection of Suicide Bombers

### **AWARDS:**

- Francis Marion University's Faculty Research and Scholarship Award (2003)
- Francis Marion University's Board of Trustees Research Scholar Award (2005)

### **BOARDS/MEMBERSHIPS:**

- Mathematical Association of America, MAA (Member) 1991-
- Society of Industrial and Applied Mathematics (SIAM) Member and Lecturer, 1998-
- Director High School Mathematical Contests in Modeling (HiMCM) 1999-
- Director, Mathematical Contests in Modeling (MCM) 2011-
- Associate Director, MCM, 1991-2011.
- President-Elect, Military Applications Society of INFORMS, 2010
- Editorial Board, International Journal of Operations Research and Information Systems (IJORIS) 2007-
- Guest Editor, Special Editions of IJORIS, 2010-
- Column Editor, CONSORTIUM, 1999-

**SELECTED PUBLICATIONS:** 12 books, 9 chapters, over 117 articles, 2 patents, and over 130 conference presentations including:

- Fox, William P. (2012). Mathematical Modeling with Maple, Cengage Publishing, Boston, MA.
- Fox, William P., Frank R. Giordano, Steve Horton, and Maurice Weir. (2009). A First Course in Mathematical Modeling. 4<sup>th</sup> Edition, Cengage Publishing: Brooks/Cole Publishing Co., Belmont, CA.  
site.
- Fox, William P. and Richard D. West, (1999). College Algebra I Math 120 Course Guides, Francis Marion University Print Plant. ( Royalties contributed to the Department of Mathematics fund, FMU).
- Fox, William P., M. Hunter, et al. (2012). "Chapter 3-The Afghanistan Game". Ambivium Press. Chapter in Proceedings for Conferences I and II.
- Fox, W. P. (2010) "System Modeling of U.S. Efforts as Applied to the War on Terrorism in Iraq and Iraq's Infrastructure Resiliency: The Indicators of Force Multipliers (INFORM) Model", *The Three Circles of War Understanding the Dynamics of Conflict in Iraq*, Potomac Press. pp. 153-164.
- Fox, W.P. (2010) "Appendix: Formal Modeling of Iraq using Game Theory and Dynamical Systems", *The Three Circles of War Understanding the Dynamics of Conflict in Iraq*, Potomac Press. pp. 209-236.
- Fox, William P., Jonathan Levy, Mark Mizel, Samuel Wilson, Kathleen McHale, Dean Taylor, and H. Thomas Temple (2006) "Incidence of Foot and Ankle Injuries in West Point Cadets with Pes Planus Compared to the General Cadet Population", *Journal of Foot and Ankle International*, 27 (12), pp. 1060-1064.
- Fox, William P., C. Hulen, H.T. Temple, A. Sama, B. Green, and F. Eismont. (2006). "Oncologic and Functional Outcome Following Sacrectomy for Sacral Chordoma", *The Journal of Bone and Joint Surgery*, 88(7), July 2006, pp. 1532-1539.
- Fox, William P., J. Croteau, and K. Varazo. (2007) "Mathematical Modeling of Chemical Stoichiometry", *PRIMUS*, XVII(4), pp. 301-315.
- Fox, William. (2008) "Mathematical Modeling of Conflict and Decision Making "The Writers Guild Strike 2007-2008", *Computers in Education Journal (COED)*, XVIII(3), July-Sept 2008, pp. 2-11.
- Fox, W.P., Jeremy A. Dennis, Octavio V. Martinez, David C. Landy, Theodore I. Malinin, Paul R. Morris, Billy E. Buck and H. Thomas Temple (2009) "A comparison of two microbial detection methods used in aseptic processing of musculoskeletal allograft tissues", *Journal of Cell and Tissue Banking*, Springer, 1(12), pp. 45-50.
- Fox, W. P., J. Vesecky, and K. Laws (2011). "Detecting Suicide Bombers", *Journal of Defense Modeling and Simulation (JDMS)*, 8(1), pp. 5-24 (lead article for a special IED issue).
- Fox, W.P. (2010) "Teaching the applications of optimization in game theory's zero-sum and non-zero sum games", *International Journal of Data Analysis Techniques and Strategies (IDATS)*, 2(3), pp. 258-284.

- Fox, William P. (2010) "Discrete Combat Models: Investigating the Solutions to Discrete Forms of Lanchester's Combat Models", *International Journal of Operations Research and Information Systems* (IJORIS), *1*(1), January-March. pp. 16-34.
- Fox, W.P. and M.J. Jaye (2011). Search and Rescue Carry Through Mathematical Modeling Problem, *Computers in Education Journal* (COED), *2*(3), June-July 2011 . pp. 82-93.
- Fox, W.P. and Patrick J. Driscoll (2011). Modeling with Dynamical Systems for Decision Making and Analysis. *Computers in Education Journal* (COED), *2*(1), pp.19-25.
- Fox, W.P. et al. (2011). Detecting IED Suicide Bombers, *PHALANX*, *44*(1), March, 2011, pp. 12-17.
- Fox, William P. (2011). Using the EXCEL Solver for Nonlinear Regression, *Computers in Education Journal* (COED). October-December 2011 Journal. *2*(4), pp. 77-86.
- Fox, William P. (2012). Issues and Importance of "Good" Starting Points for Nonlinear Regression for Mathematical Modeling with Maple: Basic Model Fitting to Make Predictions with Oscillating Data. *Journal of Computers in Mathematics and Science Teaching*. *31*(1), pp. 1-16.

## **Michael E. Freeman, Assistant Professor**

### **EDUCATION:**

**PhD** - University of Chicago, 2001

*Political Science*

**MA** - University of Chicago, 1997

*Political Science*

**BA** - University of Chicago, 1995

*Political Science, general honors and departmental honors*

### **NPS EXPERIENCE:**

- 2005-present Assistant Professor

### **OTHER EXPERIENCE:**

- 2004 Visiting Lecturer, Committee on International Relations, University of Chicago
- 2003-2004 Post-doctoral Research Fellow, Institute for Security Technology Studies Dartmouth College
- 1997-2000 Analyst (with top-secret security clearances), Directorate of Intelligence and National Imagery and Mapping Agency Central Intelligence Agency

### **TEACHING INTERESTS:**

- Terrorism and Democracy
- Causes of Terrorism
- Counter-terrorism Policy
- International Security
- U.S. Foreign Policy
- International Relations Theory

### **RESEARCH INTERESTS:**

- Terrorism and Democracy
- Causes of Terrorism
- Counter-terrorism Policy
- International Security
- U.S. Foreign Policy
- International Relations Theory

### **AWARDS:**

- 1999-2002 Program on International Security Policy Dissertation Fellowship
- 1997-2000 Central Intelligence Agency, Graduate Fellowship
- 1998 Mellon Dissertation Fellowship

**SELECTED PUBLICATIONS:**

- Freedom or Security: The Consequences for Democracies Using Emergency Powers to Fight Terror. Westport, CT: Praeger, 2003.
- "Terrorism and Civil Liberties in the United States: How to Have Both Freedom and Security," Democracy and Security, Vol. 2, No. 2, July-December 2006.
- "Democracy, Al-Qaeda, and the Causes of Terrorism," forthcoming in Studies in Conflict and Terrorism, 2007.
- "Counterterrorism and Privacy: The Changing Landscape of Surveillance and Civil Liberties," in Information Ethics: Privacy and Intellectual Privacy, eds., Graham Peace and Lee Freeman. Idea Group, 2004.
- "Thinking Strategically: Can Democracy Defeat Terrorism?" in Countering Terrorism, edited by James Forest, forthcoming in 2007, co-authored with Douglas A. Borer.

## **Frank Giordano, Professor**

### **EDUCATION:**

- **PhD** – University of Arkansas, 1975
- **MS** – University of Arkansas, 1974
- **BS** – United States Military Academy, 1964

### **NPS EXPERIENCE:**

- 2002 – Present Professor, Defense Analysis
- 1981-1982 Visiting Associate Professor, Department of Mathematics

### **OTHER EXPERIENCE:**

- 1996 – 2002 Consortium of Mathematics and its Application Projects (COMAP)
- 1995-1996 Carroll College, Distinguished Visiting Professor
- 1981-1995 United States Military Academy, Professor and Vice Dean (1994-1995)
- 1975-1981 United States Military Academy, Associate Professor of Mathematics
- 1974-1975 Command General Staff College
- 1971-1974 Olmsted Scholar, University of Madrid and University of Arkansas

### **TEACHING INTERESTS:**

- Operations Research
- Applied Mathematics

### **RESEARCH INTERESTS:**

- Modeling behavior
- Educational research
- Internal dynamics of violent sub-state political groups

### **SELECTED PUBLICATIONS:**

- A FIRST COURSE IN MATHEMATICAL MODELING, 4th Ed. 2009, coauthors William P. Fox, Steven B. Horton and Maurice D. Weir
- TEACHING THE FIRST COURSE IN MATHEMATICAL MODELING, 4th Ed. 2009, coauthors William P. Fox, Steven B. Horton and Maurice D. Weir
- MATHEMATICS, METHODS AND MODELING FOR TODAY'S MATHEMATICS CLASSROOM, 2nd Ed., with John Dossey, Sharon McCrone and William P. Fox

## Heather S. Gregg, Assistant Professor

### EDUCATION:

- PhD - Massachusetts Institute of Technology, 2003  
*Political Science, International Relations and Security Studies*
- MA - Harvard Divinity School, 1998  
*Theological Studies, Islam*
- BA - University of California at Santa Cruz, 1993  
*Cultural Anthropology*

### NPS EXPERIENCE:

- Assistant professor, Department of Defense Analysis

### OTHER EXPERIENCE:

- 2003-2006, RAND Corporation, Santa Monica Office. Associate Political Scientist

### TEACHING INTERESTS:

- Religion
- Religious violence
- Political ideologies
- Counterinsurgency tactics and strategy
- Stability operations

### RESEARCH INTERESTS:

- Religiously motivated violence
- Countering Al Qaeda's ideology
- Identities and violence
- COIN and FID
- Ending insurgencies

### AWARDS:

- Energy, Technology and International Affairs Grant (MIT), Dissertation Completion Grant Summer 2003
- MacArthur Grant for Security Studies Research Topic: "Government Reactions to Contested Sacred Space: Jerusalem and Ayodhya," Summer 2002
- Mellon Foundation Grant on International Migration Research Topic: "The Role of Ethnic Lobbies in Securing Aid to the Homeland," Summer 2001
- MacArthur Grant for Security Studies Research Topic: "Hypotheses on Religion and War," Summer 2000
- Scholarship Recipient, Harvard Divinity School Academic years 1996-1997 and 1997-1998

### BOARDS/MEMBERSHIPS:

- Council on Foreign Relations, Term Member 2004-2009
- Women in International Security

SELECTED PUBLICATIONS:

- 
- “Setting a Place at the Table: Ending Insurgencies Through the Democratic Process,” *Small Wars and Insurgencies*, Vol. 22, No. 4, 2011, pp. 644-668.
- “U.S. Relations with Al Qaeda,” in *The Middle East and the United States, 5<sup>th</sup> Edition*, edited by David W. Lesch and Mark L. Haas, New York: Wiley-Blackwell, 2011.
- *The Three Circles of War: Understanding the Dynamics of Modern War in Iraq*, edited by Heather S. Gregg, Hy S. Rothstein, and John Arquilla, Washington, DC: Potomac Books, 2010.
- “Crafting a Better Grand Strategy to Fight the Global War on Terror: Lessons from the Early Years of the Cold War,” *Foreign Policy Analysis*, Vol. 6, No. 3, July 2010, pp. 237-255.
- “Fighting the Jihad of the Pen: Countering Al Qaeda’s Ideology,” *Terrorism and Political Violence*, Vol. 22, No. 2, 2010, pp. 294-314.
- “Beyond Population Engagement: Understanding the Goals of Counterinsurgency,” *Parameters*, Vol. 39, No. 3, 2009, pp. 18-31.
- “Fighting Cosmic Warriors: Lessons from the First Seven Years of the Global War on Terror,” *Studies in Conflict and Terrorism*, Vol. 32, No. 3, 2009, pp. 188-208.

## Michael Jaye, Associate Professor

### EDUCATION:

- PhD** – Rensselaer Polytechnic Institute, 1998  
*Applied Mathematics*
- MS** – Rensselaer Polytechnic Institute, 1990  
*Applied Mathematics*
- BS** – United States Military Academy, 1981  
*Mathematics, Nuclear Engineering*

### NPS EXPERIENCE:

- 2009-present Associate Professor

### OTHER EXPERIENCE:

- 1998-2009 Assistant Professor, Department of Mathematical Sciences, United States Military Academy, West Point, NY
- 1990-1994 Assistant Professor, Department of Mathematical Sciences, United States Military Academy, West Point, NY
- 1981-2009 Commissioned Officer, United States Army

### TEACHING INTERESTS:

- Mathematical Modeling
- Differential Equations
- Simulation

### RESEARCH INTERESTS:

- Cryosphere, climate models
- Models of human behavior, violence; agent-based modeling and simulation
- Rapid fielding of new equipment; user-interface models
- Geology

### AWARDS:

- 1981 Distinguished Graduate, United States Military Academy

### SELECTED PUBLICATIONS:

- Hromadka, T., Jaye, M., Phillips, M., Phillips, D. "A Mathematical Model of Cryospheric Response to Climate Changes" submitted to the American Society of Civil Engineering Journal of Cold Regions Engineering.
- Jaye, M., Burks, R. "Docking Two Models of Insurgency Growth," accepted for publication in International Journal of Operations Research and Information Systems.
- Jaye, M., Burks, R. "Facilitating Mathematical Modeling and Inquiry through Population Growth and Falling Body Problems," Computers in Education Journal, 2(4), Oct-Dec 2011.

## George W. Lober, Senior Lecturer

### EDUCATION:

- MA - California State University, Fresno, 1986
- BA - California State University, San Jose, 1970

### NPS EXPERIENCE:

- 1997–Present: Department of Defense Analysis

### OTHER EXPERIENCE:

- 1997 - 1999 - Chairman, Humanities Division, Monterey Peninsula College
- 1985 - Present - English Instructor, Monterey Peninsula College

### TEACHING INTERESTS:

- English Composition – Technical Writing
- Critical Thinking – Ethical Decision Making

### RESEARCH INTERESTS:

- Ethics

### AWARDS:

- Allen Griffin Award for Excellence in Teaching, The Community Foundation for Monterey County, 2007
- RADM Schieffelin Award for Teaching Excellence, Naval Postgraduate School, 2006
- Teacher of the Year, Monterey Peninsula College, 2003
- Teacher of the Year, Monterey Peninsula College, 1998
- Ruth Cable Memorial Prize for Poetry, 1996
- Outstanding Teacher of The Year, Congressional Award, 1988

### SELECTED PUBLICATIONS:

- "On Hiking to Indian Gardens," "Burial by Strangers," "Talk about Luck," *Lily*
- "A Letter from Home," "Departure," *Red Wheelbarrow*
- "Departure," "Bees," "The Urge," "Pre-Nine Eleven," *Porter Gulch Review*
- *A Bridge to There*, Hummingbird Press, 2009
- "the Donner Party," "What Has Been Lost," *MiPoesias*
- "Delay in Departure," "I Find a River When I Need to Pray," *Sand Hill Review*
- "Tor Headland," *Monterey Bay Poetry Anthology*
- "Car Pool in December," "My Father's Cup," *Central California Poetry Journal*
- *Shift of Light*, Hummingbird Press, 2002
- "My Father's Coup de Ville," *Homestead Review*
- "Past Recall," "Definition," *Quarry West*
- "Wish," "Space," "Your Ghost," *Eclectic Literary Forum*
- "Common Ground," Sage

## **Gordon McCormick, Professor**

### **EDUCATION:**

- PhD** – The Johns Hopkins University, 1986
- MA** - School of Advanced Studies , The John Hopkins University, 1986
- BA** - University of Wisconsin at Madison, 1975

### **NPS EXPERIENCE:**

- 2001 - 2011: Chairman, Professor of Defense Analysis
- 1998 - 2001: Chairman, Special Operations Academic Group
- 1992 - Present: Professor, Academic Associate for Special Operations

### **OTHER EXPERIENCE:**

- 1985 – 1992 Senior Social Scientist, Political Science Department, RAND
- 1981 - 1985 Senior Research Associate, Foreign Policy Research Institute
- 1982 - 1985 Lecturer, Political Science, University of Pennsylvania

### **TEACHING INTERESTS & RESEARCH INTERESTS:**

- Terrorism
- Sub-state conflict
- Irregular Warfare

### **SELECTED PUBLICATIONS:**

#### **PUBLICATIONS**

#### **Contributions to Collected Works**

- “A Strategic Perspective on Suicide Attack,” with L. Fritz, in Stuart Gottlieb (ed.), *DEBATING TERRORISM AND COUNTERTERRORISM -- CONFLICTING PERSPECTIVES ON CAUSES, CONTEXTS, AND RESPONSES*, CQ Press, 2010.
- “Terrorists and Sponsors – An Inquiry into Trust and Double-Crossing,” with G. Owen, in Nasrullah Memon, Jonathan D. Farley and David L. Hicks (eds.), *MATHEMATICAL METHODS IN COUNTERTERRORISM*, Springer, 2009.
- “Things Come Together: Symbolic Violence and Guerrilla Mobilization,” with F. Giordano, in Mark T. Berger and Douglas A. Borer (eds.), *THE LONG WAR – INSURGENCY, COUNTERINSURGENCY AND COLLAPSING STATES*, Routledge, 2008.
- “Maritime Terrorism,” in John D. Hattendorf (ed.), *OXFORD ENCYCLOPEDIA OF MARITIME HISTORY* Vol. 4, Oxford University Press, 2007.

"Bargaining Between Heterogeneous Groups," with G. Owen, in Myrna Wooders (ed.), *ESSAYS IN GAME THEORY AND MATHEMATICAL ECONOMICS*, Fields Institute Communications, American Mathematical Society, 2000.

"People's War," in James Ciment (ed.), *ENCYCLOPEDIA OF INTERNATIONAL CONFLICT*, Shoken Press, 1999.

"The Shining Path and Peruvian Terrorism," in David C. Rapoport (ed.), *INSIDE TERRORIST ORGANIZATIONS*, Columbia University Press, 1988.

"Soviet Strategic Aims and Capabilities in the Mediterranean," in *PROSPECTS FOR SECURITY IN THE MEDITERRANEAN*, Adelphi Papers, No. 229, International Institute of Strategic Studies, Spring 1988.

### **Articles, Monographs, Other Professional Studies**

"Terrorism, Information, and Secret Coalitions," with I. Linder, M. Koster, and G. Owen, *GAMES AND ECONOMIC BEHAVIOR*, under review.

"Manhunting: A Simple Search Game," *INTERNATIONAL GAME THEORY REVIEW*, with G. Owen, forthcoming 2010.

"The Logic of Warlord Politics," with L. Fritz, *THIRD WORLD QUARTERLY*, Vol. 30 (1), 2009.

"Finding a Moving Fugitive: A Game Theoretic Model of Search," with G. Owen, *COMPUTERS AND OPERATIONS RESEARCH*, Vol. 35 (6) 2008.

"Things Fall Apart: The Endgame Dynamics of Internal Wars," with S. Horton, L. Harrison, *THIRD WORLD QUARTERLY*, Vol. 28 (2), 2007.

"A Game Model of Counterproliferation, With Multiple Entrants," with G. Owen, *INTERNATIONAL GAME THEORY REVIEW*, Vol. 8 (3), 2006.

"Terrorism, Signaling, and Suicide Attack," with B. Hoffman, *STUDIES IN CONFLICT AND TERRORISM*, Vol. 27, August 2004.

"Factionalism, Violence, and Bargaining in Civil Wars," with G. Owen, *HOMO OECONOMICUS*, Vol. 20 (4), 2004.

"Terrorist Decision Making," *ANNUAL REVIEW OF POLITICAL SCIENCE*, 2003.

"Security and Efficiency in a Clandestine Organization," with G. Owen, *MATHEMATICAL AND COMPUTER MODELLING*, Vol. 31, 2000.

"The Revolutionary Odyssey of Che Guevara," *QUEEN'S QUARTERLY*, Summer 1998.

## **Nancy C. Roberts, Professor**

### **EDUCATION:**

- **PhD** - Stanford University, 1983
- **MA** - University of Illinois, 1968
- **BA** - University of Illinois, 1967
- **Diplome Annuel** – Cours de Civilization Francais, Sorbonne, Paris, France, 1966

### **NPS EXPERIENCE:**

- 2005-present: Professor of Defense Analysis.
- 1986 -present: Professor of Strategic Management (assistant; associate, full; joint appointment)
- 2000-2003: Professor of National Security Affairs (joint appointment).

### **OTHER EXPERIENCE:**

- 2006 - 2010: Co-Director of CORE, Department of Defense Analysis,
- 1986 - 2004 Co-Director, Institute for Whole Social Science, Carmel CA.
- 1987 - 1987 – Visiting Associate Professor, Stanford University, Graduate School of Business.
- 1982 - 1985 – Assistant Professor, University of Minnesota, Carlson School of Management,
- 1982 - 1982 - Santa Clara University, Graduate School of Business

### **TEACHING INTERESTS:**

- Wicked Problems
- Network Design,
- Visual Analytics
- Strategic Design

### **RESEARCH INTERESTS:**

- Wicked Problems
- Multi-Party Collaborations
- Strategic Management and Strategic Planning
- Public and Social Entrepreneurship
- Power and Politics
- Innovation
- Transformational Leadership and Charisma
- Ego Development

### **AWARDS:**

- Who's Who 1997 National Registry, Life Member in 2000.
- Freider Naschold Award for Best Paper, International Public Management Network Conference 2000, Sidney, Australia.
- Charles Levine Best Paper Award, Public Sector Division, Academy of Management, '89
- Instructional Recognition Award, NPS, Department of Systems Management, 1995.
- Fellow, Inter-University Seminar on Armed Forces and Society, 1991-present.
- Full membership, Sigma Xi, The Scientific Research Society, 1986-present.
- Gordon L. Starr Award, Outstanding Service to Students, University of Minnesota, 1983

### **SELECTED PUBLICATIONS:**

- The Age of Direct Citizen Participation. New York (2007)
- Transformative Power of Dialogue (2002)
- Transforming Public Policy: Dynamics of Policy Entrepreneurship and Innovation (1996)
- Troubled Waters: A Sourcebook of Cases in Management and Organization. (NPS, 1988).

- Roberts, N.C. Spanning Bleeding” Boundaries Redoux. Revised and reprinted in R. Durant (ed.). *Debating Public Administration and Public Policy*, Taylor and Francis in the ASPA Series on Public Administration and Public Policy (in press).
- Roberts, N.C. and Longley, C. *Against All Odds: Bottom-Up Entrepreneurship and Innovation in the Department of Defense*. S. P. Osborne & L. Brown (eds.). *Handbook of Innovation and Change in Public Sector Services*, Elgar, (in press).
- Roberts, N.C. 2011. Beyond Smokestacks and Silos: Open-Source, Web-Enabled Coordination in Organizations and Networks? *Public Administration Review*, Sept.-Oct.: 677-693.
- Roberts, N.C. 2011. Tracking and Disrupting Dark Networks: Challenges of Data Collection and Analysis. *Information Systems Frontiers*, 13(1): 5-19.
- Roberts, N.C. and Everton, S. 2011. Strategies for Combating Dark Networks. *Journal of Social Structure* 12(2):1-32.
- Chen, H., Denning, D., and Roberts, N.C. 2011. Dark Web Forum Portal 2.5: Evolution and Expansion. *Proceedings of the 2010 IEEE International Conference on Intelligence and Security Informatics*.
- Roberts, N.C. 2010. Web-based, Open-source Platforms for Collaboration. In J. Svara and J. Denhardt, eds. *The Connected Community: Local Governments as Partners in Citizen Engagement and Community Building*. Phoenix: Alliance for Innovation.
- Roberts, N.C. 2010. Entrepreneurship in Peace Operations. *Journal of Civil Society*, 6(01):1-21.
- Yulei Zhang, Shuo Zeng, Chun-Neng Huang, Li Fan, Ximing Yu, Yan Dang, Catherine Larson, Dorothy Denning, Nancy Roberts, Hsinchun Chen. 2010. Developing a Dark Web Collection and Infrastructure for Computational and Social Sciences. *Proceedings of the 2010 IEEE International Conference on Intelligence and Security Informatics*.
- Roberts, N.C. 2010. Spanning 'Bleeding' Boundaries: Humanitarianism, NGOs, and the Civilian-Military Nexus in the Post-Cold War Era. *Public Administration Review*, 70(2):212-222.

#### **BOARDS/MEMBERSHIPS**

- Public Management Review
- American Review of Public Administration
- International Public Management Review

## **Glenn E. Robinson, Professor**

### **EDUCATION:**

PhD - University of California, Berkeley, 1992

MA - University of California, Berkeley, 1988

BA - University of California, Berkeley, 1982

### **NPS EXPERIENCE:**

- Associate and Assistant Professor

### **OTHER EXPERIENCE:**

- 1991 - present - Research Associate, Center for Middle Eastern Studies, Univ of California, Berkeley.
- Associate Editor, Middle East Studies Association Bulletin.
- Research Fellow, Truman Institute of the Hebrew Univ of Jerusalem
- Fulbright Scholar, Univ of Jordan in Amman
- Johns Hopkins SAIS Fellow at Yarmouk Univ in Jordan
- Committee on Academic Freedom in the Middle East and North Africa
- Works with USAID on numerous development projects in the Middle East.
- 2003, Senior Political Scientist, The RAND Corporation

### **TEACHING INTERESTS:**

- Middle Eastern Area Studies
- Political Violence
- Islamic Fundamentalism
- Arab-Israeli Conflict
- State-building

### **RESEARCH INTERESTS:**

- Relationships between regional peace and domestic disorder in the Middle East.
- Collective action (i.e., revolutions, rebellions, and social movements) in Muslim Societies, especially Islamic Fundamentalism.
- The political economy of authoritarianism and democratic transitions.

### **AWARDS:**

- Outstanding Research Achievement, NPS, 1997
- Outstanding NPS Instructor, 1997, 2001

### **BOARDS/MEMBERSHIPS:**

- Middle East Studies Association
- Committee on Academic Freedom in the Middle East and North Africa
- American Political Science Association

**SELECTED PUBLICATIONS:**

- *Building a Palestinian State - The Incomplete Revolution* (Indiana University Press, 1997).
- Various articles published in the *International Journal of Middle East Studies*, *The Middle East Journal*, *Middle East Policy*, *Survival*, *Current History*, and *Journal of Palestine Studies*.

**KEYWORDS/TECHNOLOGIES:**

- **Keywords:** Middle East, Political Violence, Islamic Fundamentalism, Palestine, state-building

## Hy S. Rothstein, Senior Lecturer

### EDUCATION:

- PhD - Fletcher School of Law and Diplomacy, Tufts University, 2003
- MA - Tufts University, 2001
- MA - Command and General Staff College, 1987
- BS - USMA, 1974

### NPS EXPERIENCE:

- 2002-present Senior Lecturer, Department of Defense Analysis
- 1994-95 Senior Service Fellow, Center on Terrorism and Irregular Warfare
- 2004-present Academic Associate, Joint IO Program
- 2011-present Director, OSD IO Center of Excellence in Education, Research and Field Experimentation

### OTHER EXPERIENCE:

- 1999 - Director, Concept Developments, US Army John F. Kennedy Special Warfare Center
- 1995 - 1998 - Chief of Plans and Exercises, Joint Special Operations Command
- 1987 - 1989 - Military Advisor to the Armed Forces of El Salvador

### TEACHING INTERESTS:

- SOF Roles and Missions
- Irregular Warfare
- Psychological Warfare and Strategic Communication
- Military Deception

### SELECTED PUBLICATIONS:

- *Afghanistan and the Troubled Future of Unconventional Warfare* (Naval Institute Press, 2006).
- *The Three Circles of War* (Potomac Press, 2010).
- *Afghan Endgames-Strategy and Policy Choices for America's Longest War* (Georgetown University Press, 2012).
- Various articles and book chapters.

## **Kalev I. Sepp, Senior Lecturer**

### **EDUCATION:**

- Ph.D., American Diplomatic History, Harvard University, Cambridge, Mass. (2002)
- A.M., History, Harvard University, Cambridge, Mass. (1994)
- M.M.A.S., U.S. Army Command & General Staff College, Ft. Leavenworth, Ks. (1992)
- B.A., *cum laude*, English, The Citadel, Charleston, S.C. (1975)

### **NPS EXPERIENCE:**

- Senior Lecturer (2003-2007; 2009-Present)

### **OTHER EXPERIENCE:**

- Deputy Assistant Secretary of Defense for Special Operations and Counterterrorism (2007-2009)
- U.S. Military Academy, Assistant Professor of History (1994-1997)
- Harvard University, Resident Scholar, Eliot House, Harvard College (1999-2001)
- U.S. Army, officer (1975-1999)

### **TEACHING INTERESTS:**

- National Security Strategy
- Irregular Warfare & Unconventional Warfare
- Special Operations
- Military History

### **RESEARCH INTERESTS:**

- Strategy & Policy
- Counterterrorism
- Counterinsurgency
- Undeclared Wars
- Intelligence

### **AWARDS:**

- Secretary of Defense Medal for Exceptional Civilian Service
- Department of Defense Medal for the Global War on Terrorism
- Department of the Navy Superior Civilian Service Medal
- Finalist, Schefflin Award for Excellence in Teaching, U.S. Naval Postgraduate School, 2005
- Grimes Award for Excellence in Teaching, Harvard University, 2000

### **BOARDS/MEMBERSHIPS:**

- Expert Member, Baker-Hamilton Commission, a.k.a. The Iraq Study Group (2006)
- Insurgency Board, RAND Corporation (2010-Present)
- Editorial Board, *Small Wars Journal* (2009-Present)
- Advisory Board, Minerva "Terrorism, Governance and Development" Project (2010-Present)
- Associate, American Enterprise Institute "Land Power" Project (2005-2007)
- Center for Terrorism and Irregular Warfare, U.S. Naval Postgraduate School (2003-Present)
- NPS Research Committee (2003-2006)

## SELECTED PUBLICATIONS:

- “Special Forces,” chapter in *Understanding Counterinsurgency Warfare: Doctrine, Operations, Challenges*, T. Rid and T. Keaney, eds. (Routledge, 2010).
- “‘To Free the Oppressed’ – NATO Special Forces in Future Operations,” chapter in *Counterinsurgency: The Challenge for NATO Strategy and Operations*, C. Schnaubelt, ed. (NATO Defense College, 2010).
- Review of *Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One*, by David Kilcullen (in *Political Science Quarterly*, June 22, 2010).
- “The U.S. Army and Counterinsurgency in Iraq,” chapter in *War in Iraq: Planning and Execution*, T. Mahnken and T.A. Keaney, eds. (New York: Routledge, 2007).
- “We didn’t know what we were getting into” [quote from Maj. Gen. Paul Eaton], chapter in *Hope Is Not a Plan: The War in Iraq from Inside the Green Zone*, T. Mowle, ed. (Praeger, 2007).
- “From ‘Shock and Awe’ to ‘Hearts and Minds:’ The fall and rise of US counterinsurgency capability in Iraq,” *Third World Quarterly* (Vol. 23, No. 2, 2007).
- “Best Practices in Counterinsurgency,” *Military Review* (May-June 2005), reprinted in Arabic, Spanish and Portuguese.
- *Weapon of Choice: U.S. Army Special Operations in Afghanistan*, with R. Kiper, J. Schroder, and C. Briscoe (CGSC Press, 2004).
- “Case Study: The Maoist Insurgency in Nepal” (RAND, 2003).
- Review essay, Dana Priest’s *The Mission: Waging War and Keeping Peace with America’s Military*, in *USNI Proceedings* (Sept. 2003).
- “The Renaissance Force,” with Brig. Gen. R.W. Potter, Jr., chapter in *Leadership: The Warrior’s Art* (Carlisle: Army War College Foundation Press, 2001).
- “Die atomare Vision. Der Einfluß von Nuklearwaffen auf die Führung der US Army 1952 bis 1958,” chapter in *Fuehrungsdenken in europaeischen und nordamerikanischen Steitkraefen im 19. und 20. Jahrhundert*, trans. Gerhard Gross (Berlin: MGFA, 2001).

## **Anna Simons, Professor**

### **EDUCATION:**

**PhD** - Harvard University, 1992

**BA** - Harvard College, 1979

### **NPS EXPERIENCE:**

- 2008-present: Professor, Department of Defense Analysis
- 1998-2008: Associate Professor, Department of Defense Analysis

### **OTHER EXPERIENCE:**

- 1992 - 1998 - Assistant/Associate Professor, University of California, Los Angeles
- 1996 - 1998 - Associate Director, African Studies, University of California, Los Angeles

### **TEACHING INTERESTS:**

- Military Advisor
- Anthropology of Conflict
- Low Intensity Conflict: Africa
- Political Anthropology: Methods of Social Control

### **RESEARCH INTERESTS:**

- Cultures of war
- Military anthropology
- Ethnographic intelligence

### **AWARDS:**

- Top 5%, RADM Schieffelin Award for Teaching Excellence, 2001

### **BOARDS/MEMBERSHIPS:**

- Inter-University Seminar on Armed Forces & Society (council member)
- Armed Forces & Society (editorial board)
- Studies in Conflict & Terrorism (editorial board)
- CTX (co-executive editor)

### **SELECTED PUBLICATIONS:**

- The Sovereignty Solution: A Commonsense Approach to Global Security. Annapolis: Naval Institute Press, 2011.
- The Company They Keep: Life Inside the U.S. Army Special Forces. New York: The Free Press, 1997.
- Networks of Dissolution: Somalia Undone. Boulder: Westview Press, 1995

## **DAVID TUCKER**

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Naval Postgraduate School  
589 Dyer Road  
Monterey, California 93943  
831-656-3754; dctucker@nps.edu

### **Employment**

- 1998-Present Associate Professor, Defense Analysis, Naval Postgraduate School  
Co-Director, Center on Terrorism and Irregular Warfare
- 1991-1998 Office of the Assistant Secretary of Defense for Special Operations  
and Low-Intensity Conflict  
Acting Director, Policy Planning, 1995-1998  
Deputy Director, Policy Planning, 1993-1995  
Staff, 1991-1993
- 1983-1991 Foreign Service Officer, Africa and Europe
- 1982-1983 Director, International Seminar, Claremont Institute
- 1980-1982 William Rainey Harper Instructor in the Social Sciences, University of Chicago
- 1978-1980 Lecturer, Harvey Mudd College

### **Education**

- Ph.D. Claremont Graduate School, 1981, History  
Dissertation: Enlightened Republicanism: Thomas Jefferson's *Notes on the State of Virginia*
- B.A. Marlboro College, 1975, Philosophy and Greek

### **Publications**

#### **Books**

- Illuminating The Dark Arts of War: Terrorism, Sabotage and Subversion in Homeland Security and the New Conflict* (Continuum, 2012)
- Enlightened Republicanism: A Study of Jefferson's Notes on the State of Virginia* (Lexington Books, 2008)
- U.S. Special Operations Forces*, with Christopher Lamb (Columbia University Press, 2007)
- Skirmishes at the Edge of Empire, The United States and International Terrorism* (Praeger, 1997)
- Statecraft and Power*, eds. David Tucker and Christopher Harmon (University Press of America, 1994)

#### **Monograph**

- Confronting the Unconventional: Innovation and Transformation in Military Affairs*, Letort Paper, U. S. Army War College, Carlisle Barracks, PA, October 2006

#### **Articles and Chapters**

- "Pathways to Terror: Finding Patterns Prior to Attack," *Journal of Policing, Intelligence and Counter Terrorism*, 5, 1(2010), 75–85, with Michael Freeman and Steffen Merten
- "Jihad Dramatically Transformed? Sageman on Jihad and the Internet," *Homeland Security Affairs* 6, 1(January, 2010)
- "Terrorism, Networks, and Strategy: Why the Conventional Wisdom is Wrong," *Homeland Security Affairs* IV, no. 2 (June 2008)
- "The Present and Future Strategic Utility of Special Operations Forces," in ed. Richmond M. Lloyd, *Defense Strategy and Forces: Setting Future Directions*, Proceedings of A Workshop Sponsored by the William B. Ruger Chair of National Security Economics (Newport, Rhode Island: Naval War College, 2007).
- "The Misleading Problem of Failed States: A 'Socio-geography' of Terrorism in the post-9/11 Era," *Third World Quarterly*, 28 (2007), 387 – 401 (with Anna Simons)
- "The War on Terrorism and the Western Way of Warfare," in Bradley C. S. Watson, ed., *The West at War* (Lanham, Maryland: Lexington Books, 2006)
- "Restructuring Special Operations Forces for Emerging Threats," *Strategic Forum* (National Defense University, January, 2006)
- "Counter-Terrorism and the Perils of Preemption: Problems of Command and Control," in *Striking First: The Preemptive Doctrine and the Reshaping of US Foreign Policy* (Palgrave MacMillan, 2004)
- "United States Special Operations Forces and the War on Terrorism," with Anna Simons, *Small Wars and Insurgencies* (Spring, 2003)
- "John Quincy Adams on Principle and Practice," in *History of American Political Thought*, eds. Jeff Sikkenga and Paul-Bryan Frost (Lexington Press, 2003)
- "What's New about the New Terrorism and How Dangerous Is It?" *Terrorism and Political Violence* (Autumn, 2001)
- "Combating International Terrorism," in *The Terrorism Threat and U.S. Government Response: Operational and Organizational Factors* ed. James M. Smith (U.S. Air Force Institute for national Security Studies, 2001)
- "The RMA and the Interagency: Knowledge and Speed Vs. Sloth and Ignorance?" (*Parameters*, Fall, 2000)
- "Comment les Conflits Non-Conventionnels Vont-ils Evoluer?" in *Puissances et Influences* (Fayard, 2000) eds. Gérard Chaliand, Arnaud Blin, François Géré.
- "Fighting Barbarians," *Parameters* (Summer, 1998)
- "Responding to Terrorism," *Washington Quarterly* (December, 1997)
- "Engaging in Humanitarian Operations: Parameters for the Arguments," in *Two Perspectives on Interventions and Humanitarian Operations*, ed. Earl H. Tilford, Jr. (Army War College, 1997)
- "Peacetime Engagements," with Christopher J. Lamb in *America's Armed Forces: A Handbook of Current and Future Capabilities*, ed. Sam C. Sarkesian (Greenwood Press, 1996)
- "American Support for Insurgency and Counterinsurgency in the 1980s: Lessons for the Future," in *Statecraft and Power*, eds. David Tucker and Christopher Harmon (University Press of America, 1994)
- "Facing the Facts: The Failure of Nation Assistance," *Parameters* (Summer, 1993)
- "'Hope to the World for all Future Time,' America and the World after the Cold War," Occasional Paper, Ashbrook Center, Ashland University (February 1992)
- "Jefferson and the Practice of Empire," in *Natural Right and Political Right*, eds. Thomas B. Silver and Peter W. Schramm (Carolina Academic Press, 1984)
- "Reconsidering Vietnam," Occasional Paper No. 7 (Claremont Institute, 1983)

- "Federalism in Indochina," *Grand Strategy: Countercurrents* (November, 1982)
- "Jefferson and the Foundations of American Strategy," *Grand Strategy: Countercurrents* (April, 1982)
- "Wealth and Commonwealth," *Reviews in American History*, (September, 1981)
- "The Political Thought of Jefferson's *Notes on the State of Virginia*," *The American Founding: Politics, Statesmanship, and the Constitution*, eds. Ralph A. Rossum and Gary L. McDowell (Kennikat Press, 1981)

### Research Reports

- "Improving Human Intelligence in the War on Terrorism: The Need for an Ethnographic Capability," Office of Net Assessment, Office of the Secretary of Defense, December 2004 (co-author Anna Simons)
- "Terrorism to 2015," (editor) Special Operations Command, September, 2004
- "Executive Summary," "Introduction," "The Psychology of Terrorists and Terrorist Organizations," "Summary and Recommendations" (author)
- "How Failed States Will Affect Terrorism" (co-author Anna Simons)
- "The Future of Armed Resistance: Cyberterror? Mass Destruction?" Defense Intelligence Agency, October, 2000
- "Major Force Program-11 and the Implications for a New Major Force Program," Institute of Defense Analyses, November 2000

### Reviews

- "Executive Secrets: Covert Action and the Presidency," *White House Studies* 6(2006)
- "Bureaucracy and Derring-do, A review of *Ghost Wars: The Secret History of the CIA, Afghanistan, and Bin Laden, from the Soviet Invasion to September 10, 2001* and *A Pretext for War: 9/11, Iraq, and the Abuse of America's Intelligence Agencies*" *Claremont Review of Books* (Fall, 2004)
- "A Long, Hard Slog, A Review of *No End to War: Terrorism in the Twenty-First Century; Terrorism, Afghanistan, and America's New Way of War; Losing Bin Laden: How Bill Clinton's Failures Unleashed Global Terror; Why America Slept: The Reasons Behind Our Failure to Prevent 9/11*" *Claremont Review of Books* (Winter, 2003)
- "Extremists All! A review of *The Terrorist Next Door: The Militia Movement and the Radical Right*," *Claremont Review of Books* (Fall, 2003)
- "Terrorism and US Foreign Policy," *International Affairs* (January, 2002)
- The Challenge of Change: Military Institutions and New Realities, 1918-1941 and After the Trenches: The Transformation of U.S. Army Doctrine, 1918-1939, Armed Forces and Society* 28(Fall, 2001)
- "Settling Up? Reparations for Slavery," *Claremont Review of Books*, 1(Winter, 2001)
- The Myth of Global Chaos, Parameters*, (Winter 1999-2000), 129-30.
- The Imperial Temptation, The New World Order and America's Purpose and Empire of Liberty: The Statecraft of Thomas Jefferson*, *Strategic Review* (Winter, 1993)

### Professional Activities

Editorial Board, Homeland Security Affairs Journal, 2009-present

### **Courses Taught in the Defense Analysis Department**

Intelligence in the Information Age  
 Human Intelligence in Irregular Warfare  
 American Approach to Small Wars  
 International Terrorism  
 Countering International Terrorism  
 The Unconventional Threat to Homeland Security  
 Regional Seminar in Low-Intensity Conflict: Europe  
 Analytical Methods  
 Deterrence, Coercion and Crisis Management  
 Espionage  
 History of Special Operations Forces

### **Presentations**

- “What Kind of Country Shall We Have? Fear and Freedom in the Twenty-First Century,” Ashland University, March 2012
- “Terrorism and Civil Liberties,” Kenyon College, October 2011
- “Terrorism, Networks and Strategy: Why the Conventional Wisdom is Wrong,” Executive Leadership Program, Center on Homeland Defense and Security, (twice a year 2009-)
- “Terrorism in homeland Security,” Atlanta Regional Homeland Security Task Force (2009)
- “Networks and Terrorism,” Presentation at the Joint Special Operations University, 2008
- “The Present and Future Strategic Utility of Special Operations Forces,” at *Defense Strategy and Forces: Setting Future Directions*, a Workshop Sponsored by the William B. Ruger Chair of National Security Economics, naval War College (2007)
- “The Future Geography of Terrorism,” Conference on Emerging Terrorist Threats, Monterey Institute of International Studies, August 30, 2005
- “Metrics for the War on Terrorism,” Joint Staff, April 2004
- “Global Terrorism,” JOINT VISION 03, Allied Command Atlantic, October 10, 2003
- “Terrorism as Strategic Competition,” JOINT VISION 03, Allied Command Atlantic, October 10, 2003
- “The Organizational and Operational Dynamics of Terrorist Groups,” Joint Warfighting Analysis Center, September 26 and November 7, 2002
- “The New Terrorism,” Fort Bragg, June 2002
- “Terrorism: The Strategic Competition,” Pendleton Warfighting Lecture, Camp Pendleton, January 25, 2002
- “Statesmanship and Grand Strategy: A Roundtable in Honor of the Teaching of Harold Rood,” American Political Science Association Annual Meeting, September, 2001
- “Innovating to Meet Unconventional Threats,” Biennial Meeting of the Interuniversity Seminar on the Armed Forces and Society, October 2000
- “Future Terrorism,” F. B. I. National Academy, September, 2000
- “The “New Terrorism,” American Political Science Association Annual Meeting, September, 2000
- “New Missions for the Military,” Foundation for Defense Studies, Paris, France, October 1999
- “Combating International Terrorism,” Institute for National Security Studies, United States Air Force Academy, July, 1999
- “Emerging Threats to International Security,” Foundation for Defense Studies, Paris, France, October 1998

“Engagement Criteria for Humanitarian Operations,” Patterson School of Diplomacy and International Commerce, University of Kentucky, 1995

“Post-Cold War Strategy,” International Studies Association, Annapolis, Maryland, 1993

### **Conferences Organized or Chaired**

Muslim Communities in Homeland Security, August 3-5, 2009

Understanding Terrorist Networks and Organizations, April 5-7, 2005

Information Operations Curricular Conference, September 17, 2004

Information Operations Education Requirements Conference, July 23-24, 2002

The Future of Armed Resistance: Cyberterror? Mass Destruction?, May 15-17, 2000

### **Committees**

2007-Present Research Board, Naval Postgraduate School

2002-2005 Academic Council, Naval Postgraduate School

Curriculum and Degree Requirements Committee

2002 to 2008 Chairman, Search Committees, Department of Defense Analysis

### **Funded Research Projects**

Vulnerabilities of Defense Department Databases to Non-state Actor Attack, Principal Investigators, David Tucker, Brain Greenshields, 2009-2011, Defense Manpower Data Center

Operational Planning in Maritime Terrorist Attacks, Principal Investigators, David Tucker, Michael Freeman, 2007-2008, Office of Naval Intelligence

Understanding Terrorist Networks and Organizations, Principal Investigator, Defense Policy Analysis Office, 2005

Improving Human Intelligence: The Need for an Ethnographic Approach, Office of Net Assessment, 2004, Principal Investigators, David Tucker, Anna Simons

Information Operations Education Requirements, Principal Investigator, 2003-2004

Terrorism to 2015, Principal Investigator, Special Operations Command, 2004

Future Strategy for the War on Terrorism, Participant, Office of Net Assessment, 2004

Research and Analysis of Terrorist Information Operations, Principal Investigators, David Tucker, John Arquilla, Defense Intelligence Agency, 2000-2002

Military Innovation: The Case of Special Operations Forces, Principal Investigator, Smith Richardson Foundation, 1999-2000

### **Consulting**

April–September, 2008 Project on National Security Reform

July – August, 2006 Summer Hard Problem Program, Office of the Deputy Director of National Intelligence – Analysis, Bedford, Massachusetts

March, 2003 – Present Designing a Master’s Program in American History and Government, Ashbrook Center, Ashland University

September 2003 – August 2004 U.S. counterterrorism policy and the Department of Defense Response to Terrorism, National Commission on Terrorist Attacks upon the United States (9-11 Commission)

September, 2002 – March, 2003 Red Teaming Terrorist Operations, Hicks and Associates, SAIC

November, 2001 – August, 2003 Supporting Counterterrorism Operational Analysis, Joint Warfighting Analysis Center, through Booz Allen Hamilton

September 2002 – March 2003 Transformation Planning Guidance, Office of the Deputy Assistant Secretary of Defense for Plans and Resources

July, 2000 – November, 2000      Study of Major Force Program 11, Institute of Defense Analyses

**Offices**

Member, Board of Advisors, Ashbrook Center, Ashland, Ohio

Member, Board of Visitors, Marine Corps University, Quantico, Virginia, 1995-2009

**Languages**

French, reading and speaking

**Awards**

The LCDR David L. Williams Outstanding Professor Award, 2005

Civilian Exceptional Service Award, Office of the Secretary of Defense, 1999

Award for Excellence, Office of the Secretary of Defense, 1993

**Training**

Instructional Design Workshop, Naval Postgraduate School, 2000

Contemporary Executive Development, George Washington University, 1996

# APPENDIX C

## SELECTED FACULTY PUBLICATIONS SINCE 2009

### **Books**

- Arquilla, J., Insurgents, Raiders, and Bandits, (Chicago: Ivan R. Dee, 2011)
- Berger, M., and D. Borer, eds., The Long War: Insurgency, Counterinsurgency and Collapsing States, (London: Routledge Research in Comparative Politics Series, 2008)
- Blanken, L., Rational Empires: Institutional Incentives and Imperial Expansion, (Chicago: University of Chicago Press, 2012)
- Everton, S., Disrupting Dark Networks, (Cambridge and New York: Cambridge University Press, 2012)
- Fox, W. P., Frank R. Giordano, Steve Horton, and Maurice Weir, A First Course in Mathematical Modeling, 4<sup>th</sup> Edition, (Belmont, CA: Brooks/Cole Publishing Co., 2009)
- Fox, W. P., Mathematical Modeling with Maple, (Boston: Cengage Publishing, 2012)
- Gregg, Heather S., Hy S. Rothstein, and John Arquilla, Eds., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010)
- Robinson, G., Jihadi Information Operations, (Stanford University Press) *forthcoming*
- Rothstein, H., and John Arquilla, Eds., Afghan Endgames: Strategy and Policy Choices for America's Longest War, (Washington, DC: Georgetown University Press, 2012)
- Simons, A., Joe McGraw, and Duane Lauchengco., The Sovereignty Solution: A Commonsense Approach to Global Security, (Annapolis: Naval Institute Press, 2011)
- Strawser, B., The Ethics of Drone Wars, (Oxford University Press) *forthcoming*
- Tucker, D., Illuminating the Dark Arts of War: Terrorism, Sabotage and Subversion in Homeland Security and the New Conflict, (New York: Continuum International Publishing Group, 2012)

### **Chapters in Books**

- Arquilla, J., "Information Wars," in the Encyclopedia of Globalization and Security, (Praeger, 2009)
- Arquilla, J., "Conflict, Security and Computer Ethics," in Luciano Floridi, ed., The Cambridge Handbook of Information and Computer Ethics, (Cambridge University Press, 2010).
- Berger, M., "The End of Empire and the Cold War" in Mark Beeson, ed., Contemporary Southeast Asia: Regional Dynamics, National Differences, (Basingstoke: Palgrave Macmillan, second revised edition, 2009)

Blanken, L., and Scott Sigmund Gartner, "Beyond Victory and Defeat," in H. Rothstein and J. Arquilla, eds., Afghan Endgames: Strategy and Policy Choices for America's Longest War, (Washington, DC: Georgetown University Press, 2012)

Borer, D., and J. Arquilla, "Strategic Dimensions of the Iraq Conflict," in Heather Gregg, Hy Rothstein, and John Arquilla, eds., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010).

Denning, D. E., "Terror's Web: How the Internet is Transforming Terrorism," in Y. Jewks and M. Yar, eds., Handbook on Internet Crime, (Willan Publishing, 2010).

Denning, D.E., "The Internet and the Iraq Conflict," in Heather Gregg, Hy Rothstein, and John Arquilla, eds., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010).

Denning, D. E., "Cyber Conflict as an Emergent Social Phenomena," in T. Hold and B. Schell, eds., Corporate Hacking and Technology-Driven Crime: Social Dynamics and Implications, (IGI Global, 2011), pp. 170-186.

Fox, W. P., "System Modeling of US Efforts as Applied to the War on Terrorism in Iraq and Iraq's Infrastructure Resiliency: the Indicators of Force Multipliers (INFORM) Model," in Heather Gregg, Hy Rothstein, and John Arquilla, ed., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010).

Freeman, M., "Insurgent and Terrorist Finances in Iraq," in Heather Gregg, Hy Rothstein, and John Arquilla, ed., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010).

Gregg, H., "U.S. Relations with Islamic Organizations in the Middle East," in Robert E. Looney, ed., A Handbook of US-Middle East Relations, (New York: Routledge, 2009).

Gregg, H., "U.S. Relations with Al Qaeda," in David L. Lesch and Mark L. Haas, eds., The Middle East and the United States, 5<sup>th</sup> Edition, (New York: Wiley-Blackwell, 2011).

McCormick, G., and L. Fritz, "A Strategic Perspective on Suicide Attack," in Gottlieb, ed., Debating Terrorism and Counterterrorism—Conflicting Perspectives on Causes, Contexts, and Responses (CQ Press, 2010).

McCormick, G., and G. Owens, "Terrorists and Sponsors—An Inquiry into Trust and Double-crossing," in Nasrullah Memom, Jonathan D. Farley and David L. Hicks, eds., Mathematical Methods in Counterterrorism (Springer, 2009)

Roberts, N.C., "Web-based, Open-source Platforms for Collaboration," in J. Svava and J. Denhardt, eds., The Connected Community: Local Governments as Partners in Citizen Engagement and Community Building, (Phoenix: Alliance for Innovation, 2010).

Robinson, G., "Identity Politics and the War in Iraq," in Heather Gregg, Hy Rothstein, and John Arquilla, ed., The Three Circles of War: Understanding the Dynamics of Conflict in Iraq, (Potomac Books, Inc, 2010).

Sepp, K., "Special Forces," in Thomas Rid and Thomas Keaney, ed., Understanding Counterinsurgency: Doctrine, Operations, and Challenges, (Routledge, 2010).

Sepp, K., "To Free the Oppressed—NATO Special Forces in Future Operations," in C. Schnaubelt, ed., Counterinsurgency: The Challenge for NATO Strategy and Operations, (NATO Defense College, 2010).

### **Articles in Conference Proceedings**

Alt, Jonathan, Stephen Lieberman, and Sean Everton, "Violent Extremist Network Representation and Attack the Network Course of Action Analysis in Social Simulation," in *2010 Spring Simulation Multiconference, Military Modeling and Simulation Symposium*. Orlando, FL.

Chen, H., Denning, D., and Roberts, N. C., "Dark Web Forum Portal 2.5: Evolution and Expansion," *Proceedings of the 2010 IEEE International Conference on Intelligence and Security Informatics*, ISI 2010.

Fox, W. P., "The Battle of Trafalgar: An Example of Modeling with Technology," *Proceeding of the 20<sup>th</sup> ICTCM*, March 2009, pages 93-97.

Zhang, D., Zeng, S., Huang, C-N, Fan, L., Yu, X., Dang, Y., Larson, C., Denning, D., Roberts, N., Chen, H., "Developing a Dark Web Collection and Infrastructure for Computational and Social Sciences," *Proceedings of the 2010 IEEE International Conference on Intelligence and Security Informatics*, ISI 2010.

### **Major Journal Articles**

Arquilla, J., "Realities of War," *Third World Quarterly*, Vol. 30, No. 1 (2009)

Blanken, L., and Jason Lepore, "Slowing Down to Keep the Lead in Military Technology," *Defense and Peace Economics*, 22(3)(2011), pp. 317-334.

Borer, D., Everton, S., and Nayve, M., "Global Development and Human (In)security: Understanding the Rise of the Rajah Solaiman Movement and Balik Islam in the Philippines." *Third World Quarterly*, Vol 30, No 1 (2009)

Borer, D., and Steve W. Twing, "Blundering into Baghdad: An Analysis of Strategy, Structure, Principals, and Agents," *Cambridge Review of International Affairs*, Vol. 24, No. 3, (2011).

Denning, D. E., "Barriers to Entry: Are They Lower for Cyber Warfare?" *IO Journal*, (April 2009), pp. 6-10.

Denning, D. E., "Comments on Responsibility of and Trust in ISPs," *Knowledge, Technology & Policy*, Vol. 23, No. 3 (2010), pp. 399-401.

Everton, S. F., "Network Topography, Key Players and Terrorist Networks," *Connections*, (2011).

Fox, W. P., "Discrete Combat Models: Investigating the Solutions to Discrete Forms of Lanchester's Combat Models," *International Journal of Operations Research and Information Systems (IJORIS)*, 1(1), (Jan-Mar 2010), pp 16-34.

Fox, W. P., J. Vesecky, and K. Laws, "Detecting Suicide Bombers," *Journal of Defense Modeling and Simulation*, 8(1)(2011), pp. 5-24 (lead article for special IED issue).

Fox, W. P., "Teaching the Application of Optimization in Game Theory's Zero-sum and Non Zero-sum Games," *International Journal of Data Analysis Techniques and Strategies*, 2(3)(2010), pp. 258-284.

Fox, W. P., and Patrick J. Driscoll, "Modeling with Dynamic Systems for Decision-making and Analysis," *Computers in Education Journal*, 2(1)(2011), pp. 19-25.

Freeman, M., David Tucker, and Steffen Merten, "Pathways to Terror: Finding Patterns Prior to an Attack," *Journal of Policing, Intelligence and Counter Terrorism*, Vol. 5, No. 1, (2010).

Freeman, M., "The Sources of Terrorist Financing: Theory and Typology," *Studies in Conflict and Terrorism*, Vol. 34, No. 6, (June 2011).

Freeman, M., "The Headless Horseman: A Theoretical and Strategic Assessment of Leadership Targeting," *Journal of Conflict Studies*, Vol. 30, (2010).

Gregg, H., "Beyond Population Engagement: Understanding the Goals of Counterinsurgency," *Parameters*, Vol. 39, No. 3, (2009).

Gregg, H., "Fighting Cosmic Warriors: Lessons from the First Seven Years of the Global War on Terror," *Studies in Conflict and Terrorism*, Vol. 32, No. 3, (2009).

Gregg, H., "Fighting the Jihad of the Pen: Countering Al Qaeda's Ideology," *Terrorism and Political Violence*, Vol. 22, No. 2, (2010), pp. 294-314.

Gregg, H., "Setting a Place at the Table: Ending Insurgencies Through the Democratic process," *Small Wars and Insurgencies*, Vol. 22, No. 4, (2011), pp. 644-668.

Jaye, M., and Burks, R., "Facilitating Mathematical Modeling and Inquiry through Population Growth and Falling Body Problems," *Computers in Education Journal*, 2(4)(Oct-Dec 2011).

Massey, D. and Denning, D. E., "Securing the Domain Name System," guest editor's introduction to special issue on DNS, *IEEE Security & Privacy*, Vol. 7, No. 5, (September/October 2009), pp. 11-13.

Roberts, N.C., "Entrepreneurship in Peace Operations," *Journal of Civic Society*, 6(01), (2010), pp. 1-21.

Roberts, N.C., "Response to Commentaries of Spanning 'Bleeding Boundaries,'" *Public*

*Administration Review*, (2010).

Roberts, N.C., "Spanning 'Bleeding' Boundaries: Humanitarianism, NGOs, and the Civilian Military Nexus in the Post-Cold War Era," *Public Administration Review*. 70(2), (2010), pp. 212-222.

Roberts, N.C., "Tracking and Disrupting Dark Networks: Challenges of Data Collection and Analysis," *Information Systems Frontiers*, 13(1), (2011), pp. 5 – 19.

Roberts, N.C. and Everton, S., "Strategies for Combating Dark Networks," *Journal of Social Structure*, 12(2), (2011), pp. 1 – 32.

Roberts, N. C., "Beyond Smokestacks and Silos: Open-Source, Web-Enabled Coordination in Organizations and Networks," *Public Administration Review* (Sept-Oct, 2011), pp. 677-693.

### **Research for OSD**

Arquilla, J., Monograph on *Aspects of Netwar & the Conflict with al Qaeda* (September 2009)

Arquilla, J., Monograph on *Paradoxes of the Afghan Netwar* (2011)

Freeman, M., and Hy Rothstein, Eds., Monograph on *Gangs and Guerillas: Ideas from Counterinsurgency and Counterterrorism* (April 2011)

Gregg, H., "Employment Handbook for Fighting Counterinsurgencies: A toolkit for how to build rapport, create jobs and work towards a viable state," *Naval Postgraduate School Technical Report*, NPS-DA-09-001, (November 2009).

### **Magazine article**

Arquilla, J., "The New Rules of War," in *Foreign Policy* (March/April 2010), cover article

Arquilla, J., "The Coming Cyber Way," in *The National Interest* (July 29, 2011)

Arquilla, J., "Cyberwar is Already Upon Us," *Foreign Policy* (March/April 2012)

Arquilla, J., "From Blitzkrieg to Bitskrieg: The Military Encounter with Computers," *Communications of the ACM* (October 1, 2011)

### **Editorials**

Arquilla, J., "The Coming Swarm," *New York Times*, February 15, 2009

Arquilla, J., "How to Lose a Cyberwar," *Foreign Policy* (November/December 2009)

# APPENDIX D

FY09 SPONSORED PROGRAMS

DEPT: DA

PI	TYPE	SPONSOR	FULL_TITLE	PROJTOT_09	EXPIRES	ACCTID
ARQUILLA	RRO	OSD	NETWORK WARFARE:WHAT'S NEXT? FY09 (U) INFORMATION OPERATIONS CENTER OF EXCELLENCE	50000	9/30/2010	RDAEF
BORER	RRO	OSD	COMMON OPERATIONAL RESEARCH ENVIRONMENT (CORE) LAB PROGRAM FY09	255000	9/30/2010	RDAE9
BORER	RRO	OUSD	CORE LAB SOFTWARE REQUIREMENT	147038.97	9/30/2009	RDA81
BORER	REN	NETSAFA	COMMON OPERATIONAL RESEARCH ENVIRONMENT (CORE) - INTERNATIONAL COLLABORATIVE EFFORT (ICE) INITIATIVE	580000	9/30/2010	KDAX4
BUDDEN	RSO	OSD	DEFENSE COUNTER TERRORISM TECHNOLOGY	359605	9/30/2009	QDA26
GREENSHIELDS	RSN	NETSAFA	UNDERSTANDING DARK NETWORKS NPS/CTFP 2ND ANNUAL SYMPOSIUM	72200	9/30/2009	QDAAO
MCCORMICK	RRO	OSD	DENENSE ANALYSIS INSURGENCY AND MANHUNTING PROJECTS (U)	315000	9/30/2010	RDAJF
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	74719.18	9/30/2009	KDBPS
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	342642.54	9/30/2009	KDAPS
ROBERTS	REN	NETSAFA		616302	9/30/2010	
ROTHSTEIN	RRO	OUSD	INFORMATION OPERATIONS (IO) TO DEFEAT COALITION ENEMIES IN OEF FY09 (U)	300000	9/30/2010	RDACP

FY09 SPONSORED PROGRAMS

DEPT: DA

PI	TYPE	SPONSOR	FULL_TITLE	PROJTOT_09	EXPIRES ACCTID
ROTHSTEIN	RRN	ONR	INFORMATION OPERATIONS (IO) RESEARCH, ANALYSIS AND OPERATIONAL SUPPORTW OF OEF	140000	12/31/2009 RDA6T
SIMONS	REN	NETSAFA	INTEROPERABILITY IN AN IRREGULAR WARFARE WORLD COURSE MATERIALS AND PROGRAM OF INSTRUCTION DEVELOPMENT	79800	9/30/2010

DEPT TOTAL:

3,332,307.69

FY10 SPONSORED PROGRAMS

DEPT: 62 (DA)

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE IN FY10	EXPIRES	ACCTID
ARQUILLA	RSO	SOCCENT	IRANIAN FUTURES WORKSHOP, I	13,950.00	9/30/2010	R62SM
ARQUILLA	RRO	DOD WHS	WINNING IN AFGHANISTAN-SEPARATION ILLUSION FROM REALITY FY10	300,000.00	9/30/2011	R62OT
ARQUILLA	RSO	SOCCENT	IRANIAN FUTURES WORKSHOP, II	28,330.00	9/30/2010	R62SN
ARQUILLA	RRO	OSD	NETWORK WARFARE:WHAT'S NEXT? FY08 (U) INFORMATION OPERATIONS CENTER OF EXCELLENCE	28,369.05	9/30/2010	RDAEF
BUDDEN	RRO	OASD	DEFENSE COUNTER TERRORISM TECHNOLOGY	380,000.00	9/30/2010	R62CJ
GREENSHIELDS	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	26,671.31	9/30/2010	R6PYE
GREENSHIELDS	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	73,329.33	5/30/2011	R6NY1
GREENSHIELDS	RSN	NETSAFA	3RD ANNUAL CTFP/IPS ALUMNI EVENT AND CONFERENCE	136,280.00	9/30/2010	G6ABJ
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	367,255.00	9/30/2010	K625M
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	64,000.00	9/30/2010	K685M
MCCORMICK	RRO	AFOSR	GAME-THEORETIC APPROACHES TO DETERRENCE	100,000.00	8/31/2011	R6ADW
MCCORMICK	RRO	OSD	DENENSE ANALYSIS INSURGENCY AND MANHUNTING PROJECTS (U)	211,991.17	9/30/2010	RDAJF
ROBERTS	REN	NETSAFA	DARK WEB COURSE RESEARCH	616,302.00	12/31/2010	KDAOU

FY10 SPONSORED PROGRAMS

DEPT: 62 (DA)

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE IN FY10	EXPIRES	ACCTID
ROBERTS	REN	NETSAFA	COMMON OPERATIONAL RESEARCH ENVIRONMENT (CORE) - INTERNATIONAL COLLABORATIVE EFFORT (ICE) INITIATIVE	575,990.32	12/31/2010	KDAX4
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM THE SOVIET ERA	74,999.97	9/30/2010	R623X
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM THE SOVIET ERA	80,000.00	2/10/2011	R62F6
ROBERTS	RRO	SAF	CORE LAB AND SKOPE SEMINAR SUPPORT	30,000.00	9/30/2011	R62LH
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM THE SOVIET ERA	150,000.00	12/31/2010	R62JX
ROBERTS	RRO	OSD	COMMON OPERATIONAL RESEARCH ENVIRONMENT (CORE) LAB PROGRAM FY09	58,346.89	9/30/2010	RDAE9
ROTHSTEIN	RRO	OUSD	INFORMATION OPERATIONS (IO) TO DEFEAT COALITION ENEMIES IN OEF FY09 (U)	145,466.23	9/30/2010	RDACP
ROTHSTEIN	RRN	ONR	INFORMATION OPERATIONS (IO) RESEARCH, ANALYSIS AND OPERATIONAL SUPPORTW OF OEF	1,868.45	12/31/2009	RDA6T
SIMONS	REN	NETSAFA	INTEROPERABILITY IN AN IRREGULAR WARFARE WORLD COURSE MATERIALS AND PROGRAM OF INSTRUCTION DEVELOPMENT	79,800.00	9/30/2010	KDAI4
TUCKER	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	73,329.33	5/30/2011	R6GY1
TUCKER	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	26,670.60	9/30/2010	R6SYE

FY10 SPONSORED PROGRAMS

DEPT: 62 (DA)

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE IN FY10	EXPIRES	ACCTID
TUCKER	RRO	DMDC	TEAM MONTEREY: ANALYSIS OF IDENTITY MANAGEMENT SECURITY FOR GROUPS	100,000.00	9/30/2010	R62IC

DEPT TOTAL:

3,742,949.65

FY11 SPONSORED PROGRAMS

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE		ACCTID
				IN FY11	EXPIRES	
ARQUILLA	RRO	OSD	WINNING IN AFGHANISTAN-SEPARATING ILLUSION FROM REALITY	325,000.00	9/30/2012	R6D2D
ARQUILLA	RRO	OSD	WINNING IN AFGHANISTAN-SEPARATION ILLUSION FROM REALITY FY10	287,309.69	9/30/2011	R62OT
BORER	RRO	OSD	CTFP ECCO CT OPERATOR ARCHIVE PROJECT (CTOAP): PHASE 0	161,580.00	9/30/2012	R6MBT
BUDDEN	RSO	OSD	DEFENSE COUNTER TERRORISM TECHNOLOGY	387,559.00	9/30/2011	Q6D3W
DENNING	RRO	DIA	DEPT. OF DEFENSE SUPPLY CHAIN RISK MANAGEMENT THREAT ANALYSIS CENTER COLLABORATION PROJECT WITH NAVAL POSTGRADUATE SCHOOL	150,000.00	9/30/2011	R6D8K
EVERTON	RRO	TRAC - MONTEREY	FUSING TEMPORAL, GEOSPATIAL AND RELATIONAL DATA	35,280.59	6/15/2011	R6MB3
EVERTON	RRN	OSD	CT FELLOWSHIP PROGRAM/CORE LAB	736,080.00	9/30/2012	R6ABT
EVERTON	RRO	USA GEOSPATIAL CTR	STUDENT TRAVEL FOR CAPT CARRICK LONGLEY	2,315.00	9/30/2011	R6DM9
FREEMAN	RRN	OSD	WIKI-BASED SOCIAL NETWORKING FOR COMBATING TERRORISM PROFESSIONALS	1,643,231.01	9/30/2012	R4ABT
FREEMAN	RRO	OSD	EDUCATION AND COLLABORATION COMMUNITY ONLINE (ECCO) WEBSITE FOR CTFP ALUMNI	2,900,000.00	9/30/2012	R6E2X

DEPT: 62 (DA)

FY11 SPONSORED PROGRAMS

DEPT: 62 (DA)

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE IN FY11	EXPIRES	ACCTID
FREEMAN	RRO	OSD	BUILDING AND SUSTAINING INTERNATIONAL SECURITY RELATIONSHIPS THROUGH WIKI-BASED SOCIAL NETWORKING AND INSTANT INTERACTIVE APPLICATIONS	33,963.47	9/30/2011	R95IG
GREENSHIELDS	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	73,329.32	5/30/2011	R6NY1
GREGG	RRO	TRAC - MONTEREY	DATA, ANALYSIS, AND IMPLEMENTATION OF HUMINT IN THE CULTURAL GEOGRAPHY MODEL	30,000.00	8/1/2011	R6C9V
JAYE	RRO	USMA	RED TEAMING VULNERABILITY AT SYSTEM SEAMS: MODELING USER ACCEPTANCE OF NEW TECHNOLOGY	65,000.00	12/31/2011	
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	356,255.00	9/30/2011	K6CD3
MCCORMICK	REN	NAVSPECWARCOM	SPECIAL OPERATIONS ACADEMIC CURRICULUM	75,000.00	9/30/2011	K6MD3
MCCORMICK	RRO	AFOSR	GAME-THEORETIC APPROACHES TO DETERRENCE	100,000.00	8/31/2011	R6ADW
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM THE SOVIET ERA	3,660.69	2/10/2011	R62F6
ROBERTS	RRO	SAF	CORE LAB AND SKOPE SEMINAR SUPPORT	30,000.00	9/30/2011	R62LH

FY11 SPONSORED PROGRAMS

DEPT: 62 (DA)

PI	TYPE	SPONSOR	TITLE	FUNDING AVAILABLE IN FY11	EXPIRES	ACCTID
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM THE SOVIET ERA	32,292.23	3/31/2011	R6JX
ROBERTS	RRN	ONR	MINING AFGHAN LESSONS FROM SOVIET ERA (MALSE)	33,004.00	4/12/2012	R6D4W
ROBERTS	REN	NETSAFA	DARK WEB COURSE RESEARCH	36,552.41	9/30/2011	KDAOU
ROBERTS	REN	NETSAFA	COMMON OPERATIONAL RESEARCH ENVIRONMENT (CORE) - INTERNATIONAL COLLABORATIVE EFFORT (ICE) INITIATIVE	87,529.01	12/31/2010	KDAX4
SIMONS	RRO	OSD	AXIS OF MORE TROUBLE: 21ST CENTURY CULTURES OF WAR	100,000.00	9/30/2011	R6DTG
TUCKER	RRO	DMDC	IDENTITY AND DATABASE CHALLENGES FOR FORCE PROTECTION	73,254.13	5/30/2011	R6QY1
WILSON	RRO	OSD	CORE CRS DEVELOPMENT	700,000.00	9/30/2012	R6E2Y
WILSON	RRO	NSA	SOCIO-CULTURAL KNOWLEDGE AND TECHNOLOGY SUPPORT	50,000.00	2/4/2012	R6DX9
WILSON	RRO	USSOUTHCOM	FARC NETWORK ANALYSIS WORKSHOP	41,200.00	9/30/2011	R6DV8
WILSON	RSO	1ST SPECIAL FORCES GROUP	SOCIO-CULTURAL KNOWLEDGE AND TECHNOLOGY SUPPORT	63,999.48	9/30/2011	Q6DY1
<b>DEPT TOTAL:</b>				<b>8,613,395.03</b>		

# APPENDIX E

## EDUCATIONAL SKILL REQUIREMENTS/UPDATED for 2012

### SPEC OPS

2500

699

1. Curriculum Number: 699
2. Curriculum taught at NPS
3. Students are fully funded
4. Curriculum Length in Months: 18
5. APC required: NA
6. List of ESRs:

**A. Strategy and Policy:** Graduates will develop an ability to think strategically, analyze past operations, and apply historical lessons to future joint, interagency and coalition operations, in order to discern the relationship between a nation's political interests and goals and the ways military and other instruments of national power may be used to achieve them. Partially fulfilled by completing the first two of four Naval War College courses leading to Service Intermediate-level Professional Military Education (PME) and Phase I Joint PME credit.

**B. The Dynamics of Inter-State and Intra-State Conflict:** An understanding of the political, ethnic, and cultural dynamics to include global and regional influences that explain the outbreak of war between and within modern states. Particular attention should be given to the issues of intra-state conflict, unconventional forms of inter-state military rivalry, the integrated role of force and diplomacy in crisis management operations short of war, problems of escalation in a crisis environment, military alliance behavior, the dynamic differences between zero sum and nonzero sum conflicts, the special problems associated with suppressing and resolving zero sum engagements, and military and nonmilitary approaches to conflict resolution. Students must have a close understanding of the prevailing analytical literature on these and related subjects and be able to apply this literature to a broad range of contemporary and historical cases.

**C. Asymmetrical and Irregular Aspects of Warfare:** A detailed understanding of the problems of domestic and international terrorism, social revolution, and other forms of irregular conflict. Close attention must be given to problems of both threat and response. The student must have a close knowledge of the prominent contending theoretical perspectives on the problems of terrorism and social revolution, a detailed

knowledge of the operational and organizational dynamics underlying each of these forms of conflict, and a strong working understanding of the ways in which these and similar forms of irregular conflict have been countered historically. Where appropriate, the courses designed to satisfy this requirement should survey the U.S. experience in irregular warfare (the importance of by, with, and through as evidenced in our involvement in the Philippines and Colombia) as well as that of other states that have been prominently engaged in such actions in the past, such as Great Britain, France, Israel, and the former Soviet Union.

**D. Historical and Comparative Perspectives on Special Operations:** A close understanding of the historical use of special operations forces, to include how these and similar forces have been organized, trained, equipped, directed, and employed. Attention should be given not only to the U.S. experience but to other nations' experiences as well, such as those of Great Britain, Germany, Italy, and other European countries with more recent SOF experience along with Canada and Australia, and the former Soviet Union. Also address the role of women in special operations (e.g., their role in the OSS during WWII). Similarly, this examination should not be restricted to contemporary history alone, but should extend back into the historical record to examine the ways in which special operations and related forces have been employed creatively to support state objectives in the more distant past. Throughout this inquiry attention should be given to the contemporary lessons that can be drawn from historic experience.

**E. Special Operations Doctrine, Concepts, and Institutions:** A detailed and conceptual understanding of the development of doctrine for special operations. Work in this area should focus, first, on the defining events and experiences that have stimulated doctrinal and institutional innovations in SO and, second, on the forms these innovations have taken. This examination should cover the period from the end of World War II through the Cold War, and into the post-9/11 era. These and related issues should be explored creatively in an effort to uncover the appropriate roles and missions and strengths and limitations of military power in the global security environment.

**F. Crisis Management and the Contingent Use of Military Power:** An understanding of the political role played by military power, both direct and indirect, in operations short of war, the problem of military crisis management, and the contingent use of force in support of local U.S. policy objectives. Attention should be given to the "signaling" role that can be played by military force, the special problems of deterrence and coercion in a crisis environment, and the military consequences of deterrence failure. The student should have a close knowledge of the historical record of "armed diplomacy" throughout the post-war period to include the role of SOF. This should include knowledge of the individual cases of U.S. military intervention in the Third

World, from Lebanon (1958) to Bosnia (1995). Attention should be given to both the theoretical and empirical literature on these subjects to provide the student with an understanding of the special political and operational issues associated with operating in a crisis environment. In particular, students need to understand both the positive and negative roles modern information networks and communications platforms play in crisis management today.

**H. Comparative Cases of and Responses to Regional Conflict:** A close knowledge of historical and contemporary "small wars" and other forms of low intensity conflict in Latin America, Africa, Asia, and the Middle East. The courses that satisfy this requirement should examine the pertinent theoretical literature on political violence in the region in question, review the recent history of regionally-based terrorism, insurgency, and communal conflict, the regional and transnational implications of these conflicts, and any functional issues that are of particular interest or concern in the particular area under investigation, such as, the religious or communal sources of political violence or the relationship between narcotics, transnational criminal organizations, and insurgency/terrorism.

**I. Special Operations in the 21<sup>st</sup> Century:** An understanding of the ways in which the proliferation of new and emerging technologies is changing the shape of modern warfare. An important aspect of this requirement is to examine the likely impact of these developments on the dynamics and characteristics of 21st century warfare within both the inter-state and intra-state arena. The student must have a working knowledge of the major technological developments and trends in this area (both lethal and non lethal) and their conflict implications. Armed with this knowledge, students will be better advocates for the special operations community's future technological needs and the necessity to rapidly deliver these technologies to the battlefield. One avenue for demonstrating this requirement is participation in the quarterly *NPS/SOCOM Capability Based Experimentation* venue.

**J. Special Operations and Information Warfare:** An understanding of the likely and potential implications of information warfare on future special operations to include not only the rapid advances in technology, but the growing importance of the human/social dimension from HUMINT to cultural awareness. An important aspect of this requirement is to examine the principles of information warfare and examine the ways in which SOF can contribute to U.S. information dominance on the 21st century battlefield. This examination should address the problem of information dominance at the inter-state and intra-state level of war, and the importance of fusing social intelligence with technical intelligence.

**K. Weapons of Mass Destruction (WMD) Proliferation and Counter-proliferation:** Students will have an understanding of the problem of WMD proliferation.

Students may have a technical or operational perspective on WMD. The student must have an understanding of the political dynamics of WMD proliferation and an understanding of recent and possible future trends in this area to include (1) *transnational issues of trafficking in WMD materiel / components, humans, drugs, small arms, money, goods, etc.*; (2) *black / gray markets, cut-out financial fronts, and money laundering*; and (3) *avenues that various criminal, terrorist, or other shadow networks utilize to collaborate, unite, and/or compete with each other to serve their goals*. Close attention should also be given to the problem of counter-proliferation and the ways in which SOF might approach this task. Students having a technical focus should have a working knowledge of nuclear and non-nuclear WMD technologies.

**L. Analytical Methods and Applications:** Each student will receive a grounding in analytical methods and their application to military modeling, simulations, and gaming. Close attention will be given to the ways in which such analytical techniques can be used as heuristic and decision-making tools for strategic and operational planning. Attention will be given to both historical and contemporary military applications with particular focus on the ways in which such techniques can be used to address issues of interest to the special operations community.

**M. Strategic and Operational Complexity:** Special Operations is a style of warfare. No traditional single academic discipline can adequately address the educational requirements of the special operations community, so an interdisciplinary approach is required. Each student will develop a course of study that permits him or her to pursue a disciplinary orientation that best suits their particular academic background and interests within the substantive limits of the other ESRs.

## **EDUCATIONAL SKILL REQUIREMENTS**

### **JOINT INFORMATION OPERATIONS (698)**

The goal of this curriculum is to educate military personnel and civilian officials of the United States in the strategic and operational dimensions of information relative to the use of force as an instrument of statecraft. Graduates will be able to employ information in support of full spectrum dominance by taking advantage of information technology, exploiting the growing worldwide dependence upon automated information systems and capitalizing upon near real time global dissemination of information to affect adversary decision cycles with the goal of achieving information superiority for the United States. This capability will be possible only after students develop a thorough understanding of the enduring nature of war. The curriculum is designed for both the specialist who will be assigned to an information operations position and the generalist who will be assigned to an operations directorate. The curriculum includes a core of military art and operations, the human dimension of warfare (psycho-social), analytical methods, and a technical sequence customized for each student. Additionally, each student will have an elective sequence designed to further develop an in-depth understanding of joint information operations. Finally, each student will write a thesis relevant to the field of information operations.

1. **MILITARY ART AND OPERATIONS:** Graduates will understand the organization, formulation, and execution of national security strategy and national military strategy, the effects of technical developments on warfare, the capabilities and roles of military forces throughout the entire spectrum of conflict, and current defense issues.
2. **EMERGING SECURITY CHALLENGES:** Graduates will explore major security issues among states and between states and non-state actors with emphasis placed on examining the sources of instability and violence including ethnic conflict, insurgency and terrorism.
3. **INFORMATION OPERATIONS (IO):** Graduates will understand the role of information in winning wars. An important aspect of this requirement is to examine the principles of information operations, to include psychological operations, military deception, computer network operations, electronic warfare, public affairs and command and control warfare, and how the proper integration of IO can contribute to U.S. information dominance of the 21<sup>st</sup> century battlefield. Additionally, graduates will understand the role of physical (kinetic) attack and civil-military operations (CMO) in support of DoD informational objectives.
4. **ANALYTICAL METHODS AND APPLICATIONS:** Graduates will have a foundation in analytical methods and their application to military modeling, simulations and gaming. Close attention will be given to the ways in which such analytical techniques can be used in heuristic and decision making tools for strategic and operational

planning. Attention will be given to both historical and contemporary military applications with particular focus on the ways in which such techniques can be used to address issues of interest to the joint information operations community.

5. **INFORMATION SYSTEMS:** Graduates will have a systems level understanding of information systems and their vulnerabilities as well as capabilities.
6. **INTELLIGENCE PROCESSES AND APPLICATIONS:** Graduates will know intelligence processes and their applications to joint warfare through the national level with particular emphasis given to the role of intelligence in planning, executing and terminating information operations.
7. **THESIS:** Graduates will demonstrate their ability to conduct independent research and analysis, and proficiency in presenting the results in writing by means of a thesis appropriate to this curriculum.

# APPENDIX F

**Department of Defense Analysis**  
**Classes Taught Academic Year 11 - All Resident**

20 faculty	Sections	1801
9 Other	Average class size	18

	Class Title	Number of Students	Rank of Instructor	Curriculum	
DA2010	Technical Writing and Composition	14	Senior Lecturer	SO & JIO	MA
DA2010	Technical Writing and Composition	19	Contractor	SO & JIO	MA
DA2010	Technical Writing and Composition	33	Senior Lecturer	SO & JIO	MA
DA2010	Technical Writing and Composition	19	Contractor	SO & JIO	MA
DA2010	Technical Writing and Composition	18	Contractor	SO & JIO	MA
DA2410	Modeling for Military Decision Making, I	17	TT	SO & JIO	PhD.
DA2410	Modeling for Military Decision Making, I	14	TT	SO & JIO	PhD.
DA2410	Modeling for Military Decision Making, I	18	TT	SO & JIO	PhD.
DA2410	Modeling for Military Decision Making, I	18	TT	SO & JIO	PhD.
DA2410	Modeling for Military Decision Making, I	21	TT	SO & JIO	PhD.
DA2410	Modeling for Military Decision Making, I	13	Visiting Professor	SO & JIO	PhD.
DA3101	Conflict in the Information Age	18	TT	SO & JIO	PhD.
DA3101	Conflict in the Information Age	25	TT	SO & JIO	PhD.
DA3101	Conflict in the Information Age	27	TT	SO & JIO	PhD.
DA3101	Conflict in the Information Age	30	TT	SO & JIO	PhD.
DA3101	Conflict in the Information Age	30	TT	SO & JIO	PhD.
DA3102	Psychological Warfare and Deception	10	Senior Lecturer	SO	PhD.
DA3102	Psychological Warfare and Deception	18	Senior Lecturer	SO	PhD.
DA3102	Psychological Warfare and Deception	12	Senior Lecturer	SO	PhD.
DA3102	Psychological Warfare and Deception	7	Senior Lecturer	SO	PhD.
DA3104	Computer Network Attack and Defense	9	TT	JIO	PhD.
DA3105	Conflict and Cyberspace	24	TT	SO & JIO	PhD.
DA3120	Jihadi Information Operations	9	TT	JIO	PhD.
DA3260	Human Intelligence in Irregular Warfare	23	TT	SO	PhD.
DA3260	Human Intelligence in Irregular Warfare	16	Visiting Professor	SO	MA
DA3270	Intelligence in the Information Age	9	TT	JIO	PhD.
DA3410	Modeling for Special Operations II	17	TT	SO & JIO	PhD.
DA3410	Modeling for Special Operations II	13	TT	SO & JIO	PhD.
DA3600	Geographical and Temporal Dimensions of D:	15	Lecturer	SO	MA
DA3600	Geographical and Temporal Dimensions of D:	8	Lecturer	SO	MA
DA3600	Geographical and Temporal Dimensions of D:	12	Lecturer	SO	MA
DA3610	Visual Analytics	15	TT	SO & JIO	PhD.
DA3720	The Rise of Religious Violence	15	TT	SO	PhD.
DA3720	The Rise of Religious Violence	19	TT	SO	PhD.
DA3750	Anthropology of Conflict	29	TT	SO	PhD.
DA3750	Anthropology of Conflict	10	Contractor	SO	PhD.
DA3750	Anthropology of Conflict	13	Contractor	SO	PhD.
DA3800	Theory and Practice of Social Revolution	9	Contractor	SO	MA

DA3801	International Terrorism	15	TT	SO	PhD.
DA3801	International Terrorism	10	TT	SO	PhD.
DA3801	International Terrorism	19	TT	SO	PhD.
DA3801	International Terrorism	15	Visiting Prof	SO	MA
DA3801	International Terrorism	13	Contractor	SO	PhD.
DA3802	Seminar in Guerrilla Warfare	32	TT	SO	PhD.
DA3802	Seminar in Guerrilla Warfare	35	TT	SO	PhD.
DA3802	Seminar in Guerrilla Warfare	24	TT	SO	PhD.
DA3880	History of Special Operations	19	Senior Lecturer	SO & JIO	PhD.
DA3880	History of Special Operations	31	Senior Lecturer	SO & JIO	PhD.
DA3880	History of Special Operations	16	Senior Lecturer	SO & JIO	PhD.
DA3880	History of Special Operations	11	Senior Lecturer	SO & JIO	PhD.
DA3880	History of Special Operations	25	Senior Lecturer	SO & JIO	PhD.
DA3882	Deterrence, Coercion, & Crisis Management	14	TT	SO & JIO	PhD.
DA3882	Deterrence, Coercion, & Crisis Management	17	TT	SO & JIO	PhD.
DA3882	Deterrence, Coercion, & Crisis Management	26	TT	SO & JIO	PhD.
DA3882	Deterrence, Coercion, & Crisis Management	22	TT	SO & JIO	PhD.
DA3882	Deterrence, Coercion, & Crisis Management	20	Contractor	SO & JIO	PhD.
DA3883	The Rise, Transformation and Future of the N	16	Contractor	SO	PhD.
DA4102	Special Information Operations	6	TT & Senior Lectur	SO & JIO	PhD.
DA4102	Special Information Operations	11	TT & Senior Lectur	SO & JIO	PhD.
DA4102	Special Information Operations	7	TT & Senior Lectur	SO & JIO	PhD.
DA4102	Special Information Operations	12	TT & Senior Lectur	SO & JIO	PhD.
DA4104	Militaries and Technological Change	12	Contractor	SO & JIO	PhD.
DA4105	Special Topics in Information Operations	6	Visiting Prof	JIO	MA
DA4106	Trust, Influence and Networks	17	TT	SO & JIO	PhD.
DA4106	Trust, Influence and Networks	21	TT	SO & JIO	PhD.
DA4108	Deception, Denial, Surprise, and Counterdece	16	Senior Lecturer	JIO	PhD.
DA4110	Culture and Influence	30	TT	SO & JIO	PhD.
DA4110	Culture and Influence	17	TT	SO & JIO	PhD.
DA4301	Fighting Undeclared Wars: American Approac	21	Senior Lecturer	SO	PhD.
DA4302	Coping with Wicked Problems	6	TT	SO & JIO	PhD.
DA4302	Coping with Wicked Problems	9	TT	SO & JIO	PhD.
DA4410	Models of Conflict	19	TT	SO & JIO	PhD.
DA4410	Models of Conflict	18	TT	SO & JIO	PhD.
DA4410	Models of Conflict	18	TT	SO & JIO	PhD.
DA4410	Models of Conflict	18	TT	SO & JIO	PhD.
DA4410	Models of Conflict	19	TT	SO & JIO	PhD.
DA4410	Models of Conflict	16	TT	SO & JIO	PhD.
DA4460	Alternate Research Methods and Defense An	24	Contractor	SO & JIO	MA
DA4460	Alternate Research Methods and Defense An	26	Contractor	SO & JIO	MA
DA4460	Alternate Research Methods and Defense An	25	TT	SO & JIO	PhD.
DA4460	Alternate Research Methods and Defense An	19	TT	SO & JIO	PhD.

DA4460	Alternate Research Methods and Defense An	11	TT	SO & JIO	PhD.
DA4470	Designing Operationally Oriented Research S	21	TT	SO & JIO	PhD.
DA4470	Designing Operationally Oriented Research S	26	TT	SO & JIO	PhD.
DA4470	Designing Operationally Oriented Research S	23	TT	SO & JIO	PhD.
DA4500	Special Topics in Strategic Analysis	10	TT	SO	PhD.
DA4600	Dark Networks	16	TT	SO & JIO	PhD.
DA4600	Dark Networks	11	TT	SO & JIO	PhD.
DA4600	Dark Networks	10	TT	SO & JIO	PhD.
DA4601	Terrorist Financing	24	TT	SO	PhD.
DA4610	Dynamic Network Analysis	11	TT	SO	PhD.
DA4710	Critical Thinking and Ethical Decision Making	39	Senior Lecturer	SO & JIO	MA
DA4710	Critical Thinking and Ethical Decision Making	21	Senior Lecturer	SO & JIO	MA
DA4710	Critical Thinking and Ethical Decision Making	20	Senior Lecturer	SO & JIO	MA
DA4710	Critical Thinking and Ethical Decision Making	25	Senior Lecturer	SO & JIO	MA
DA4760	The Military Advisor	19	TT	SO	PhD.
DA4760	The Military Advisor	19	TT	SO	PhD.
DA4780	Political Anthropology: Methods of Social Cor	25	TT	SO	PhD.
DA4830	Regional Seminar in Low-Intensity Conflict: M	21	TT	SO	PhD.
DA4850	Regional Seminar in Low-Intensity Conflict: La	17	Contractor	SO	PhD.
DA4860	Regional Seminar in Low-Intensity Conflict: Fa	13	Contractor	SO	PhD.
DA3900	Directed Studies in Special Operations and Low Intensity Conflict				52
DA4900	Advanced Directed Studies in Special Operations Low Intensity Conflict				57

# APPENDIX G

# DEPARTMENT OF DEFENSE ANALYSIS

## Thesis Evaluation and Rating Form

Program Objective: Graduates will demonstrate their ability to conduct independent research, including proficiency in analysis and writing by means of a thesis appropriate to the 699 or 698 curriculum.

*To be completed by the student:*

Author's Name, Rank, and Service:

Curriculum:

Classification:

Thesis Title:

Name of Advisor or Co-Advisor completing this form:

NPS requires that all master's degree programs contain a Capstone element (thesis or equivalent). The WASC accredited degree program the above student is completing requires that students complete a thesis that demonstrates advanced competence in the curriculum subject area. The advisor is asked to complete the bottom section of this form and forward via e-mail or hard copy directly to the DA Department Associate Chair for Instruction. The results are to be used for purposes of curriculum management only, and will not be shared with students. Please use the following criteria to evaluate the thesis identified above:

<i>Mark your answer by placing an "X" in the appropriate box</i>	Ready for Publication	Potential Publication	Above Average	Average/Releasable	Library Restricted
	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Quality of Research					
Quality of Writing					
Advancement of Knowledge					
Relevancy to US Defense Policy					
Subject Area Competence					

Additional Comments (optional): Use the space on the back to provide additional information about this thesis, including it's potential for publication, it's eligibility for departmental awards, and, if appropriate, it's posting on the Department website. Please note also any issues that it may raise with respect to the content or structure of the student's curriculum.

# APPENDIX H

**Department of Defense Analysis**  
**FY 2011 Class Size and Number of Sections**

**15 students  
is Optimal**

		Average # of students	Sections	Total # of Students	If Sections are 15 per
DA3802	Seminar in Guerrilla Warfare	29.7	3	89	5.9
DA3101	Conflict in the Information Age	29.2	5	146	9.7
DA4710	Critical Thinking and Ethical Decision Making	26.3	4	105	7.0
DA3750	Anthropology of Conflict	26.0	2	52	3.5
DA4780	Political Anthropology: Methods of Social Research	25.0	1	25	1.7
DA3105	Conflict and Cyberspace	24.0	1	24	1.6
DA4601	Terrorist Financing	24.0	1	24	1.6
DA4110	Culture and Influence	23.5	2	47	3.1
DA4301	Fighting Undeclared Wars: American Approaches	21.0	1	21	1.4
DA4460	Alternate Research Methods and Defense Analysis	21.0	5	105	7.0
DA2010	Technical Writing and Composition	20.6	5	103	6.9
DA3882	Deterrence, Coercion, & Crisis Management	20.0	5	100	6.7
DA4470	Designing Operationally Oriented Research	19.6	5	98	6.5
DA3260	Human Intelligence in Irregular Warfare	19.5	2	39	2.6
DA4760	The Military Advisor	19	2	38	2.5
DA4106	Trust, Influence and Networks	19.0	2	38	2.5
DA4410	Models of Conflict	18.0	6	108	7.2
DA3720	The Rise of Religious Violence	17.0	2	34	2.3
DA4107	Public Diplomacy to Psychological Operations	17.0	1	17	1.1
DA4850	Regional Seminar in Low-Intensity Conflict	17.0	1	17	1.1
DA2410	Modeling for Military Decision Making, I	16.8	6	101	6.7
DA3880	History of Special Operations	16.8	6	101	6.7
DA3801	International Terrorism	16.2	5	81	5.4
DA3883	The Rise, Transformation and Future of the Military	16.0	1	16	1.1
DA4108	Deception, Denial, Surprise, and Counterintelligence	16.0	1	16	1.1
DA3410	Modeling for Special Operations II	15.0	2	30	2.0
DA3610	Visual Analytics	15.0	1	15	1.0
DA4860	Regional Seminar in Low-Intensity Conflict	13.0	1	13	0.9
DA4600	Dark Networks	12.3	3	37	2.5
DA3600	Geographical and Temporal Dimensions of Conflict	12.0	3	36	2.4
DA4104	Militaries and Technological Change	12.0	1	12	0.8
DA4500	Special Topics: Anna	12.0	1	12	0.8
DA3102	Psychological Warfare and Deception	11.8	4	47	3.1
DA4610	Dynamic Network Analysis	11.0	1	11	0.7
DA4830	Regional Seminar in Low-Intensity Conflict	10.5	2	21	1.4
DA4500	Special Topics: Glenn	10.0	1	10	0.7
DA3104	Computer Network Attack and Defense	9.0	1	9	0.6

DA3120	Jihadi Information Operations	9.0	1	9	0.6
DA3270	Intelligence in the Information Age	9.0	1	9	0.6
DA3800	Theory and Practice of Social Revolution	9.0	1	9	0.6
DA4102	Special Information Operations	9.0	4	36	2.4
DA4302	Coping with Wicked Problems	7.5	2	15	1.0
DA4105	Special Topics in Information Operations	6.0	1	6	0.4
			106		125.5

Department of Defense Analysis FY 2007 - 2011 Budgets

Mission Budget	FY2007	FY2008	FY2009	FY2010	FY2011
Faculty	1,586,452	2,058,352	2,716,975	2,769,949	3,078,000
Staff	72,100	70,554	70,554	67,017	61,370
Non-Labor	46,821	47,000	47,890	38,000	41,550
<b>Reimbursable</b>					
Reimbursable Research	1,591,681	1,607,248	2,285,584	2,695,393	8,745,588
Reimbursable Education	709,748	779,970	781,255	1,391,895	767,807
Total	2,301,429	2,387,218	2,716,839	3,742,950	9,513,395
<b>Sub Units</b>					
CORE Lab Reimbursable Research	399,000	1,024,800	982,642	664,337	1,705,204
Information Operations Center of Excellence	350,380	358,715	350,000	344,338	300,000

# APPENDIX I

## PROGRAM IMPROVEMENT RECORD

**1) CTFP Sponsorship:** In 2003, Dep SECDEF Paul Wolfowitz directed that select international officers from priority GWOT partner nations attend the SO/IW course at NPS. The purpose of CTFP is to grow a global counter-terror network of like-minded allies. The program is a component of the overall United States Government's

effort to protect our citizens through building the capacity of partner governments (BPC), Non Governmental Organizations (NGOs) and International Organizations (IOs).

Specifically: "...to build partnerships in the global war on terrorism through targeted, non-lethal, Combating Terrorism (CbT) education and training....by providing CbT education and training for mid to senior level international military officers, ministry of defense civilians and security officials." The DA Department is home to one of only two graduate programs affiliated with CTFP.

The addition of international officers to the Department has significantly added to the educational experience for all students and has long lasting strategic impact unlike any other educational program in DoD.

**2) Terrorist Operations and Financing Track:** This track was specifically designed for our CTFP-sponsored international officers at the behest of ASD/SOLIC to better prepare our allies for waging war against irregular threats. Specific courses were developed to support this track like "Terror Threat Financing" and "Tracking and Disrupting Dark Networks." Both these courses have now become flagship courses in joint military education and help define the Department.

**3) Stability Ops Track:** This track was established in 2005 based on input from our Civil Affairs officers/students with recent experience in both Iraq and Afghanistan. As DoD recognized that the concepts of Irregular Warfare and Stability Operations went hand in hand, our students suggested we needed to offer more courses in regards to negotiation strategies, development and reconstruction post-conflict, conflict prevention, security sector reform, and the economic aspects of COIN. The result was a multi-disciplinary graduate track unique to NPS and involving two other departments on campus.

**4) CORE Lab:** Established in 2005 as the brainchild of a student and DA faculty member to mimic national level ops/intel fusion cells supporting SOF operations in Iraq and Afghanistan. Start-up money provided by OSD/RRTO with additional funding provided by CTFP (see para 1 above). The CORE Lab is unique in what it offers to NPS graduate students and its warfighting customers in the field. It focuses on the following three areas: 1) the choice of analytical methods and software platforms to facilitate data fusion; 2) the testing and development of software and supporting technologies to improve information and knowledge management; and 3) the analysis of data to identify alternatives for field-based operations.

The CORE Lab also contributes to the DA graduate mission by offering a four course sequence: Visual Analytics, Geographical and Temporal Dimensions of Dark Networks, Tracking and Disrupting Dark Networks (Relational Analysis), and Dynamic Social Network Analysis.

**5) ILE/JPME 1/MEL 4 Credit** (finally approved in 2008): US Army Special Operations Command and United States Special Operations Command pushed the DA Department to develop a course of action that would enable an Army SOF officer to satisfy all professional military education requirements while assigned to NPS for both PERSTEMPO and quality of life considerations. The DA Department in conjunction with the NWC-Monterey and Special Warfare Center and School at Ft Bragg, NC, were able to push a request/waiver package (along with GO/FO support) through HQDA to grant full ILE/MEL 4 credit.

This positive outcome now resolves concerns over command availability and allows for the expansion of language education at DLI and professional development as an Intern at SOCOM headquarters.

**6) Special Topics in IO (CLASSIFIED):** Course developed jointly between two DA faculty members and a special operations headquarters in Afghanistan. Students and faculty devise alternative strategies based on real-world inputs from the combat zone to attack/disrupt insurgent/terrorist networks. Neglected military art is taught to a new generation of military leaders. Direct support to the warfighter sets NPS apart from nearly any other academic institution.

**7) Change to “Core” Curriculum:** Based on recurring student feedback and faculty input, the DA Department expanded its analytical methods course into a two-course sequence, “Alternate Research Methods and Defense Analysis” and “Designing Operationally Oriented Research Studies.” “The Rise and Transformation of the Nation-State” is now offered as an elective (former “core” class).

**8) National Chair for Intelligence (2010):** Based on general guidance from USSOCOM to increase interagency participation in the SO/IW program, the DA Department and the Office of the Assistant Director for Military Affairs at the CIA developed and brought to fruition an intelligence chair position that puts a senior CIA official on the NPS faculty. This position brings a huge benefit to all NPS students who are studying terrorism to include counter-radicalization and psychology of terrorism, intelligence methods in the 21<sup>st</sup> century, the nexus of intelligence and national strategy, and S&T support to intelligence operations. In practical terms, daily interaction with a CIA official helps bridge the divide of two forces operating in shared battle space but not necessarily synched or coordinated.

**9) USASOC MILFAC:** In an effort to assist in the rapid growth of US Army SOF students in the DA Department (burden sharing additional faculty), the Commander, Special Warfare Center and School, Ft Bragg, NC, volunteered to support a continuing MILFAC position in the Department, further cementing the SOF/NPS relationship. The position requires an Army 18A (Special Forces officer) with a PhD in one of the several disciplines required by the DA Department. USSOCOM has agreed to budget for the recurring cost of a PhD program prior to the MILFAC showing up to NPS. Our first MILFAC arrives July 2010 after completing a PhD program at UCLA.

# APPENDIX J

**Faculty**

	Began at	Rank	Degree
<b>Tenure Track:</b>	NPS		
John Arquilla	1993	Professor	PhD
Leo Blanken	2008	Assistant Professor	PhD
Doug Borer	2003	Associate Professor	PhD
Dorothy Denning	2002	Distinguished Professor	PhD
Michael Freeman	2005	Assistant Professor	PhD
William Fox	2006	Professor	PhD
Sean Everton	2007	Assistant Professor	PhD
Frank Giordano	2002	Professor	PhD
Heather Gregg	2006	Assistant Professor	PhD
Mike Jaye	2009	Associate Professor	PhD
Gordon H. McCormick	1992	Professor	PhD
Nancy Roberts	1986	Professor	PhD
Anna Simons	1998	Professor	PhD
David Tucker	1998	Associate Professor	PhD
Glenn Robinson	1991	Associate Professor	PhD

**Non-Tenure Track:**

Greenshields	2009	Senior Lecturer	MA
George Lober	1998	Senior Lecturer	MA
Hy Rothstein	2002	Senior Lecturer	PhD
Kalev Sepp	2003	Senior Lecturer	PhD
Kristen Tsoilis	1999	Lecturer	MA

	TT	NTT	M	F	Age Distribution
2007	13	5	13	4	30 - 39      1
2008	14	5	14	4	40 - 49      4
2009	15	5	16	4	50 - 59      8
2010	15	5	16	4	60 +          7
2011	15	5	16	4	
					Median Age = 58

Faculty student ratios

Faculty = 29 (with part-timers)      Students = 175

Faculty to student ratio = 1 to 6	Faculty to student ratio in class = 1 to 17
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Courses delivered (AY2011)      101

Average course load per faculty (AY 2011)      3.95

Average thesis load per faculty      NPS Faculty      5.6

**DA Theses**

<b>Tenure Track</b>	2007	2008	2009	2010	2011
Advisor	51	32	39	43	27
Co-Advisor	13	4	13	4	6
Reader	26	21	23	41	31
<b>Total</b>	<b>90</b>	<b>57</b>	<b>75</b>	<b>88</b>	<b>64</b>
Faculty	13	14	15	15	15
Average	6.9	4.1	5.0	5.9	4.3

<b>Non-Tenure Track</b>	2007	2008	2009	2010	2011
Advisor	10	10	9	6	9
Co-Advisor	2	3	2	2	2
Reader	15	5	12	11	10
<b>Total</b>	<b>27</b>	<b>18</b>	<b>23</b>	<b>19</b>	<b>21</b>
Faculty	5	4	4	4	4
Average	5.4	4.5	5.75	4.75	5.25

<b>Other</b>	2007	2008	2009	2010	2011
Advisor	11	9	11	9	5
Co-Advisor	1	4	3	1	1
Reader	15	9	9	6	8
<b>Total</b>	<b>27</b>	<b>22</b>	<b>23</b>	<b>16</b>	<b>14</b>
Faculty	5	3	4	3	3
Average	5.4	7.3	5.8	5.3	4.7

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## SECTION I: MISSION, STRATEGY, AND ORGANIZATION

### A. Mission and Purpose of the Department

The Defense Analysis (DA) Department is comprised of two graduate curricula, one for the study of special operations and irregular warfare (SO/IW), the other focusing on joint information operations (IO). These curricula offer some of the most unique instruction available among defense education establishments — or anywhere else in academia.

The Special Operations and Irregular Warfare curriculum is the only one of its kind, 100% dedicated to the study of Irregular Warfare (IW), and is sponsored by the United States Special Operations Command (USSOCOM). USSOCOM has guided the program since 1994. The curriculum on Joint Information Operations was established at the direction of the Deputy Secretary of Defense in 2003 and is sponsored by the Under Secretary of Defense for Policy. This unique curriculum ensures information operations (IO) professionals are exposed to both the technical and non-technical side of IO, to include strategic communications, psychological operations, and deception. The Deputy Secretary of Defense at the same time mandated that DoD's Information Operations Center for Excellence be placed at NPS and in the Defense Analysis Department, specifically.

The DA Department is also home to the only Senior Service School-equivalent resident fellowships at the Naval Postgraduate School, two from the Army and one from the Air Force. DA is also the home to the school's National Intelligence Chair (filled by a CIA officer) and Special Operations Chair (an active duty Colonel assigned to SOCOM with duty at NPS). The Army Fellowships, emphasizing Special Operations and IO are filled by Colonel or Colonel-select officers in those career fields, while the AF Fellowship is Special Operations-specific and filled by a post-squadron command officer assigned to the Air Force Special Operations Command (usually a senior Lt Col).

Lastly, DA is home to the student-conceived Common Operational Research Environment (CORE) Lab, a battle lab for innovative IW analytical methodologies looking to better understand and/or exploit both dark and friendly networks. The CORE Lab methodologies in conjunction with a hand-held data collection device called Lighthouse (also student conceived) are being used by special operations forces in the Philippines, Afghanistan, and Colombia, and by police departments in California and Massachusetts.

Our mission is simple: to arm select US and international military professionals and interagency personnel with the critical thinking skills and specialized knowledge that they will need for waging and prevailing in the complex conflicts under way — and those to come.

With the support of our sponsors, the Department's comparative advantages in IW and IO graduate education and research ensure the emergence of cadres of capable operators, planners and commanders who are able to deal with the wide range of

threats — traditional and unconventional — that threaten not only our security, but that of our partners around the world. We take to heart General (retired) Peter Schoomaker's, USA, axiom that SOCOM's role is to "train for certainty," while ours is to "educate for uncertainty."

As asserted formally in 2007 by the Joint Staff and affirmed ever since by the special operations community and the Combating Terrorism Fellowship Program (CTFP), the Defense Analysis Department offers a one-of-a-kind educational opportunity for the in-depth study of multiple aspects of defense analysis to include national defense strategy, irregular warfare, special operations, and IO. Whether those in our program are special operators or IO practitioners, or come from the general purpose forces or from our allies around the world, all leave with a sense of how military and security affairs are being transformed in an era when societal contours are powerfully shaped by the twin factors of the information revolution and the rise of terrorist and insurgent networks.

## B. Strategy

As part of NPS' recent (and highly successful) WASC accreditation efforts, all departments were tasked to develop and submit strategic plans to ensure long term success and academic relevancy. Nested in the NPS strategic plan (approved by the NPS president in 2008 and reaffirmed in 2010), the Defense Analysis Department's plan is a blueprint for success over the next 5 to 10 years that addresses both the needs of our sponsors, but also the concerns and desires of our faculty and students. The Department's most current strategic plan, updated July 2011, is presented below:

### **Strategic Plan for DA**

#### **I. Goal for faculty: High-caliber teaching and research**

##### **To be sustained by:**

1. Recruitment of scholars from among the best programs in their fields of interest. Special emphases for the present on recruiting qualified junior faculty, to balance the departmental demographic, and on sustaining, perhaps expanding upon, disciplinary diversity.
2. Use of SOFs, other student feedback, review of syllabi, and in-class observation to serve as diagnostic tools, with active mentoring and monitoring processes employed as needed.
3. Systematic efforts to link faculty to principal department sponsors (SOCOM and USD/P), but also to other relevant funders within and outside of DoD.
4. Sustained levels of scholarly activity among the departmental faculty in aggregate, measured in terms of regular contributions to peer-reviewed journals, authored and/or edited books, official reports for government sponsors and other writings.

#### **II. Goal for students: A scintillating, diverse, relevant environment**

##### **To be fostered by:**

1. Regular updating and revision of core, track and elective courses based on insights from research and sponsor inputs, along with efforts to offer small seminars (12-15 students) often enough that DA students might have at least one of these every two quarters.
2. Seeking the return of Air Force students, continuing the process of bringing Marines and interagency civilians into both DA curricula (SO & IO), and increasing international enrollment.
3. Maintaining average-on-board numbers in the 150-70 range, at least until average class size drops from 23+ to the range of 20, and/or additional faculty create enough flexibility to contemplate further growth.
4. Encouragement of greater numbers of quantitatively oriented theses (both CORE- and modeling-related), as well as of high-quality, journal-article-styled theses of all types, often on topics related to follow-on deployments or postings.

### **III. Other departmental goals:**

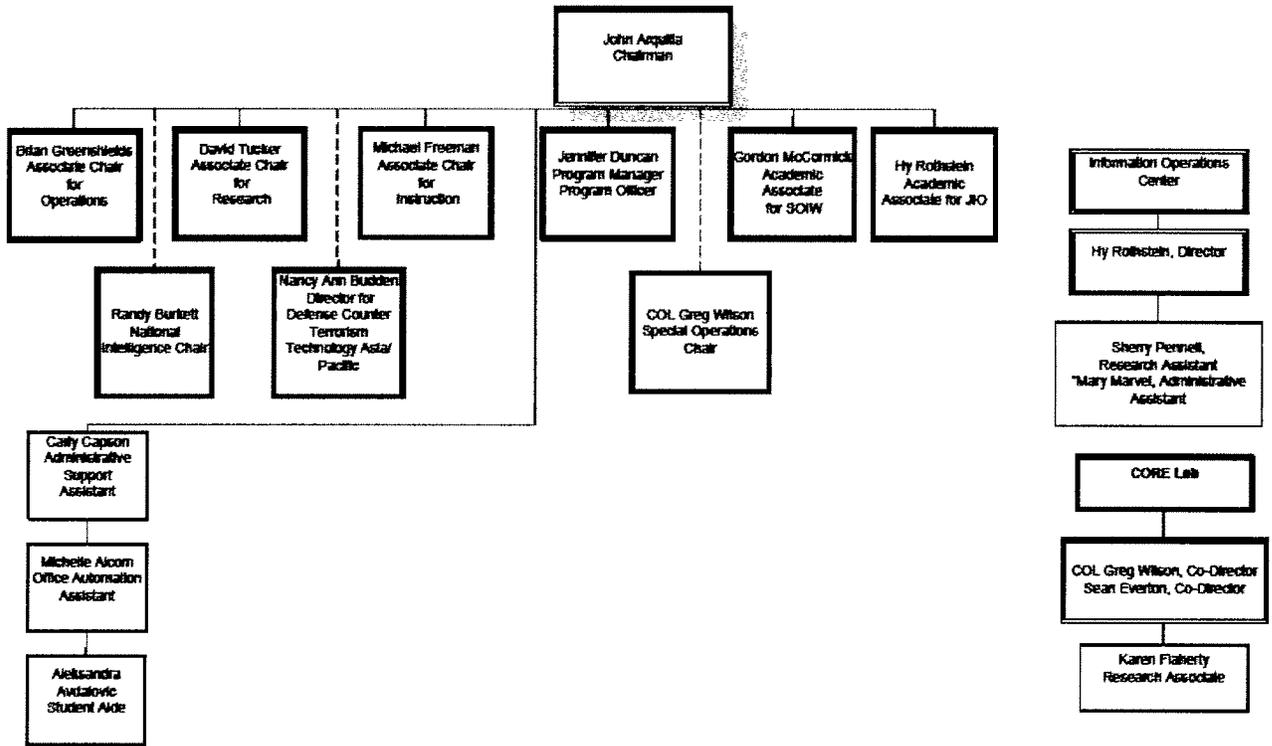
1. Grow the Joint Information Operations curriculum by encouraging Marine enrollments and internationals, in part by offering a cyber track. The near-term “steady state” should see JIO numbers grow to approximately 20% of the total DA student body. Continue the close integration of the IO Center with the JIO curriculum.
2. Increase naval unrestricted line officer participation in a non-degree “curriculum on defense analysis” (CODA) that will run for four quarters, the course work to be drawn largely from a mix of related special operations and information operations courses.
3. Deepen ties to sponsors, combatant commands and others by further development and application of the “WARCOM model” of short-course instruction, and by further provision of classified-level support to various organizations’ field activities.
4. Continue initiatives that bring positive returns – network building among alumni, CTFP conferences, the online journal, a littoral warfare center, etc. – while foreclosing less promising initiatives like a potential DA doctoral program, or investment in distance learning. Determine into which category the Center on Terrorism & Irregular Warfare fits.

### C. Organization

The Defense Analysis Department is one of four departments located in the Graduate School of Operational and Information Sciences (GSOIS), itself one of four graduate schools that make up NPS. Organizationally, the Department is headed by Dr John Arquilla, the Department Chair, who is supported by an Associate Chair for Operations, Col (ret) Brian Greenshields, USAF, an Associate Chair for Instruction, Dr Michael Freeman, an Associate Chair for Research, Dr David Tucker, and a Program Manger, Ms Jennifer Duncan. Dr Arquilla assigns management of the two graduate curricula to the Academic Associates. The Academic Associates are: for the JIO curriculum, Dr Hy Rothstein, and for the SO/IW curriculum, Dr Gordon McCormick.

The military chain of command is represented by COL Greg Wilson, US Army Special Forces and the current Special Operations Chair, and Ms Jennifer Duncan, dual-hatted as the Department's Program Officer. Finally, Dr Arquilla exercises control over both the IO Center for Excellence and the CORE Lab through their directors, as well as over all DA Department faculty. Please refer to the organizational chart on the next page.

**Department of Defense Analysis  
GSOIS**



From inception to June 2011, the Department had only one Chair (Dr. Gordon McCormick). Dr McCormick co-founded the special operations curriculum (SOLIC) in 1992 with then Commander William McRaven, a Navy SEAL and student in another program at NPS. (ADM McRaven is now the commander, USSOCOM, and was the much-heralded architect of the raid that killed Osama bin Laden). The program, which started as a single curriculum within the National Security Affairs Department, grew in such importance to succeeding SOCOM commanders that by 2001 NPS leadership elevated it to a department-level activity. Dr McCormick was made the Department Chair and skillfully navigated the program through turbulent waters with the help of other long-time SOLIC professors (like Dr. John Arquilla) to ultimately create a truly multi-disciplinary graduate program with a world-class faculty. During Dr McCormick's stewardship, the Department added the second sponsored curriculum (IO), saw the arrival of CTFP-sponsored international officers, garnered mid-level PME (professional military education) credit for eligible officers, increased Army student numbers, secured an Army SOF MILFAC (military faculty), and oversaw the creation of two national prominent research centers under the Department's umbrella, the IO Center for Excellence and the CORE Lab. With the Department on a stable footing, in 2010 Dr Peter Purdue, GSOIS Dean, formed a search committee for a new Chair to both allow Dr McCormick more time to pursue his academic and research interests, but also to start a normal process of rotating Chairs. The faculty voted Dr Arquilla as the next Chair of the DA Department. Dr Arquilla assumed his current position in July 2011 and is serving a 3-year term.

#### D. Future Directions

As a result of the change in leadership at USSOCOM, the Defense Analysis Department is being given a pre-eminent role in the crafting of an education strategy for the command. As ADM McRaven hopes to increase educational opportunities for all special operators, one option is to grow the Department's student body to an average on-board of 200 (two more cohorts). Average on board today is approximately 150 students. Already with the highest faculty to student ratio on campus, Dr Arquilla argued for and initiated a faculty search and won approval to hire three additional tenure track faculty members. Two accepted their offers, Dr Bradley Strawser, a philosopher/ethicist (and previous Air Force officer) currently at Annapolis, and Dr Camber Warren, a political scientist with a strong math/quantitative background from Duke. Both will join our faculty later this summer. The Department will hold a new faculty search this fall (2012) to find the third faculty member. These searches are critical to the Department's continued success, as they may be the last for the foreseeable future based on the severe budget cutting underway in DoD.

Beyond trying to lower instructor/student ratios, Dr Arquilla is also trying to look years out and in accordance with our strategic plan to ensure the long-term health of the Department. The searches are targeted after the best and brightest young PhDs as the age demographic within the Department is skewed toward senior individuals. Average age of our faculty is 46, with one third of our faculty over 60. Our median age is 58.

In addition to the recent hires, the Department is working closely with the Air Force Special Operations Command (AFSOC) to establish an AFSOC MILFAC position using our Army SOF MILFAC as a model. In March 2012, AFSOC assigned a manpower billet to the Department. The next issue to work with USSOCOM and AFSOC will be the funding line for the in-residence doctoral coursework at an agreed upon institution.

The Department's curricula have evolved based on input from our sponsors, students, and our faculty members. For example, Dr Arquilla directed the stand-up of a WMD counter-proliferation class based on input from a recent curriculum review conducted by our executive agent, the Naval Special Warfare Command (WARCOM). This truly unique course is taught by a visiting professor and intelligence analyst from Lawrence Livermore National Laboratory (LLNL). At the same time, the Department has established a pilot track in the SO/IW curriculum dedicated to unconventional warfare (UW) at the request of Army Special Operations Command (USASOC), and has provided USSOCOM the outline of a senior-leaders short course to educate GPF officers on special operations in preparation for new command initiatives in Afghanistan. The groundwork has also been laid to expand niche intelligence courses that have direct applicability to the unique intelligence requirements of IW and IO. The Academic Associate for the JIO curriculum has proposed an intelligence track be placed in that curriculum.

Other new Department initiatives include close collaboration with the Army's premier PME school, the School for Advanced Military Studies (SAMS). This initiative was actually directive in nature from the Chief of Staff of the Army, GEN Raymond Odierno, who was so impressed after reviewing the DA program that he directed his Combined Arms Center commander, LTG Perkins, to provide a way ahead for SAMS and DA to collaborate in building the Army's top strategists and campaign planners of the future. One last recent initiative undertaken by the Department in hopes of attracting more conventional Navy students is a proposed 12-month non-degree producing graduate curriculum designed for naval unrestricted line officers (see Appendix A, URL). Unrestricted line officers include surface warfare, submarine warfare, and naval aviation.

## SECTION II: FACULTY

### A. Profile of the Faculty

The Department of Defense Analysis prides itself on its cross-disciplinary faculty making it unique on campus. The faculty is comprised of mathematicians, an economist, three historians, an anthropologist, two sociologists, several political scientists, a computer scientist, an organizational theorist, Middle East and Latin American experts, an ethicist and poet, and more. Our distinguished faculty was purposely built to be cross-disciplinary based on USSOCOM requirements and the associated emphasis on building critical thinkers with the ability to look at complex issues through various lenses. The DA Department does not hesitate to utilize faculty from other departments if it's lacking expertise in a certain skill set or discipline. For example, we have reached out to the business school on a "Strategy for Consensus Building" course, for help in teaching our organization theory class, and to support our Financial Management track. We utilize the expertise in the National Security Affairs Department for support to our Stability Operations track and the Physics Department to support our Combat Systems track.

Within Defense Analysis, many of our faculty are recognized leaders in their field, e.g., Dr. John Arquilla and netwar, Dr. Sean Everton and dark networks, Dr. and Army Gen (ret) Frank Giordano and mathematical modeling, Dr. Gordon McCormick and Dr. Kalev Sepp and counter-insurgency, Dr. Dorothy Denning on information warfare/ assurance, and Dr Nancy Roberts and wicked problems, just to name a few. Because of the nature of what we teach and the composition of our student body, we pay attention to not only academic success, but also to "fit" when deciding who to hire. Because of this dynamic, the Department has been very selective when hiring new faculty and this current search was no different. Out of 145 applicants only three individuals were given offers.

Currently, there are 20 full-time civilian faculty members, 20 tenure track and 5 non-tenure track. Out of the 20 full-time civilian faculty members, all but three have their PhDs. Over the last five years, the faculty has grown incrementally to try to keep pace with a growing student body, but has had to enlist the help of contract faculty to teach specific classes. Please see below for the list of Department faculty members and Appendix J for additional/miscellaneous faculty data.

# DEPARTMENT OF DEFENSE ANALYSIS

## CORE FACULTY MEMBERS

**John Arquilla**  
Department Chairman  
Ph.D, Stanford University

**Frank Giordano**  
Professor  
Ph.D, University of Arkansas

**Glenn Robinson**  
Associate Professor  
Ph.D, University of California, Berkeley

**Leo Blanken**  
Assistant Professor  
Ph.D, UC Davis

**Heather Gregg**  
Assistant Professor  
Ph.D, Massachusetts Institute of Tech.

**Hy Rothstein**  
Senior Lecturer  
Ph.D, Tufts University

**Doug Borer**  
Associate Professor  
Ph.D, Boston University

**Brian Greenshields**  
Senior Lecturer  
MA, Naval Postgraduate School

**Kalev Sepp**  
Senior Lecturer  
Ph.D, Harvard University

**Dorothy Denning**  
Distinguished Professor  
Ph.D, Purdue University

**Michael Jaye**  
Associate Professor  
Ph.D, Rensselaer Polytechnic Institute

**Anna Simons**  
Professor  
Ph.D, Harvard University

**Sean Everton**  
Assistant Professor  
Ph.D, Stanford University

**George Lober**  
Senior Lecturer  
MA, California State University

**David Tucker**  
Associate Professor  
Ph.D, Claremont Graduate University

**Bill Fox**  
Professor  
Ph.D, Clemson University

**Gordon McCormick**  
Professor  
Ph.D, Johns Hopkins University

**Associated Faculty:**  
Dr. G. Owen      Dr. Bob O'Connell  
Dr. Erik Jansen      Dr. Marcos Berger  
Mr Doowan Lee      Ms Jennifer Duncan (Prgm Officer)  
Ms Liz Robinson      Mr R. Burkett (National Intel Chair)  
Ms Kristen Tsolis

**Michael Freeman**  
Assistant Professor  
Ph.D, University of Chicago

**Nancy Roberts**  
Professor  
Ph.D, Stanford University

**Military Members:**  
COL Greg Wilson, USA, SOF Chair  
AF Fellow—Lt Col Dwight Davis, AFSOC  
Army Fellow—COL Steven Gilland, SMU  
18A MILFAC—LTC Mike Richardson, SF

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The #1 priority for Defense Analysis faculty is support of the graduate education mission, which is the reason this institution exists. Beyond their heavy load of classroom instruction (on average individual faculty members taught four 4 sections in FY 11), they are also expected to advise (or be second reader) on students theses. That this Department puts its students first and foremost is recognized in student surveys calling Defense Analysis the most relevant department on campus with the highest rated professors (SOF scores). In fact, we have three Schieffelin Award winners for outstanding instruction among our faculty and one Faculty Award for Joint Service Warfare, both of which are voted on by the student body. Defense Analysis faculty members internalize the goals espoused in the NPS Faculty handbook:

*The faculty member is guided by the deep conviction of the worth and dignity of the advancement of knowledge. This mandates a personal responsibility to live up to full intellectual potential and to develop a solid base of professional activities. He/she recognizes that an academic career is a full-time job. As a teacher, the professor has responsibilities to students to encourage their free pursuit of learning, emphasizing a role as intellectual guide and counselor. The best scholarly standards must be maintained, bearing in mind the School's educational mission and the officers' future requirements. The professor*

*earns the respect of students and of colleagues as regards his/her teaching activities, both in and out of the classroom.*

## B. Faculty Development and Support

Each new faculty member is assigned a senior faculty mentor that advises on both classroom performance and research opportunities. Because of the small size of the faculty, the Department Chair is also able to mentor new faculty members directly and make judgments on the new member's classroom performance either through direct observation or by review of SOF scores. Additionally, the Chair and other senior faculty members, as a matter of course, go out of their way to introduce younger faculty to research sponsors, or partnering on specific projects that will get the younger member exposure. Historically, USSOCOM has hosted new faculty members at its headquarters in Tampa and at its component headquarters to help new faculty better understand the SOCOM mission. Additionally, our faculty is encouraged to see field operations and, if possible, contribute to a specific mission requirement while in a combat theater. Each faculty member is assessed annually by the Department Chair and GSOIS Dean, fills out a quarterly faculty activity report for review by the Chair, and if in a tenure track position, must compete for tenure usually at the 6-year point.

Beyond internal department support, faculty members at NPS are well-served by the Dudley Knox Library staff, ITACS for their IT support, the Dean of Research's office, and HR for career issues.

## C. Faculty Work Policies

Faculty work policies are set by the school with the adoption of the 9-month model for tenure-track faculty. Under the 9-month model, tenure-track faculty are expected to teach four sections during the nine months, with the last three months dedicated usually to reimbursable research/scholarship. New faculty are given a 2-year grace period from the 9-month model in order to develop sponsor contacts. Through a program called RIP, NPS pays for the intersession period/4<sup>th</sup> quarter. According to the NPS faculty handbook, that last quarter:

*"can be spent in diverse ways. The intersession period can be used for a variety of activities including reimbursable research, classroom instruction (when requested by the Department/Group Chair), reimbursable short-course instruction, NPS administrative activities, or leave without pay. One month of the intersession quarter can be used for annual leave, reimbursable research, or for academic duties determined in cooperation with your Chair (or GSBPP Dean). The Workload Agreement is used to delineate the expected duties (if any) during any quarters with intersession periods."*

Non-tenure track faculty teach the number of sections as agreed upon by the faculty member and the Department Chair, but usually a minimum of six. Contract faculty members are paid to teach specific courses at set times during the year, in order to lessen the teaching burden of permanent faculty. The use of contract faculty was

meant to be a bridge until the Department could hire the appropriate number of permanent faculty... a plan complicated by the constant threat of shrinking budgets...but still the goal of the Department.

Per the NPS Faculty Handbook and with the encouragement of Dr. Arquilla, ALL faculty members are expected to pursue scholarly activities:

*As a scholar, the faculty member develops and maintains a reputation among professional peers outside the School through such activities as publication; consulting; active participation in learned societies; interaction with other Navy, DoD, or Federal activities; etc. The scholar recognizes a responsibility to contribute actively to the body of knowledge encompassed by his/her field.*

The Defense Analysis Department is proud of the high quality scholarship that is the hallmark of our faculty (please refer to the Research and Scholarship section of this report).

With regard to the heavy student thesis load based on our large student population, the DA faculty is expected to share the thesis workload evenly although until recently that was not necessarily the case. In the past, there was no formal mechanism to introduce our incoming student body to all our faculty members. Therefore, when it came time to choose thesis advisors, the students would naturally go to the instructors they were familiar with from class. In addition, although math modeling/quantitative analysis is an important part of our core curricula, students have shied away from math-heavy theses leaving our math professors without many to advise. The burden of advising then fell on those professors teaching our core courses early on in the curricula. In order to even the load, Dr. Arquilla has asked each faculty to take on no more than four theses per cohort, and has emphasized to the students and faculty to make more use of quantitative analysis in the theses. In addition, Dr Arquilla also instituted a meet-and-greet during the first quarter of study that introduces the new students to the entire DA faculty. This event is separate from the new student orientation the Department offers during the first three weeks of class.

Lastly, after self-identifying a grade inflation problem borne out by a thorough analysis of grades per section, per instructor, and in comparison with other departments on campus, the DA Department implemented a policy to “protect the A” by setting a goal of no more than 1/3 “A’s” per section. The DA Department leadership regularly requests data from Academic Affairs to ensure we are adhering to the stated goal.

#### D. Faculty Vita or Data Sheets

See Appendix B for list of faculty vita/data sheets.

## SECTION III: RESEARCH AND SCHOLARSHIP

### A. Profile of the Research and Scholarship Accomplishments of the Department:

See Appendix C for a select list of recent Department publications since 2009.

### B. Academic Orientation

As stated earlier, the focus of the DA Department both for instruction and research is national security studies and defense analysis, but using a multi-disciplinary approach to problem-solving and emphasizing the study of irregular warfare (sometimes referred to as MOOTW or LIC or sub-state conflict). The DA Department is the only DoD educational unit dedicated primarily to the study of irregular warfare (includes COIN, counter-terrorism, unconventional warfare, information operations, counter-proliferation of WMD, etc). Required by the 2006 QDR and subsequent IW roadmap, USSOCOM nominated the DA Department in 2010 to house DoD's IW Academic Center for Excellence to serve as a clearing house for IW research, course development, subject matter expertise, and wargaming. USSOCOM was very aware that the Department had a proven model in place with the IO Center for Excellence, and that the Department's expertise in IW is why the OSD/Rapid Response Technology Office (RRTO) and the Office of Net Assessment had built such a close relationship with the Department and individual faculty members (in fact, an RRTO representative maintains an office in the DA Department). Unfortunately, the Joint Staff intervened, disregarded the USSOCOM commander's recommendation, and decided to place the center at the Joint Forces Staff College under the NDU umbrella.

The special operations community world-wide recognizes the Defense Analysis Department as the premier graduate program in Irregular Warfare and IO studies. For example, Special Operations Command South is sponsoring a project with DA to help the Colombian military map the FARC insurgent network--DA last fall hosted a highly successful FARC Network Analysis Conference bringing together leading Latin America experts and US Southern Command officials. Special Operations Command Central utilizes the DA Department to host annual conferences on emerging strategic and operational issues of importance to them. Last year the Department ran an Iranian Futures Conference that brought in experts from around the world to think about potential Iranian reactions/outcomes based on different US approaches to dealing with that nation. The Army's Asymmetric Warfare Group is sponsoring research on IW metrics with Dr. Leo Blanken and recently signed a MOA with the Department for research support. RRTO funded an "Afghan Endgames" project co-led by Drs. Arquilla and Rothstein that resulted in a book capturing the thoughts of some of the leading strategists of our time on how to bring the Afghan conflict to a reasonable conclusion. On-going classified research is conducted under the auspices of the IO Center in support of Combined Joint Special Operations Task Force-Afghanistan, while the CORE Lab is supporting field units in the Philippines and Afghanistan with a "human terrain" data collection device called Lighthouse. NATO SOF Headquarters (NSHQ) in Belgium has tasked DA to research the issues involved in standing up a multi-national SOF Air

Wing to support NATO SOF ground and maritime forces. Very few NATO countries possess the specialized air support to enable the range of missions NATO SOF ground and maritime forces are tasked to do. Our Air Force Fellow is leading this high-visibility, joint research project that partners with NPS' Graduate School of Business and Public Policy. Lastly, the CTFP office in Washington, DC, has tasked the DA Department to manage its global outreach efforts to connect over 18,000 international alumni who have graduated from the network of CTFP-sponsored institutions (includes NPS, NDU, the Asia-Pacific Center, the Marshall Center, the African Center, the Joint Special Operations University, and many more). Dr Michael Freeman is responsible for this nearly \$2 million project, and has already launched with the help of Dr Anna Simons a quarterly journal called *CTX Combating Terrorism Exchange*. This journal encourages CTFP alumni to share ideas/best practices and generate dialogue about the problem of terrorism worldwide.

In comparison to nationally ranked public and private research universities, the Department believes it takes a second seat to no one in the study of irregular warfare, information operations, and the broader area of defense analysis. We have been able to hire and retain a world-class faculty, many of whom are recognized experts in their fields of study. Dr Arquilla was recently named one of Foreign Policy Magazines top 100 global thinkers. Dr Kalev Sepp was recognized as one of the nation's top 10 COIN experts by the Center for a New American Security. Dr Dorothy Denning figuratively wrote the book on information warfare and assurance, and is a Tipton Award winner in the field of computer science. Dr Glenn Robinson is a leading Middle Eastern expert fluent in Arabic whose book on the creation of a Palestinian state is one of the best on the issue, and he will soon be publishing a book under the Stanford Press on Jihadi Information Operations. Dr Sean Everton, our CORE Lab co-director and one of the leading SNA experts in the nation, has just released a book on disrupting dark networks, while Dr Gordon McCormick's diamond model of insurgency has been the standard bearer for the special operations community in conceptualizing COIN strategies. Finally, Drs Hy Rothstein and Michael Freeman broke new ground in applying COIN theory and best practices from the recent conflicts in Iraq and Afghanistan to the problem of street gangs in the US. Their nationally recognized efforts with the City of Salinas, California, have helped cut gang violence in half over the past year.

#### C. Profile of Sponsored Activities

See Appendix D.

#### D. Involvement of Faculty in External Academic and Professional Community

See Appendix B for faculty vita/data sheets.

## SECTION IV: GRADUATE PROGRAM

### A. Program Objectives

All curricula at NPS have to have a sponsor who in turn sets the objectives for the individual programs. The assumption is that there will be a payback or utilization tour after graduation where that student will be required to apply their new found knowledge/skills. Program objectives are actually generated by the sponsor in the form of Educational Skills Requirements (ESRs), a list of knowledge skills/expectations that provide guidelines for curriculum development and content. ESRs are usually reviewed every two years for relevancy and currency. The ESRs for both Department curricula are at Appendix E.

Another objective levied on the Department by the military services is that the students have the ability to complete their professional military education (PME) requirements, JPME 1 and ILE/IDE/MEL 4, without extending the 18-month curricula length. The Department meets that objective by partnering with the on-campus Naval War College (NWC) extension program. To complete mid-level PME certification, a student must complete the four, quarter-long courses offered by NWC. Those courses include Strategy and War, Joint Maritime Operations 1 and Joint Maritime Operations 2, and Theater Security Decision-making.

To ensure PME is completed during the 18-month graduate program, the Defense Analysis Department allows students to take two of the NWC courses as elective offerings, requiring the other two be taken as course overloads. So far, this has not been an issue for our students.

Ultimately, our programs' singular objective is to create better planners, operators, and commanders by developing in our students critical thinking skills so they avoid the pitfalls of "conventional wisdoms" and better innovate and adapt in the face of uncertainty.

### B. Curriculum and Degree Programs Structure

The Defense Analysis Department offers two graduate programs: one in Special Operations and Irregular Warfare (SO/IW) that results in a Master's of Science in Defense Analysis, and the other in Information Operations culminating in a Master's of Science in Joint Information Operations. Due to the size of the student body and the needs of the sponsor, the SO/IW degree program is divided into a set of common core courses and nine specialty tracks. All students must take the curriculum core, but then have the opportunity to specialize (narrow their field of study) by picking a specialty track. Associated with that specialty track, usually chosen by the student at the end of the second quarter, are another six to seven electives.

The current SO/IW curriculum structure was adopted because of USSOCOM's insistence that its only sponsored graduate program be as "broad as SOCOM's

requirements are broad,” and that the course of study be inter-disciplinary in its approach. While the common core provides much of the breadth, the track system allows for SO/IW students to take a “deep dive” in areas that interest them. On average, DA students will take anywhere from 21 to 24 courses over their 18-month stay (includes PME courses), and all must write a thesis in order to satisfy degree requirements. The thesis serves as the program’s capstone event.

The Joint Information Operations curriculum (JIO), sponsored by the Undersecretary of Defense for Policy (USDP), consists of a program core (similar to the SO/IW curriculum) followed by a series of electives that address both the technical and human dimensions of information operations. Historically, there have been no track options as student throughput in the JIO curriculum is much less than in the SO/IW curriculum (JIO receives on average 20 students a year). However, the JIO curriculum is under constant review with the hope of attracting more students and could see a reduction in the SOF-heavy core set of courses and the development of specific tracks, like cyber, in the future (in fact, an intelligence track has already been developed and will be piloted this summer). The one charter the curriculum must follow is that it exposes IO professionals to *all* dimensions of information operations.



## DA Curricular Concept: Core/Tracks

*To maximize flexibility*

**Program Core**

- The History of Special Operations
- Seminar in Guerrilla Warfare
- Organizational Design for Special Operations
- Modeling for Military Decision-making, I & II
- Deterrence, Compellence & Crisis Management
- Warfare in the Information Age
- Models of Conflict (Modeling III)
- Anthropology of Conflict *or* Culture and Influence
- Regional Seminar in Terrorism and Sub-State Conflict
- The Rise, Transformation and Future of the Nation-State *or* Social Movement Theory
- Critical Thinking and Ethical Decision-making

**Specialty Tracks**

- Irregular Warfare
- Information Operations
- Terrorist Operations and Financing
- Operations Analysis
- Combat Systems
- Financial Management
- C4I Systems
- National Security Affairs (Stability/Reconstruction)
- National Security Affairs (Regional Studies)



**Students select one of six regional seminars:**  
Africa, Far East, South Asia, Latin America,  
Middle East, Europe/Transcaucasus



**Program confers a Master of Science degree (w/Specialty Track)**

### C. Program Sponsorship and Delivery

As noted earlier, each of our curricula has a sponsor. USSOCOM sponsors the SO/IW curriculum, while USDP sponsors the JIO curriculum. Both curricula are interdisciplinary in nature and reach across campus for support. Both are taught in-residence at Monterey, and neither has a distance learning component. Both sponsors do provide administrative support funds for their respective curriculum and both, through memorandums of agreement, place expectations on the Services to send a minimum number of students. Those agreements are critical since the Department is allocated mission (direct teaching funds) based on the number of sections taught. The long term commitment of student throughput allows the Department to maintain a right-sized, highly diverse and talented faculty, along with the necessary space on campus to fulfill its mission.

A third sponsor who relies on the Department's already established curricula is the Combating Terrorism Fellowship Program (CTFP) Office which is managed by both the Assistant Secretary for Defense/Special Operations and Low Intensity Conflict and the Defense Security Cooperation Agency. CTFP pays tuition and living expenses for select international officers and law enforcement officials to attend one of the Defense Analysis graduate programs and earn their degree. The stated intent of the CTFP program is to build a coalition or global network of like-minded counter-terrorism professionals. International participation has elevated the level of learning and understanding that goes on in our classrooms and fosters relationship building that we and DoD hope will last a lifetime.

### D. Current Program Profile

For a description of the Department's graduate program offered during the last academic year, please see Appendix F.

### E. Program Initiatives

As mentioned earlier, the Department has built a pilot Unconventional Warfare track that combines Social Movement Theory, Campaign Design, SNA, and historical case studies at the request of Army Special Operations Command. The track will be piloted later this year. Dr Arquilla has also asked the faculty's intelligence experts to put together an Intelligence track for inclusion in the JIO program. The track will emphasize intelligence support for Irregular Warfare and include courses on HUMINT, ethnography, and network analysis. Another initiative designed to attract a different set of students--Navy unrestricted line officers (URLs)--who only have the ability to spend 12 months in education out of their career field was put forward by Dr. Arquilla at the end of 2011. Dr Arquilla designed a 12-month, non-degree granting program emphasizing 21<sup>st</sup> Century Naval Affairs which allows URLs to accumulate graduate credit and receive, as a minimum, a certificate. The proposed URL curriculum can be found at Appendix A.

The Defense Analysis Department has also committed to short-course delivery to support various SOF customers. The Department just ran its second annual, week-long strategic studies seminar for DEVGROUP at the end of March and is in the final planning stages for the second Norwegian, Dutch, and German SOF seminar to be offered in May. In addition, the Department has now institutionalized its support to WARCOM's Platoon Leader's Course and the US Army's Special Warfare Center and School's Unconventional Warfare Operational Design Course.

The DA Department is also pioneering the concept of strategic design as a problem-solving methodology for defense issues. Not only is design included in our campaign analysis course and discussed/implemented in the Wicked Problems course, but Drs Arquilla and Roberts are leading a design seminar with a diverse set of students with the goal of helping the Army G-3 determine what the Army of the future should look like. As a corollary to this effort, Dr Kalev Sepp has been nominated to serve on the Army Chief of Staff's commission to study the Army's organizational redesign and readiness. Along with the design methodology, our math modeling course sequence, and SNA methodology being promulgated in the CORE Lab, students are exposed to a wide variety of analytical methodologies that will serve them well not only during their studies at NPS, but throughout their careers as critical thinkers.

Lastly, but most significantly, the Defense Analysis Department is in consultation with the Army's School of Advanced Military Studies to build a two year collaborative program for select officers. These officers would spend 12 months in the DA program followed by 12 months at SAMS, ultimately earning the SAMS graduate degree. Pushed by GEN Odierno to find ways to collaborate, the DA Department looks forward to a long partnership with SAMS (which includes the sharing of courses and professors) in order to create top flight strategists and campaign planners for the complex world of the 21<sup>st</sup> century.

#### F. NPS Catalog

See the following link:

[http://www.nps.edu/Academics/Admissions/Registrar/AcademicCatalog/docs/catalogs/General%20Academic%20Catalog\\_March2012.pdf](http://www.nps.edu/Academics/Admissions/Registrar/AcademicCatalog/docs/catalogs/General%20Academic%20Catalog_March2012.pdf)

#### G. Course Syllabi File

The Department's syllabi are on file with the DA Admin staff. Ms Carly Capson is responsible for ensuring the front office has a current copy of each course syllabus. Those syllabi can be released upon request and with the approval of the Department Chair and individual professor.

## SECTION V: Students

### A. Profile of Students

The number of students in AY2011 peaked at 175, with 157 enrolled in the SO/IW curriculum and 18 in the Joint Information Operations curriculum. All our students were enrolled full time and all US students were military (mix of commissioned officers, warrant officers, and NCOs). Our international students were both military and civilian (civilian students came primarily from law enforcement and intelligence organizations). The average age of our student body was 32 – 34 years old, the average rank was Major, and there were only four females. These numbers well represent our average student body demographics for the last three years. For a complete breakdown of the AY 2011 student body, see below.

2011 Academic Year -- DA Students

N=175

Special Operations Curriculum

N = 157

USA	85
INT	35
USAF	25
USN	12
Male	154
Female	3

USA	
SF	50
CA	12
PO	9
MI	7
INF	4
Other	3
	85

USN	
Seal	7
Intel	3
EOD	2

USAF	
SOF	8
Intel	5
Civil Engine	3
Cyber Oper	2
Fighter Pilot	2
Mobility Pilot	2
UVA Pilot	1
Logistics	1
Electronic	1
	25

Countries	
Algeria	1
Cameroon	1
Canada	1
Colombia	1
Czech Repub	1
Germany	1
Hungary	1
India	1
Jordan	3
Macedonia	1
Malaysia	1
Mexico	1
Netherlands	1
Norway	4
Pakistan	4
Philippines	2
Seychelles	1
Sri Lanka	1
Turkey	5
Uganda	1
United Arab	2
	35

P-Code

Joint Information Operations Curriculum

N =18

USA	13
USAF	2
INT	2
USMC	1

USA	
Information Operations	12
Public Affairs	1

Male	18
Female	1

USAF	
PSYOP	1
Analytic Scientist	1

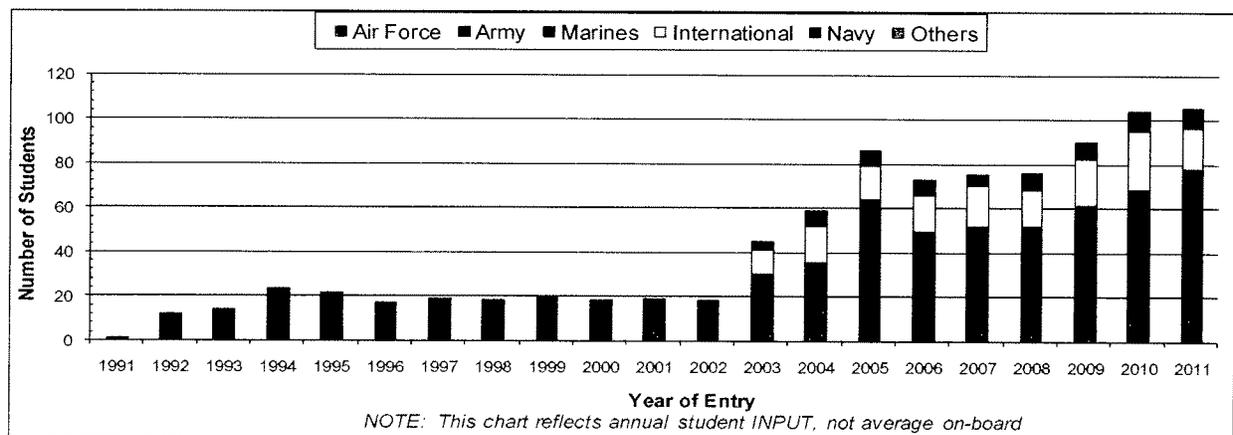
USMC	
Intel	1

German Navy	1
Singapore civilian	1
Cameroon Air Force	1

The enrollment trend has been generally positive over the past five years (see graph below). The jump in student numbers was driven primarily by an Army SOF decision to rebalance ILE priorities and place more emphasis on attending NPS vice Command and General Staff College. As a result, in 2008, Army SOF enrollment jumped to 55 per year from 30. While Navy SEAL enrollment numbers have remained relatively constant, six per year, a recent curriculum review conducted by WARCOC recommended the SEAL community try to reach an annual input of nine a year.

Our Marine numbers have been nearly non-existent since the mid-90s, although we recently received a Marine intelligence non-commissioned officer (NCO) in the JIO curriculum last year. The Department has made serious outreach to numerous Marine Corps general officers, to include two Commandants, in hopes of attracting Marines back into the program. To a man, they all agree their officers need to be present in Defense Analysis, but they are thwarted by an outdated personnel bureaucracy. The Department continues to work with USSOCOM, Marine Corps Special Operations Command, the Marine Corps Warfighting Lab, and others to bring Marine Corps students back into the program.

Lastly, as the result of an increase in tuition charged to Air Force students to match the tuition that the AF Institute of Technology charges sister services (\$340 per credit hour), the Air Force suspended new students from applying to NPS effective FY12. While the unexpected jump in tuition supposedly caught the Air Force off-guard, the Air Force was already in the middle of a complete review of their graduate education and PME programs due to a significant budget shortfall. The DA Department worked overtime with USSOCOM, AFSOC, and the AF A-1 to turn the special operations slots back on and put in place a different funding mechanism. While the Department will now receive Air Force officers in FY12, long-term funding has yet to be resolved. In addition, we are still working to retain our AF Fellow position, also slated to be cut in FY12 due to “over-execution of man-years in the Fellowship program.”



## B. Preparation of students

US students applying for one of the DA programs must meet a minimum academic standard as set in the Department's Academic Profile Code (APC). The APC is set currently at 365. The 3 indicates a minimum of a 2.2 recalculated GPA (all failures and repeats are included); the 6 indicates no college level math; and the 5 means no calculus-based physics or technical backgrounds. The Department no longer requires GRE testing, and all US students must be able to apply for a Top Secret clearance.

Army and Air Force students must submit their application and transcripts in order to receive from NPS a conditional acceptance letter. With that letter in hand, these officers can then apply for their Services' fully funded graduate programs. Final selection is based on outstanding professional performance, promotion potential and a strong academic background.

Army SOF officers are actually boarded by a senior officer panel from the Special Warfare Center and School. Air Force officers attending the DA Department are generally selected in conjunction with selection to attend in-residence IDE.

For Naval and Marine officers the process is similar and extremely selective, except these officers apply directly to their detailers.

While we get the best and brightest from the Services, not all are academically prepared the same. One shortcoming noticed several years ago common among the students was their poor writing skills. The Department has since mandated a first quarter writing and composition class that prepares students for what's expected over the next 18 months. This writing class is considered a core course in both curricula.

A new initiative just under way is to raise the APC from 365 to 265, effectively raising the minimum GPA from 2.2 to 2.6. Over the last few years, the Department has noticed an increase in the number of students who struggle to complete the program and have a difficult time keeping up with the course work. Those difficulties then manifest themselves in the poor quality of their theses. In order to ensure we don't put students (proud combat-proven officers) in positions where they shouldn't be, we hope a slight bump in the min GPA will ensure we get those students most capable of successfully completing the program. SOF Branch, Army Human Resources Command, has already given their thumbs up. The idea is now being socialized at the SOCOM component level.

## C. Student Support

Student support is a shared responsibility by all professors and staff within the Department. There are no teaching assistants to serve as a first line of support. Research assistants are hired, but only to assist faculty in their reimbursable research efforts, not to serve as faculty interface with the students. Without a doubt, our faculty has internalized the Department's education mission that makes students "priority

number one.” Therefore, our students have direct access to the faculty 24/7 either in person or via e-mail every day. Our faculty, whether tenure or non-tenure track, are expected to stand in the classroom each and every lesson of the given section and deliver the content in a highly effective manner; engage each and every student to assess their capabilities; grade every paper or project; counsel as needed; and comment on individual student performance as necessary...and sometimes that’s recognizing the stress that repeat combat tours can have on an individual and their family. Each faculty member serves as a thesis advisor or second reader dedicating the time necessary to ensure their student(s) produce a quality capstone product. Bottom-line...the faculty is the first line of student support.

After individual professors, the Department relies on the Program Officer, the Associate Chair for Operations, and the Special Operations Chair to provide the next line of support. That support can include in-depth academic and professional counseling, family support and intervention, mental health support, assistance with housing issues, etc.

Purely admin support is offered through the NPS Dean of Students and Student Services (includes leave, travel, household goods pick-up/delivery, etc).

#### D. Student Productivity

With very rare exceptions, all coursework must be completed in 18 months. When considering that our students have the extra burden of having to complete their mid-level PME during that same 18-month period, the high completion rate is even more amazing. In the last five years, 18 students did not receive their degrees, and most of those cases were the result of not completing their thesis (we expect two students to complete their theses by this summer; others are still on thesis extensions). Over 360 theses have been submitted and approved since 2007. In 2010, the Department adopted a formal Capstone Evaluation process to rate the quality of our theses and identify areas for improvement. See Appendix G for a copy of the Department’s Capstone Evaluation tool. In addition to the Capstone Evaluation tool completed by the primary reader, the Department Chair reviews every thesis for quality before their final acceptance by the thesis processing office and the award of a “green card” to the individual student.

An artifact of rapid student growth, the Department, in the past, allowed teaming on theses of sometimes up to four students. However, that policy is coming to an end as faculty numbers have finally begun to catch up with the increased student population. Co-written theses will be discouraged, and, when justified, limited to two students only.

#### E. Graduate Profile

Nearly 900 students (officer, enlisted, warrants, and intl officers and civilians) have graduated from the Defense Analysis Department since its inception in 1992. 53 of

those graduated from the smaller and much newer JIO curriculum. Below is a breakdown of our graduates over the years by Service and job type.

DEPARTMENT OF DEFENSE ANALYSIS						
GRADUATE AFFILIATION*						
NAVY	ARMY	AIR FORCE	MARINE CORPS	INTERNATIONAL		
Special Warfare 87	Special Forces 253	SO Aviation 48	Amtrack 2	Albania	Mexico	UAE
Intelligence 8	PSYOP 51	Intelligence 26	Artillery 1	Canada	Norway	Peru
Aviation 7	Civil Affairs 20	AF Aviation 27	Infantry 2	Ecuador	Uganda	
Surface 13	Rangers 14	CCT & PJ 4	Armor 1	Georgia	Pakistan	
EOD 11	SO Aviation 6	Communications 8	Air Command & Control 1	India	Turkey	
Medical Corp 1	SMU 6	IO (JIO/698) 12	Systems Eng. 1	Indonesia	Greece	
IO (JIO 698) 1	OPS CF 66	Security Forces 7		Jamaica	Lebanon	
	IO (JIO 698) 31	Other 11		Lithuania	Tanzania	
				Malaysia	El Salvador	
				Morocco	Bosnia	
				Hungary	Yemen	
				Bangladesh	Thailand	
				Philippines	Bulgaria	
				Romania	Honduras	
				Singapore	Kenya	
				Taiwan	Ethiopia	
				Czech Rep	Brazil	
				Paraguay	Nigeria	
				Colombia	Jordan	
				Algeria	Saudi Arabia	
				Azerbaijan	Ukraine	
				Poland	Tunisia	
				Cameroon	Macedonia	
				Nepal	Belize	
<b>TOTAL</b>	<b>128</b>	<b>447</b>	<b>143</b>	<b>8</b>	<b>152</b>	

\*As of Jan 2012: **878** Graduates

17

After graduation, utilization is different based on each Service. By and large, our Army graduates go on to company command or fill some other required “key and developmental” job like theater special operations command planner. Most of our Air Force officers, here for their in-residence PME, will go to a required staff job after graduation. For our naval officers, while there are P-coded billets for this program (mandatory pay back jobs), most of them will go back to operational assignments because of the high OPSTEMPO of the last 10 years.

Many of our graduates and Senior Service War College Fellows have gone on to the highest levels of command within their respective Services and/or in the joint world. Refer to the slides below for a list of some of our most distinguished graduates.

## Distinguished Alumni

### *American General Officers / Flag Officers*

#### **U.S. Navy**

- ADM William McRaven '93 (CINCSOC)
- RADM Edward Winters '94 (NAVSPECWARCOM)
- Mr. Michael Lumpkin '95 (Principal Deputy ASD SO/LIC)
- RADM P Gardner Howe, III '95 (Assistant CO, JSOC)



#### **U.S. Army**

- BG Eric Wendt '95 (Commander, 1 SFG), Former military assistant to SECDEF Gates



#### **U.S. Air Force (Fellows)**

- MG (S) Michael Kingsley '03, (AFSOC)
- BG (S) Albert M. "Buck" Elton III '08, (AFSOC)



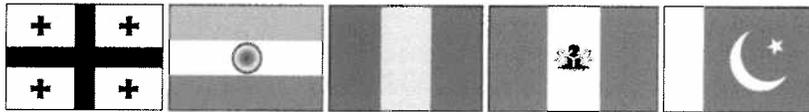
8

## Other Distinguished Graduates

### *International Officers*

#### **Combating Terrorism Fellowship Program**

- Andro Barnovi '05, Deputy Minister of Defense, Republic of Georgia, Rector, Nat'l Defense Acad.
- MG Ravindran Rajan '06, Indian Army
- BG Adrian Ciolponea '07, Romanian Army
- MG Sani Ibrahim '07, Nigerian Army
- BG Zahid Mann '10, Pakistan Army



9

There are many more Army graduates in group, battalion, and company command. In the Air Force Special Operations community there are several graduates in group and squadron command. Our Naval officers are no different ending up in leadership

positions throughout the joint special operations community. Our JIO graduates have also done well filling critical billets at the Joint Information Warfare Center and the new Cyber Command. Others have gone on to command Communications or Intelligence squadrons or battalions.

## SECTION VI: RESOURCES

### A. Administrative Staffing

The Department's support staff consists of two GS-rated Admin Support positions and one student aide, plus a Program Manager paid for by SOCOM. These four individuals manage the Department's budget, contracting, time keeping, payroll, travel and honoraria, purchasing, student/faculty/thesis databases, faculty activity reports, lab recapitalization, etc. In addition, the Program Officer also builds the yearly academic plan and associated teaching budget; sets the teaching schedule for each individual faculty member taking into account faculty preferences and in accordance with the 9-month model; manages all student scheduling and PME requirements; and more. The Department's support staff is operating at maximum capacity because of new requirements being levied by the school administration in the form of migrating to a new financial and accounting system (KFS), new contracting rules, a new scheduling and academic support program (Sakai), a reinvigorated management internal compliance program, new travel requirements, conference restrictions, etc. And, as the mission budget shrinks, the amount of money budgeted for support staff has fallen way short of the actual cost, with the shortfall picked up by Department reimbursable dollars. For example, in FY 12, the funds allocated for staff were \$61,370, or about 49% of the real cost of staff support.

On top of the employees identified above who work directly for the Chairman, each of our high profile centers/labs has hired and funded their own admin staff (one to two people per center). Two of those positions are paid for out of reimbursable dollars, while the third position was converted to an AD position.

### B. Facilities and Equipment

One constant limiting factor at NPS, and especially here within the DA Department, is space. There is a finite amount of office/lab space across campus and no real policy on how best to allocate that space. Processes have been established, but not adhered to. Space allocation surveys have come and gone multiple times, but never leading to concrete changes. Department growth/expansion is always hindered by space shortfalls. In the short term, the Department needs to secure two additional office spaces for two incoming faculty hires this summer and another office space for a proposed hire the following year. In order to make space for the new faculty hires this summer, the Department is having to convert a conference room (sometimes doubled as a classroom) into research assistant office space which will immediately free up one, maybe two, faculty offices. Recently acquired space necessary to support the rapid growth in the CORE Lab was only made possible through the direct intervention of the NPS President. The Department's contention all along has been to set priorities and allocate space based on those priorities which are directly tied to the school's primary mission...educating our military's future leaders.

School-owned classrooms are sometimes hit and miss reference their overall condition and suitability. For example, Root Hall Room 208 is still missing its acoustic ceiling tiles after Root Hall went through significant renovation over a year ago. Without the ceiling tiles, the classroom is nearly unusable because of the poor sound quality. As to equipment, the Department's labs/centers and one dedicated classroom, Root Hall Room 204 (basically a computer lab), fare very well because of annual lab recap, IMET, and sponsor monies.

C. Financial Resources

**Department of Defense Analysis 2011 Budget**

<b>Mission Budget</b>	3,149,739.00
Faculty	3,046,819
Staff	61370*
Non-Labor	41,550

\*63,875 from other sources

All Reimbursable Research	8,745,588
All Reimbursable Education	767,807
<b>Total</b>	<b>9,513,395</b>

<b>Sub Units</b>	
CORE Lab Reimbursable Research	1,705,204
Information Operations Center of Excellence	300,000

As to the Department's budget, there are two major issues we deal with: 1) section size, and 2) tuition. With the fairly rapid growth in student numbers after 9/11, the Department's professor to student ratio has grown to be one of the largest on campus. Historically, the school has allocated the direct teach or mission budget based on the projected number of sections taught. In FY 11, the Department taught a total of 106 sections, but if you used the NPS stated goal of sections no larger than 15 students, the Department would have had to generate 126 sections! That 20 section difference equates to five additional tenure track faculty positions. Hence, the final approval to hire three tenure track faculty will help us to significantly reduce our section size/student ratios. See Appendix H for the analysis of sections taught and for previous budgets beginning with FY2007.

Tuition is another long-standing concern for the Department, both what is the right cost and is it institutionalized in our sponsors' budgets. To that end, the Department has

been assisting the USSOCOM staff in finally getting Army and Air Force SOF tuition placed in the SOCOM POM as a program of record at a slight discount rate from the current NPS tuition costs. The reason for the slight discount for USSOCOM-sponsored students is due to the fact that USSOCOM supports the school in other in-kind ways, whether through reimbursable education or reimbursable research.

## SECTION VII: ASSESSMENT AND REVIEW

### A. Curriculum Review Process

WARCOM, SOCOM's designated executive agent for the Special Operations/Irregular Warfare curriculum, conducted a detailed review of the SO/IW program last year, culminating in a March 2010 outbrief by RADM Ed Winters, WARCOM Commanding Officer, to NPS President Daniel Oliver. One key outcome of this latest review was the update to our Educational Skill Requirements, or ESRs, that provide sponsor guidance on curriculum content. Most of our ESRs simply needed updating to reflect the last 10 years of war, but the basic ideas and concepts that inform our curricula were little changed.

### B. Other Assessment Processes

Besides the formal assessment tools of curriculum and academic program reviews, the Defense Analysis Department has a long history of assessing its program through other, more frequent means. Because of our strong connection to our sponsors, primarily USSOCOM and its component commands, we receive several senior officer visits a year that result in immediate program feedback and suggestions. Additionally, our curricula receive regular scrutiny from our senior War College Fellows and from the SOCOM representative assigned to the Department (serving in the role of SOF Chair). We also seek out regular student feedback interviewing each class or cohort as a group two times during their course of study. Students provide regular feedback on the faculty at the end of each quarter filling out anonymous student observation forms that address the professors' performance (SOF report). The resulting scores are then made available to the Department Chair.

One other internal assessment recently generated in preparation for our WASC evaluation was the RAP document or Record of Academic Program changes document. See Appendix I.

### C. Internal DA Faculty Assessment

In accordance with Professor Arquilla's request, Associate Professor Douglas Borer personally interviewed in private each of the department's regular civilian faculty members (lecturers and professors of all ranks). The intent of these interviews was to ascertain each person's views on the general state of affairs in Defense Analysis. Three broad categories framed most of the discussion: 1) internal processes (governance); 2) the academic program writ large (the curriculum, students/theses, research); and 3) the way forward (the future). Professor Borer welcomed discussion of any other issues that faculty members wished to pursue. (He is the sole author of this section of the document).

As one would expect, there is a diversity of opinion on these matters. Overall, the DA faculty is very satisfied with the state of affairs of the department, but its members are

concerned with the issues outlined below. Although selective substantive disagreements over past and present issues is the norm, the leadership of both the previous Chair (Dr. McCormick) and the present Chair (Dr. Arquilla) is highly respected and strongly supported.

The following narrative is an attempt to capture the broad parameters of Dr. Borer's discussions:

### **1. Internal processes.**

The DA Department is lead by a Chair who is appointed by the Dean (after having been nominated by the department). The norm at NPS is one in which power is concentrated rather than distributed. The DA Department reflects the "strong Chair" model (often referred to "Heads" at other schools). The history of the internal processes and governance in the department can be characterized as one based almost solely on the discretion of its Chair. The norm has been for input from the faculty occurring primarily in direct informal discussion/consultation between the sitting Chair and individual faculty members (not in group meetings). Some faculty members have utilized this approach, others have not, or done so sporadically. Historically, traditional faculty meetings that exist at other institutions have not been the norm. The DA Department has no formal or codified set of "by-laws," "management rules," or "working papers" to establish working processes, committees, responsibilities and/or authorities, etc.

A small minority of the faculty would like to see more codified rules and guidelines. A very significant majority of the faculty approves of the status quo. However, it should be said that many who presently express satisfaction with the status quo are also concerned that as the department adds more faculty, more formal rules and processes might be needed. Many of these same faculty members also stated that any codification or rule making that constrains the present discretion and authority of the Chair should be done cautiously and with due deliberation.

It should be noted the functional responsibilities and authorities of the Associate Chairs and the Academic Associates are not well understood by many of the faculty.

The trend over the most recent nine months has been for the Chair (Dr. Arquilla) to regularly call faculty meetings (every six weeks or so). These meetings have served as 1) "informational events" where the Chair keeps members of the faculty apprised of the myriad of visitors, projects, and happenings that impact the school, the department, and the department's primary sponsors; and, 2) "decision events" where faculty vote on hires and other matters. This more routinized meeting approach has been met with

universal support. (An observation that many faculty members offered is that official minutes of these meetings should be taken so that any decisions are recorded for posterity).

The general view is that the DA Department has been very well served by its internal leadership and by this “strong chair” model since the department’s inception. Those not sharing that view are in the minority. It is fair to say no consensus exists.

## **2. The Academic Program.**

The general high level of satisfaction with the internal processes and leadership of the department fades somewhat when faculty members discuss various elements of the academic program.

### ***The curriculum.***

There are many concerns within the faculty over the curriculum. Issues relating to methodological requirements and alternative options, the matrices, the core courses, the balance between core and electives, and the impact of the JPME courses are all subjects of interest to various faculty members. It is the understanding of the faculty that previous curriculum reviews have taken place between the department leadership (consisting of the Chair and the Academic Associate of the SOLIC curriculum) and the outside sponsors (i.e. SOCOM representatives and the SOF Chair). DA faculty members outside of these positions were not involved or consulted.

*The bottom line: there is wide ranging interest in an internal curriculum review that includes the entire regular teaching faculty.*

### ***Students/Theses***

- a. There is significant concern across the faculty as to the imbalance of thesis advising distribution. Some faculty members advise dozens of student each year. Other faculty members advise no students or few students each year. There is significant interest in the faculty to discuss the origins of this problem and to consider alternative approaches to spreading the work load, (such as numeric restrictions).
- b. There is significant interest in faculty in discussing how to improve the quality of theses.
- c. There is significant interest in discussion of other quality control possibilities (admission requirements, grading standards, etc). There is broad support of any initiative that would screen out the international students who lack sufficient English skills to conduct graduate-level work.
- d. There is great interest in establishing a maximum class size of 20 students.

## **Research**

Almost no discussion ensued about the availability of reimbursable research funding or a lack of potential support for research from outside sponsors.

The main concerns about research were expressed regarding:

- a. Department and University standards for tenure and promotion (to Associate Professor and to Full Professor) and how expectations of those standards are conveyed to faculty. A number of faculty members suggested the need for a well organized third year review process for untenured faculty rather than the ad hoc arrangement that now exists.
- b. Based on past performance there exists a very low degree of confidence in the NPS financial management system and its personnel. There is high confidence in our present departmental staff (Ms. Duncan and Ms. Capson) in making sure these matters do not unduly trouble the faculty. However, the very costly and time consuming bureaucratic requirements of administrating reimbursable research impact all PI's.
- c. The fine activities of the CORE Lab are made highly visible by the department leadership and the SOF Chair. It is suggested that other successful research projects be given greater acknowledgement.

## **3. The Future**

Discussions of the future were highly varied and idiosyncratic.

Externally, people are concerned with the federal budget and the downstream effects to NPS. Although our DA Department's role in support of the Special Operations Forces (SOF) community seems to ameliorate the possibility of extinction, if NPS is closed by the Navy, our individual and collective futures are uncertain.

Internally, most faculty members know that they have been effectively shielded by the former Chair (Dr. McCormick) and present Chair (Dr. Arquilla), from internal NPS management and process challenges and turmoil. Almost all faculty members acknowledged and wished to sincerely thank our Chairs for allowing them to focus on teaching and research.

Nonetheless, the faculty recognizes that NPS has many internal issues that negatively impact the DA Department (gross imbalance in student-faculty ratios between departments; non-existent logical processes to allocate lab and office space; creeping elitism as witnessed by an infestation of assigned parking spaces; poorly understood creation of new administrative positions and the sources of funding for them, odious amounts of required on-line training for seemingly irrelevant DOD requirements, etc).

Many members of the DA faculty trust that Dr. Arquilla will be given wide latitude in describing these problems to the external reviewers. Also, some faculty members expressed interest in speaking directly to the reviewers in private.

Within the department, Dr. Arquilla's stated intent to hold an "all-hands" off-site review following the external review has the support of many faculty members.

In sum, the faculty is generally very positive about the future, and generally quite satisfied about the past and present state of affairs at NPS/GSIOS/DA. Everyone is busy and remains committed to core NPS mission of building human capital within those national security organizations that are tasked with defending the United States and its international partners.