



NAVAL  
POSTGRADUATE  
SCHOOL

# DoD IO Center for Research

## Information Strategy & Political Warfare (698 Curriculum)

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The Nation's Premier Defense Research University

Monterey, California  
[WWW.NPS.EDU](http://WWW.NPS.EDU)



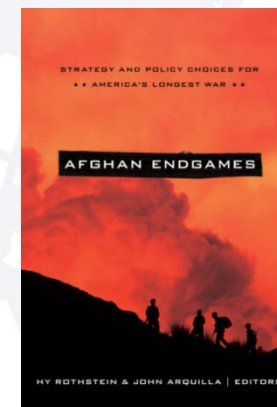
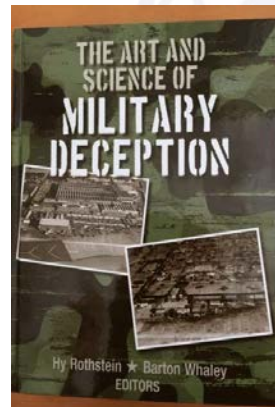
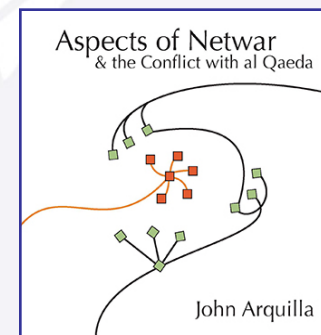
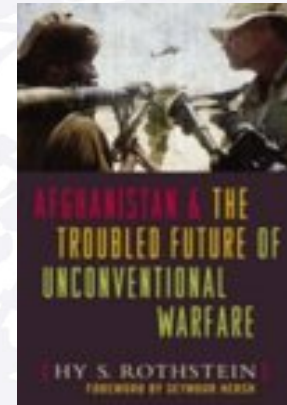
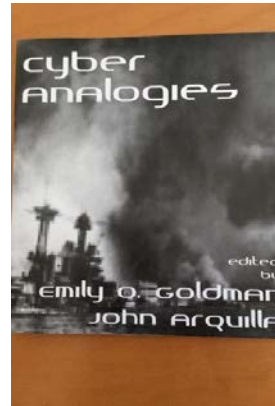
- History
- Research overview
- Institutional collaboration
- Conferences & workshops
- Student activities
  - DC field trip
- Curriculum/matrix review



- Starts with 2002 DPG & resulting 2003 DoD IO Roadmap
- Authorized by DEPSECDEF Wolfowitz in Sept 2004, endorsed by CJCS GEN Myers
- Requirement reconfirmed by DEPSECDEF Carter in Sept 2012
- Center supports curricula at NPS with related research, conferences, other activities
- Acts as focal point for IO scholarship throughout DoD
- Center and curricula linked
- Charter signed February 2015

# Selected Research Contributions

- Edited volume, Information Strategy & Warfare (Routledge, 2007)
- Afghanistan & Unconventional Warfare (ASD-SOLIC, NIP, 2006)
- Aspects of Netwar & the Conflict with al Qaeda, (OSD, 2009)
- Afghan Endgames (RRTO, GUP, 2012)
- Disrupting Dark Networks (Cambridge, 2012)
- The Art & Science of Military Deception (OSD, Artech House, 2013)
- Cyber Analogies (USCYBERCOM, 2013)
- Assessing War: The Challenge of Measuring Success and Failure (RRTO/AWG, Forthcoming 2015, GUP)
- Book on jihadi information operations by Prof. Glenn Robinson (forthcoming Stanford University Press)
- Book on “dark networks” by Prof. Nancy Roberts (in process)





- Identity Management initiative with SOCOM
- Initiative to establish a new “Bletchley Park” to exploit, undermine terrorist use of Web/Net, under aegis of VCJCS & USDI
- DIA work with Prof. Dorothy Denning and NPS students to secure dot.com domains of contractors
- Tactical Network Topology (predecessor to JIFX) collaboration and research involving faculty and students (SOCOM funded)
- CORE Lab social media research – Dynamic Twitter Network Analysis (DTna) project
- Critical analyses of Navy Marine Corps Intranet (NMCI), one conducted prior to creation of system, one since



- Special Operations Command – Integrated first combined cyber exercise where EW, CNO & other IO tools were used in direct support of a Special Operations team’s simulated attack on a WMD facility
  - Also supported the integration of IO activities into Defense Analysis thesis work related to the evaluation of light attack aircraft for SOF
- NPS Foundation, Panetta Institute, UC Davis, DAUK, Monterey Institute of International Studies, Estonia’s Cooperative Cyber Defense Centre of Excellence
- Cebrowski Institute, Global Public Policy Academic Group, Technology Review & Update (TRAU) short course for technical personnel & decision makers





# Selected Conferences Hosted at NPS

- “Understanding Terrorist Networks and Organizations”
- “Information Operations Education Throughout DoD”
- “The War of Ideas and the Global War on Terror”
- “Information Operations and Force Transformation”
- “Cyber Conflict, International cooperation & Deterrence”
- “Countering Insurgent Violence, Winning in Iraq: Understanding the Dynamics of Contemporary War”
- “Beyond the GWOT”
- “Afghanistan Endgames Workshop”
- “FARC Network Analysis Workshop”
- “Iran Futures Workshop”
- “Cyber Endeavour”
- Assessing War Workshop
- Gang/terrorist connection

Note: The IOCR also participates regularly in conferences on related topics throughout the country



- Quarterly info-wargaming exercises, including streamlined version of Aegis Research Corp.'s "Info Chess"
- Classified student real time interaction & reach-back (Afghanistan) between current & former students & faculty
- International graduate student communication & reach-back
- Student & faculty collaboration with city of Salinas on gang problems exploring links between gangs and terrorists.
- Black Hat, DEFCON & other hacker contacts facilitated by IO Center
- Participation in all conferences and workshops



- Marine Corps Information Operations Center (MCIOC)
- Central Intelligence Agency
- DOS Center for Strategic Counterterrorism Communication (CSCC)
- Pentagon
- US Army Cyber Command
- 1st IO Command
- USAID
- USCYBERCOM
- DARPA

Note: There is some flexibility with organizations visited each year

- Our goal: “Train for certainty, educate for uncertainty”  
General Schoomaker, Commander SOCOM, 1997
- We have accomplished this by building programs that are designed to enhance the student’s ability to:
  - Think more clearly, creatively, and analytically
  - Avoid the pitfalls of “conventional wisdoms”
  - Find and use evidence to advance an argument
  - Employ a broad range of analytical and theoretical tools to improve operational effectiveness
  - Innovate and adapt in the face of uncertainty

***This means a better commander, planner, operator***

“The Third Fleet's sunken and damaged ships have been salvaged and are retiring at high speed toward the enemy.” –Admiral William “Bull” Halsey, Jr.

**Curriculum Objective:** *Educate military personnel to better defend the nation and prevent, prepare for, and prevail in conflicts by operating effectively in the information environment.*

We need to be able to engage, inform, persuade and **influence** a wide range of audiences and stakeholders.

- Engage and inform **allied and friendly audiences** about national and military objectives:
  - Who we are, what we’re doing, why it matters
- Engage, inform, persuade and influence **neutral audiences**:
  - Convert them to allies, or dissuade them from aiding/joining adversaries
- Influence **adversaries**:
  - Discourage, demoralize, confuse and deceive
  - Corrupt, disrupt or usurp their ability to communicate and make decisions that will hurt us

**Proper execution results in an environment “shaped” to facilitate achieving military and policy objectives effectively and efficiently.**

- We also need to protect our own communications, information systems and decision-making from adversary attempts to influence, corrupt, disrupt or usurp them via manipulation of the information environment



## IS & PW CURRICULUM

21\*  
Course  
Requirement

Guest  
Speaker  
Series

Symposia  
and  
Roundtables

IO  
Related  
Thesis

**One of the most effective masters degree programs available**

\*Not including ILE



- Military Art and Operations
- Emerging Security Challenges
- Information Operations
- Analytical Methods and Applications
- Information Systems
- Intelligence Processing and Applications
- Theses and Reports
- Blends technical & non-technical aspects of IO



Guarding an Internet Cafe



# Educational Skill Requirements (ESRs)

**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.

**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.

**INFORMATION STRATEGY:** 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.

**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.

**INFORMATION SYSTEMS:** Graduates will have a systems level understanding of information systems and their vulnerabilities as well as capabilities.

**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.

**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.



# NPS 698 Curriculum 18-Month M.S. Program\*

QT 1 WINTER	QT 2 SPRING	QT 3 SUMMER	QT 4 FALL	QT 5 WINTER	QT 6 SPRING
DA2010 TECHNICAL WRITING & ENGLISH COMPOSITION	DA 3101 WARFARE IN THE INFORMATION AGE	DA 4107 PUBLIC DIPLOMACY, THE MEDIA & PSYCHOLOGICAL WARFARE	DA 3180 WARFARE IN THE ELECTROMAGNETIC SPECTRUM	DA 3104 COMPUTER NETWORK ATTACK AND DEFENSE	DA 4106 TRUST, INFLUENCE AND NETWORKS
DA 3882 DETERRENCE, COMPELLENCE AND CRISIS MANAGEMENT	IO 4300* IO PLANNING AND EXECUTION	DA 4302 WICKED PROBLEMS Or DA 3610 VISUAL ANALYTICS	DA 3120 JIHADIST INFORMATION OPERATIONS, I	DA 3270 INTELLIGENCE IN THE INFORMATION AGE	DA4104 MILITARIES & TECHNOLOGICAL CHANGE
MN 3121 ORGANIZATIONAL DESIGN	DA 4460 ALTERNATE RESEARCH METHODS & DEFENSE ANALYSIS	DA 3105 CONFLICT IN CYBERSPACE	DA 4108 DECEPTION, DENIAL, SURPRISE ATTACKS& COUNTER- DECEPTION	DA 3110 CULTURE AND INFLUENCE	DA 0810 THESIS RESEARCH
DA 2410 MODELING FOR MILITARY DECISIONMAKING, I	DA 3410 MODELING FOR MILITARY DECISIONMAKING, II	DA 4410 MODELS OF CONFLICT	DA 3750 ANTHROPOLOGY OF CONFLICT	DA 4600 TRACKING AND DISRUPTING DARK NETWORKS	DA 4710 CRITICAL THINKING AND ETHICAL DECISION- MAKING

Human  
Dimension

Military Art  
& Operations

Technical

Elective

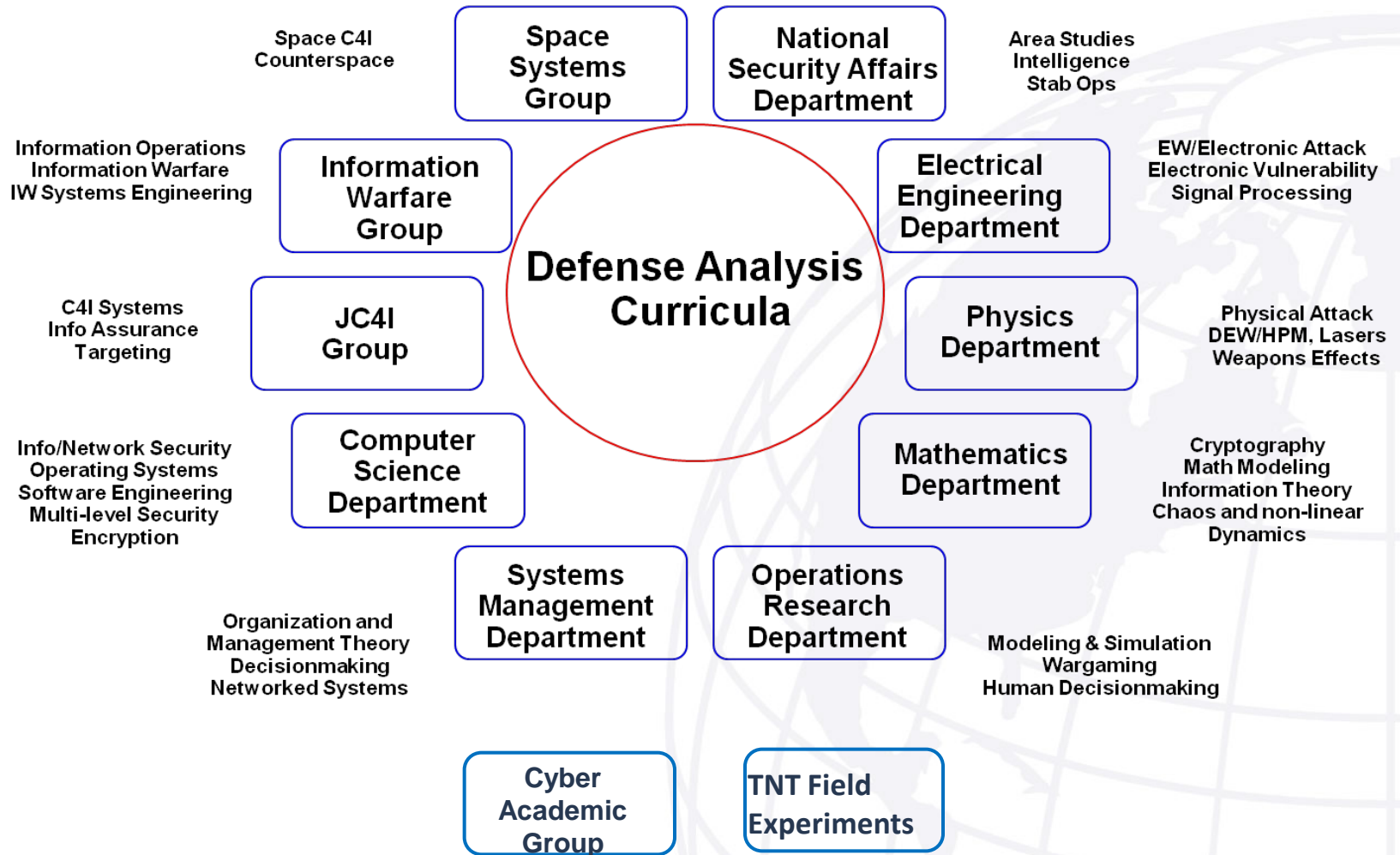
Thesis

Customized elective sequences that draw on courses from academic departments throughout NPS are available to students with approval of the academic associate

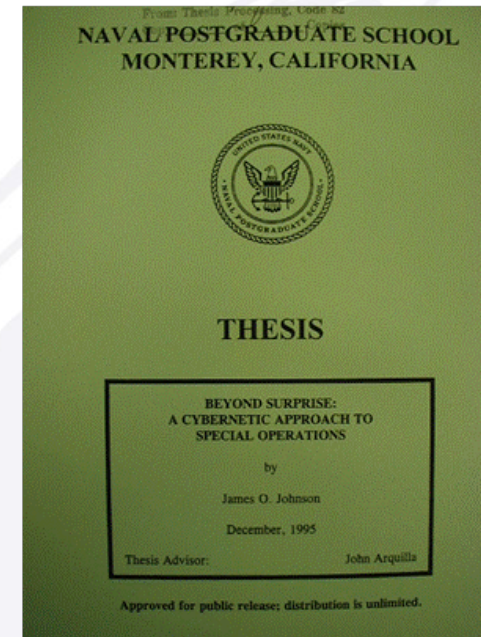
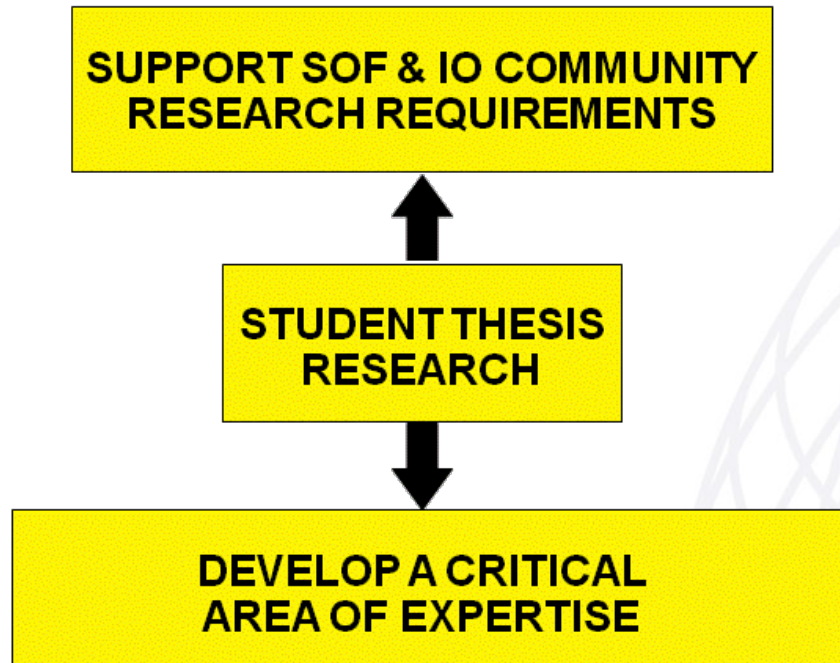
\* JFSC JIOPC certificate awarded to students who complete IO4300+  
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# Department of Defense Analysis A Multifaceted Educational Program

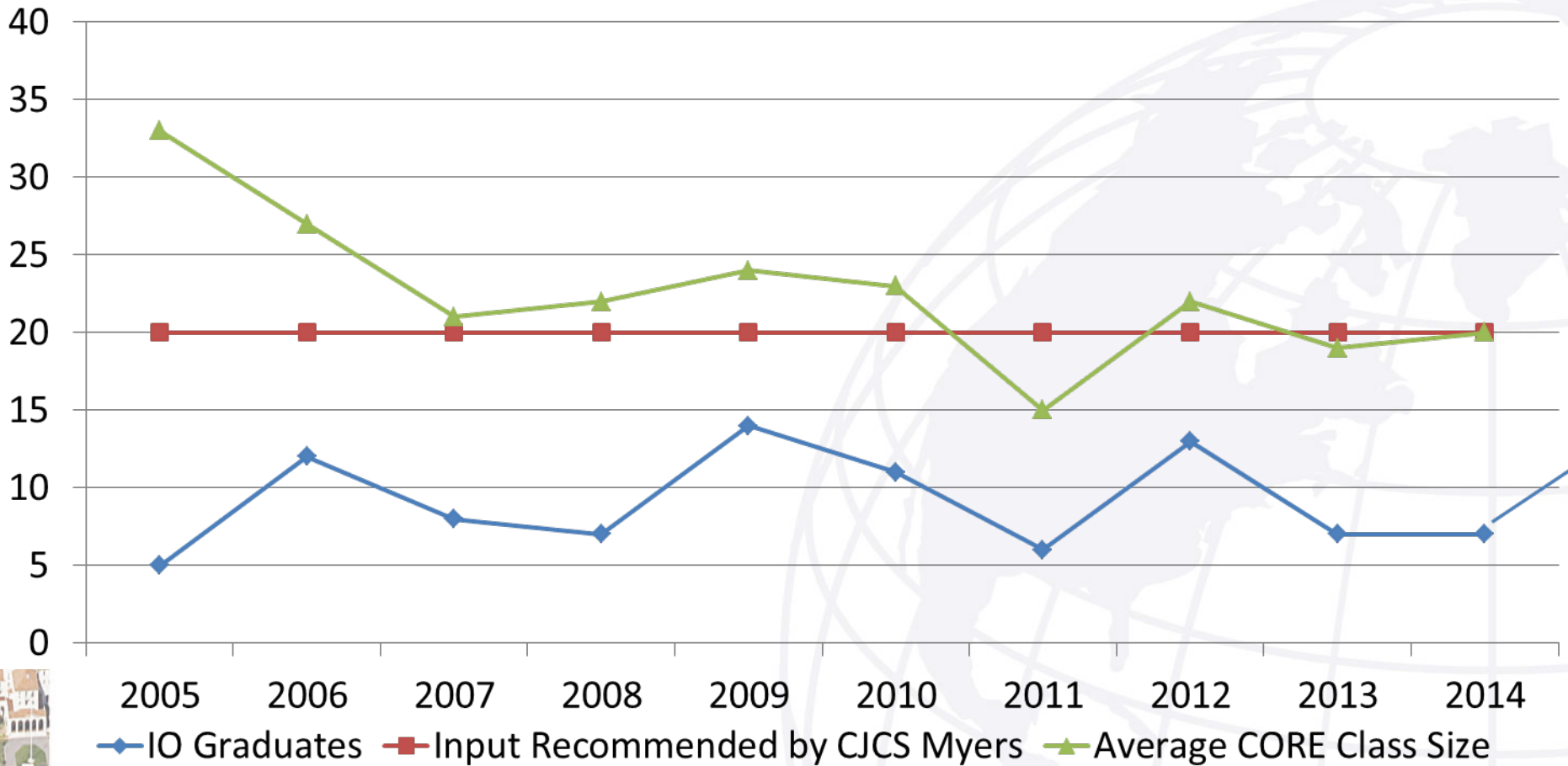








# Average Core Class Sizes, Graduates per Year





- High impact research
- Quality education for operating in the information environment – tech and non-tech
- Cross-pollination of ideas and projects campus wide and beyond
- Institutional boundary spanning
- Solid track record of policy support