Computer Science Meets Foreign Policy

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Jefferson Science Fellowship
National Academies

• Science and engineering advisors for the State Dept and USAID
  – 1-yr fellowships for tenured professors
  – Requires a security clearance
  – ~13 fellows per year; this year, only USAID (7)
• Salary/benefits paid by home university
  – Variety of arrangements
  – Living allowance (per diem), small travel budget
• My cohort
  – 3 CS, 1 chemist, 2 earth science, 1 physicist, 1 botanist, 2 engineers, 2 MDs, 1 veterinarian

sites.nationalacademies.org/pga/jefferson/
The Process

• Applications and institutional MOU due Oct. 31
  – Essay and briefing memo
  – Letters of recommendation
• Interviews and decision in December
  – Ability to communicate succinctly and politely
  – Can you explain your ideas to non-scientists?
• Placement week in February
• Term: August to August
• Security clearances are an issue
Why me?

• 2 years overdue for sabbatical
  – Didn’t want to start a company or visit a university

• Obligation to participate
  – CS issues colliding with society and policy
  – Technical expertise in DC dominated by military and intelligence mind set

• The research case
  – Modeling large-scale cybersecurity interventions
My year at State
2013-2014

• Communication and Information Policy office
  – Multi-lateral fora: ITU, ICANN, OECD, etc.
  – Internet governance
  – Bilateral meetings with other countries
  – CFIUS processes, satellites

• Coordinator for cyber Issues (S/CCI)
  – Confidence building measures for cyberspace
Issues of the Day

• Who should control the Internet?
  – IANA transition
  – US strategy for intl. negotiations (ITU, OECD, etc.)

• Privacy and surveillance
  – Data localization
  – The Podesta Report

• Cyberwarfare and economic espionage
  – Zero-day exploits
  – Norms in cyberspace, attribution

• Spam and the global south
Internet Assigned Numbers Authority

Transitioning the IANA Functions

3/14/2014 “U.S. to cede its oversight of addresses on Internet” NY Times
4/2/2014: U.S. House Hearing on Internet Stability and IANA
5/23/2014: DOTCOM ACT passed by House

• U.S. asked ICANN to convene global stakeholders to develop a consensus-based proposal for transition
  – 6 months of preparation leading up to the announcement
• Interagency task force to establish criteria for successful proposal
  – Support and enhance multistakeholder model
  – Maintain security, stability, resiliency of DNS
  – Meet needs of global customers/partners of IANA
  – Maintain the openness of the Internet
  – Accountability
**Research Outcomes**

- Spam and botnet takedowns (ACSAC, 2015)
- Attribution of cyber attacks (PNAS, 2017)
- Data breaches (WEIS, 2015)
- Censorship and Internet architecture

### The Blame Game

The blame game is depicted in a diagram showing how player A's and player B's strategies interact. The game involves a sequential decision where A chooses to attack or not, and B then decides to blame or not blame for the attack. The outcomes are categorized into four main scenarios:

1. **No Attack, No Blame**
2. **No Attack, Blame**
3. **Attack, No Blame**
4. **Attack, Blame**

The diagram illustrates the decision tree for each player, with nodes representing the initial action (Attack or No Attack) and branches showing the outcomes based on whether B bladder or not. The payoffs for each outcome are typically represented in terms of gains and losses, reflecting the strategic interactions between A and B.
Reflections

• DC is very different from NM
  – Having a cohort helped, visiting NSF helped
  – State ‘is not a technical agency’
  – Workflow is different; no version control
• Being on the front lines is exciting
• Continuity is important: Forrest, Martinsosi, Suba

“It has been said that democracy is the worst form of government except all the others that have been tried.”

Winston Churchill
WELCOME TO
New Mexico
Land of Enchantment
Observations

• Science advisor not policy maker
  – CIP respected my expertise and time
  – State ‘is not a technical agency’
• Orientation programs: AAAS, JSF, FSI
• The people
  – think differently, dedicated to public service
• The Interagency
• Stream-based workflow
  – No version control
• The IT situation
• High turnover---many iterated games