

Putting the Socio and Technical Together: Disciplines and Sectors (1/3)

General Concept and Why a Cybersecurity Problem:

- How do we ensure there are researchers who can tackle the other grand challenges produced?
- We do not know what the cybersecurity challenges will be in the future but we have already learned that we need cybersecurity researchers to be from or trained in different disciplines and working across sectors.
- We believe that cybersecurity will be enhanced by understanding how human and technologies interact. This enterprise lies at the interface of multiple disciplines and multiple sectors.
 - Potential Disciplines: Social and Behavioral Sciences (SBS), Computer Science, Computer Engineering, Electrical Engineering
 - Potential Skill Sets: Data Scientists, Mathematics/Statistics, Research Methods, Management
 - Sectors: Academia, Industry, and Government

Examples:

- Areas where success has been seen: Insider Threat, Attribution, Mental Models of IT

What: Need more rigorous scientific approaches and methods to cybersecurity

Putting the Socio and Technical Together: Disciplines and Sectors (2/3)

How:

1. Transforming or Broadening the Cybersecurity Discipline (Technology, Human Centric, Organization Based)
2. Multi-disciplinary teams that are collaborative and fun (not just cooperative)
 - Develop all disciplines to focus and care about cybersecurity-overlapping interests to start
OR
 - Bringing disciplines together without overlapping interests to start
3. Interdisciplinary researchers in different disciplines (developing, incentivizing)
 - Build a mini-culture: common language, common goals (a marriage not a hook up)
 - Better understand the big questions that people are after in different disciplines?
4. Multi-disciplinary and multi-sector teams that are collaborative



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(3/3)

Challenges:

- Unconscious biases
 - Technologists think they are users/human, and can understand the human element without SBS expertise, and a sense of superiority in their training/skills; Biased belief that SBS cannot reproduce our results
- Which sector is further ahead, more important, etc.
- Where to publish?
- Whether to publish? Sharing findings from multi-sector teams
- Who funds the work? This is less a problem in this area but still need to consider.
- Equal value for all disciplines
- How do you find the right person in cross-discipline or sector to collaborate with? (Partner Quality)
 - Academic speed-dating, Institutional match-making, Sector match-making
- What makes certain questions research questions for each field?
- What type of training is needed?
- Meeting everyone's sector incentives

Who to help with discussion: Collaborative Team Development...

Specific People: (Successful collaborators from both SBS and Cybersecurity/CS)

- Dr. Jesse Walker (retired from Intel), Paul Dourish (Academia), Ken Anderson (Intel), Nicole Wong (OSTP, Google, Lawyer), EAGER recipients, Michael Vandevanter (Oracle Research), Lucas Layman (Fraunhofer Research Center for Study for Computer Software), Karrie Chang (Information Sciences UNT),