SAC-PA2 Workshop

Security **A**ssured **C**yberinfrastructure in **P**ennsylvania
June 14-15, 2018
Pittsburgh

This workshop is part of the following project funded by the National Science Foundation (NSF)
NSF Award #1642117: CICI: Regional: SAC-PA: Towards Security Assured Cyberinfrastructure in Pennsylvania

University of Pittsburgh
School of Computing and Information

LERSAIS

PITTCYBER
University of Pittsburgh
Institute for Cyber Law, Policy, and Security

Pitt
Information Technology

KINBER
A Commonwealth of Collaboration

Basic Information

- Breakfast, coffee breaks
- Meals
  - Lunch provided both days
  - Light Reception (5-6PM)
    - Supported by PittCyber, SCI/LERSAIS
- WiFi password:VNMGD3
- Need help?
  - Kelly Shaffer, Program Director at SCI
  - Runhua Xu, LERSAIS PhD student
  - Project team

Live Google Doc for all to use during the workshop for capturing thoughts, ideas, and questions. We will use it to build the attendee survey that will come out shortly after the workshop.

https://goo.gl/dpSZcy

NSF CICI (Cybersecurity Innovation for Cyberinfrastructure)

- Objective:

  "is to develop, deploy and integrate security solutions that benefit the scientific community by ensuring the integrity, resilience and reliability of the end-to-end scientific workflow"
    - Collaboration, Shared cyberinfrastructure for Science & Engineering
- Two areas in 2016
    - Resilient Security Architecture (for research cyberinfrastructure)
    - Regional Cybersecurity Collaboration
- Current focus:
    - Secure Scientific Cyberinfrastructure
    - Collaborative Security Response Center
    - Research Data Protection

Motivation: SAC-PA project

- Data-driven scientific research & discovery
  - An unprecedented opportunity!!

- Cybersecurity is a growing concern/challenge

- Regional collaboration and partnership among cyberinfrastructure providers and users critical !!
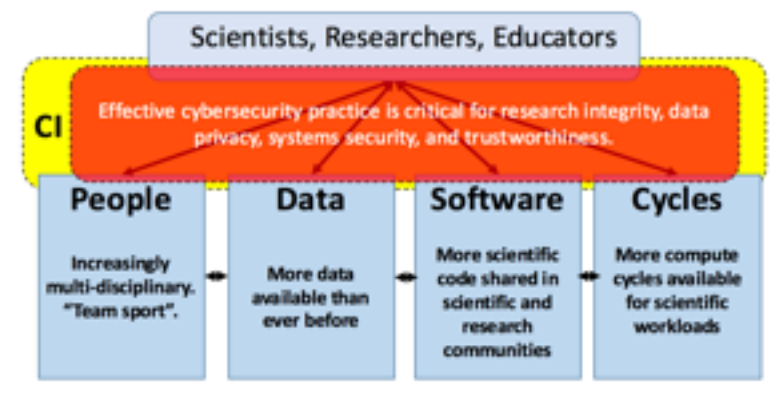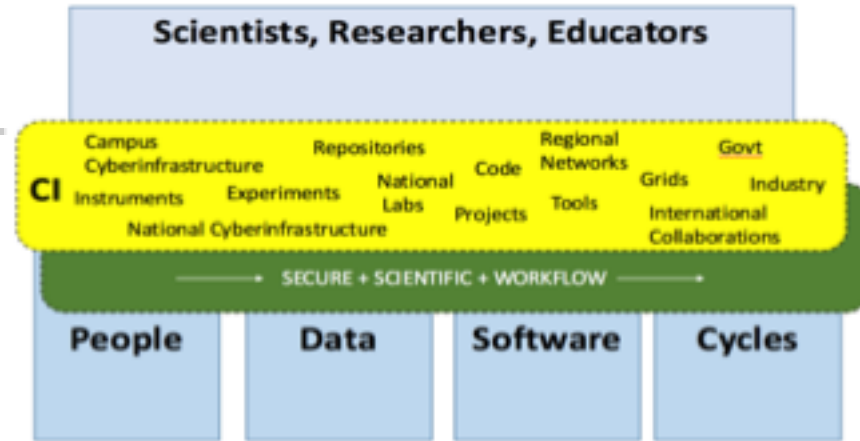
SAC-PA Project Objectives

- Establish a regional collaboration and partnership framework, SAC-PA, within the state of Pennsylvania

  - Provide critical support to smaller academic institutions (schools and colleges, etc.), including resource constrained regional institutions that serve under-represented groups

  - Enable concerted activities to promote the use of effective cybersecurity techniques and practice of security-assured cyberinfrastructure.

  SAC-PA will provide a regional cybersecurity collaboration and partnership model that can be adopted by other regions, or be extended for national level collaborations.

Key Tasks:

- **Task 1**: Develop and Deliver Regional Workshops for Cybersecurity

  - 3 workshops in Pittsburgh area

  Goals:

    - **Understanding** of CI resources and Cybersecurity capabilities, & challenges

    - **Understand/Explore** existing/emerging cybersecurity challenges and solutions

    - **Develop** regional collaboration and partnership
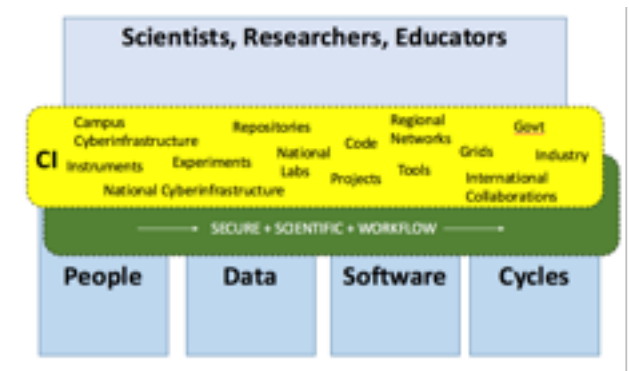
SAC-PA Workshops

SAC-PA 1 Workshop (June, 2017)
• Identify regional resources related to cyberinfrastructure & cybersecurity that relates to the scientific research community
• Presentations and discussion on cybersecurity challenges to the scientific research community
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SAC-PA 2 Workshop (June, 2018)
• **Cybersecurity Research to Practice**
• **Cybersecurity Tools and Techniques**
• **Security Standards, Best Practices, etc.**
SAC-PA 3 Workshop (TBD)
• Delivery of training/tutorial modules developed
• Research, tools and techniques

Task 2: Training and Awareness Materials

- **Task 2**: Collaboratively Develop Training/Awareness Materials

  Develop and share cybersecurity training and awareness materials based on the needs and capabilities identified in the workshops

  - Cybersecurity/privacy tools;
  - Cybersecurity administration;
  - Cybersecurity standards (NIST, ISO, FISMA);
  - Cybersecurity risk management;
  - Cybersecurity regulations/compliances issues;
  - Cyberforensics;
  - Cyber-operational issues;
  - Cybersecurity incident handling, disaster management, and business continuity planning;
  - Host, Network and Cyberinfrastucture – prevention, detection and response; Threat Management, etc.

Please consider contributing to the development/sharing of training/awareness materials

Task 3: SAC-PA Collaboration/partnership

- **Task 3**: Establish Regional Partnerships and a Shared Repository of Cybersecurity Resources/Capabilities.

  - ***Integrated and Shared Repository***
    - Security Education, Training and Awareness (SETA) materials
    - Practical Tools
    - Online resources (standards, guidelines, ..)
    - Expertise, Capabilities

Knowledge Sharing
Collaboration
Integrative, Concerted Efforts
Innovation & discovery
Standard/effective practices

...

Initial Partners for Collaboration

- Keystone Initiative for Network Based Education and Research (KINBER)
- University of Pittsburgh's CSSD's Information Security Team
- Open Science Grid
- Center of Trustworthy Scientific Computing (CTSC)
- Internet2

- Pittsburgh Supercomputing Center
- REN-ISAC
- National Cyber-Forensics & Training Alliance (NCFTA)
- Federal Bureau of Investigation (FBI, Pittsburgh)
- University of Pittsburgh Medical Center (UPMC) – IT Security
- SEI-CERT

Project Team

- James Joshi (PI), Professor, SCI, University of Pittsburgh
- Brian Stengel (Co-PI), University of Pittsburgh
- Balaji Palanisamy (Co-PI), Assistant Professor, SCI
- Michael B. Spring (Co-PI), Associate Professor, SCI
- Prashant Krishnamurthy (Co-PI), Professor, SCI
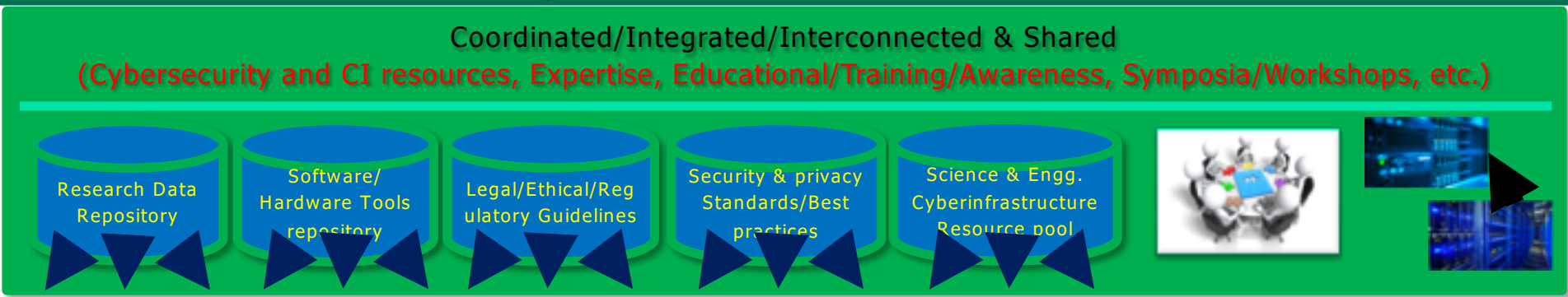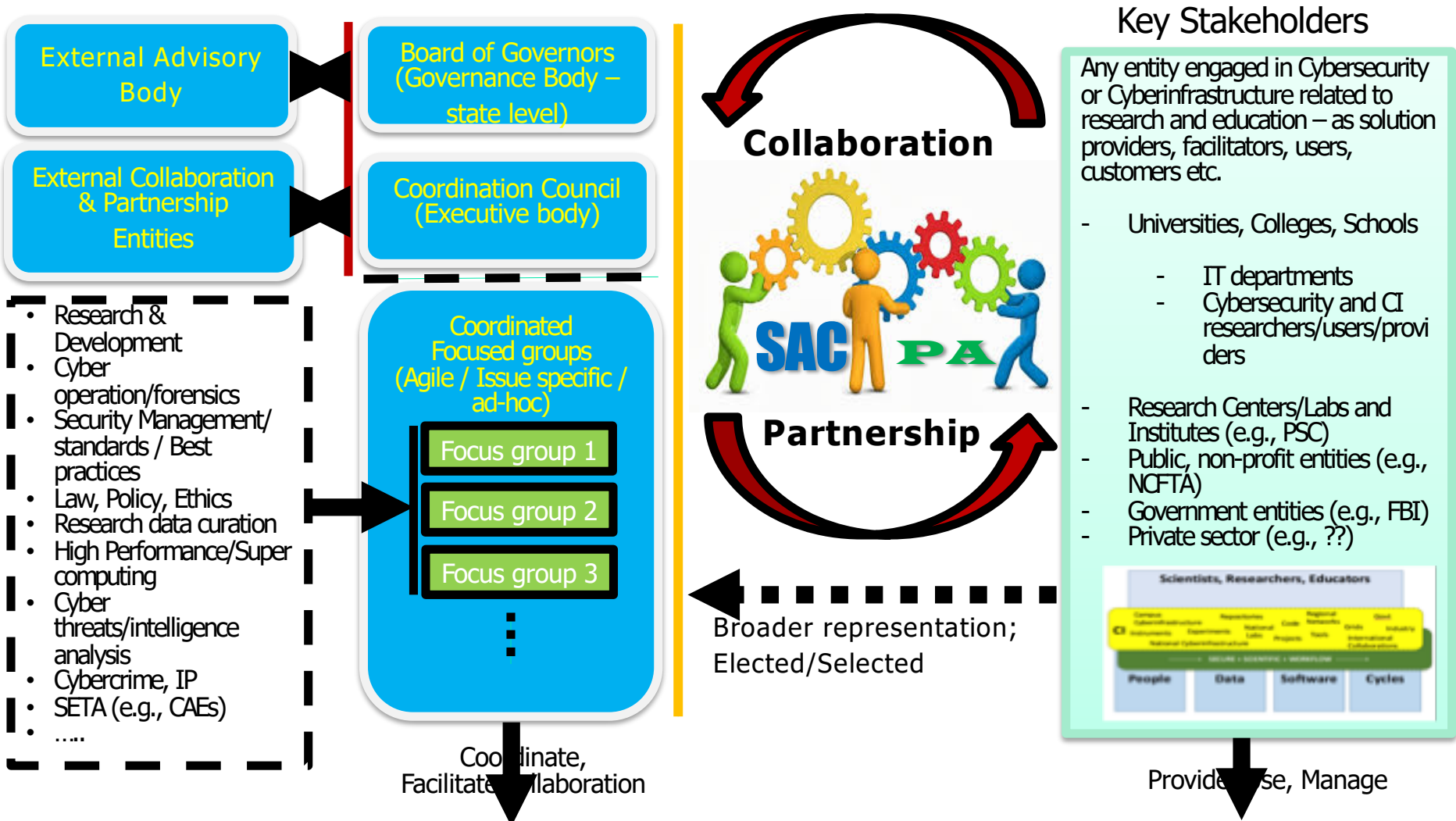- David Tipper (Co-PI), Professor, SCI

Project Page: http://www.sis.pitt.edu/lersais/research/sac-pa/
LERSAIS Page: http://www.sis.pitt.edu/lersais/

Initial Idea

Key Stakeholders

External Advisory Body

Board of Governors (Governance Body – state level)

External Collaboration & Partnership Entities

Coordination Council (Executive body)

- Research & Development
- Cyber operation/forensics
- Security Management/ standards / Best practices
- Law, Policy, Ethics
- Research data curation
- High Performance/Super computing
- Cyber threats/intelligence analysis
- Cybercrime, IP
- SETA (e.g., CAEs)
- …..

Coordinated Focused groups (Agile / Issue specific / ad-hoc)

Focus group 1

Focus group 2

Focus group 3

Collaboration

SAC PA

Partnership

Any entity engaged in Cybersecurity or Cyberinfrastructure related to research and education – as solution providers, facilitators, users, customers etc.

- Universities, Colleges, Schools
  - IT departments
  - Cybersecurity and CI researchers/users/providers
- Research Centers/Labs and Institutes (e.g., PSC)
- Public, non-profit entities (e.g., NCFTA)
- Government entities (e.g., FBI)
- Private sector (e.g., ??)

Scientists, Researchers, Educators

CI

People | Data | Software | Cycles

Broader representation; Elected/Selected

Coordinate, Facilitate collaboration

Provide, Use, Manage

Coordinated/Integrated/Interconnected & Shared
(Cybersecurity and CI resources, Expertise, Educational/Training/Awareness, Symposia/Workshops, etc.)

Research Data Repository

Software/ Hardware Tools repository

Legal/Ethical/Reg ulatory Guidelines

Security & privacy Standards/Best practices

Science & Engg. Cyberinfrastructure Resource pool

SAC-PA Collaboration and Partnership framework – to work out

- Membership – broad coverage
- Mission, vision & Strategic plans
- Information and resource sharing architecture, platform,
- CI related SETA Program and/or networking events
- Sustainability model
- ….

We welcome your active participation and collaboration towards establishing it!!