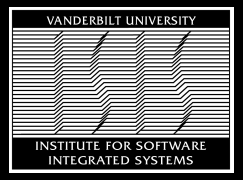
Institute for Software Integrated Systems

Vanderbilt University

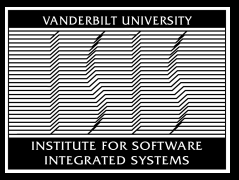


The CPS-VO Collaboration Platform

http://cps-vo.org

2012 National CPS PI Meeting
National Harbor, MD
Oct 4th, 2012

Outline



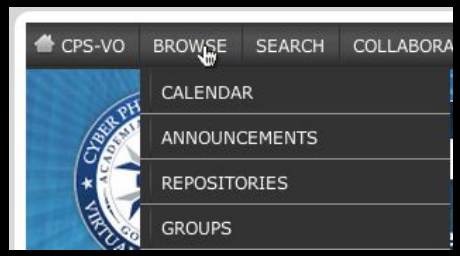
- Mission
- Collaboration Services
- Growth Trends
- Getting Involved

Objectives

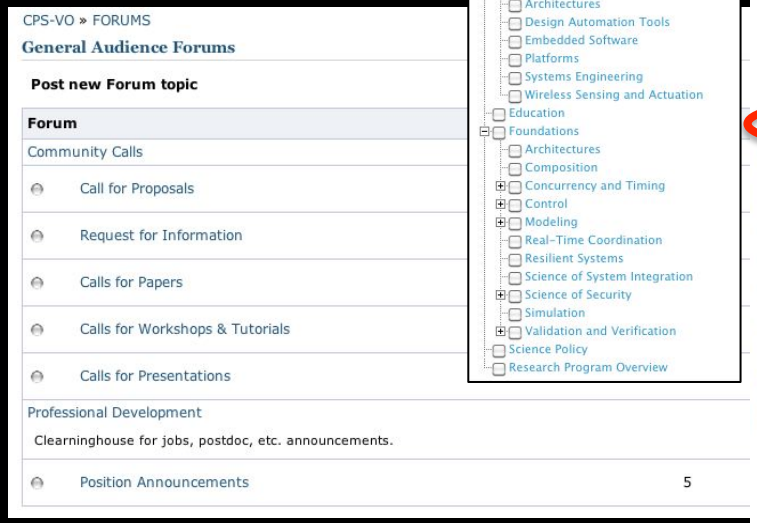
- **Community Building**
  - promoting collaboration and close interaction between academia, industry & government
  - facilitating interactions across technical disciplines & across applications areas
  - cross-fertilization of research in CPS core sciences and applied research in domain- and mission-oriented problems in a multi-agency setting
- **Collaboration Support via the website**
  - information flow and awareness of CPS activities
  - collaboration and professional networking
  - knowledge repository to facilitate the open exchange of challenge problems, research results, tools, and educational materials

* Supporting CPS/NITRD community activities

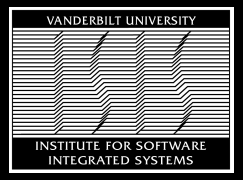
The VO Community Portal



- Community Announcements
- Shared File Repository
- Community Calendar
- Taxonomic Search
- Special Interest Groups



VO 'Group' Services



- Branding with Configurable Dashboard
- Configurable Security Policy

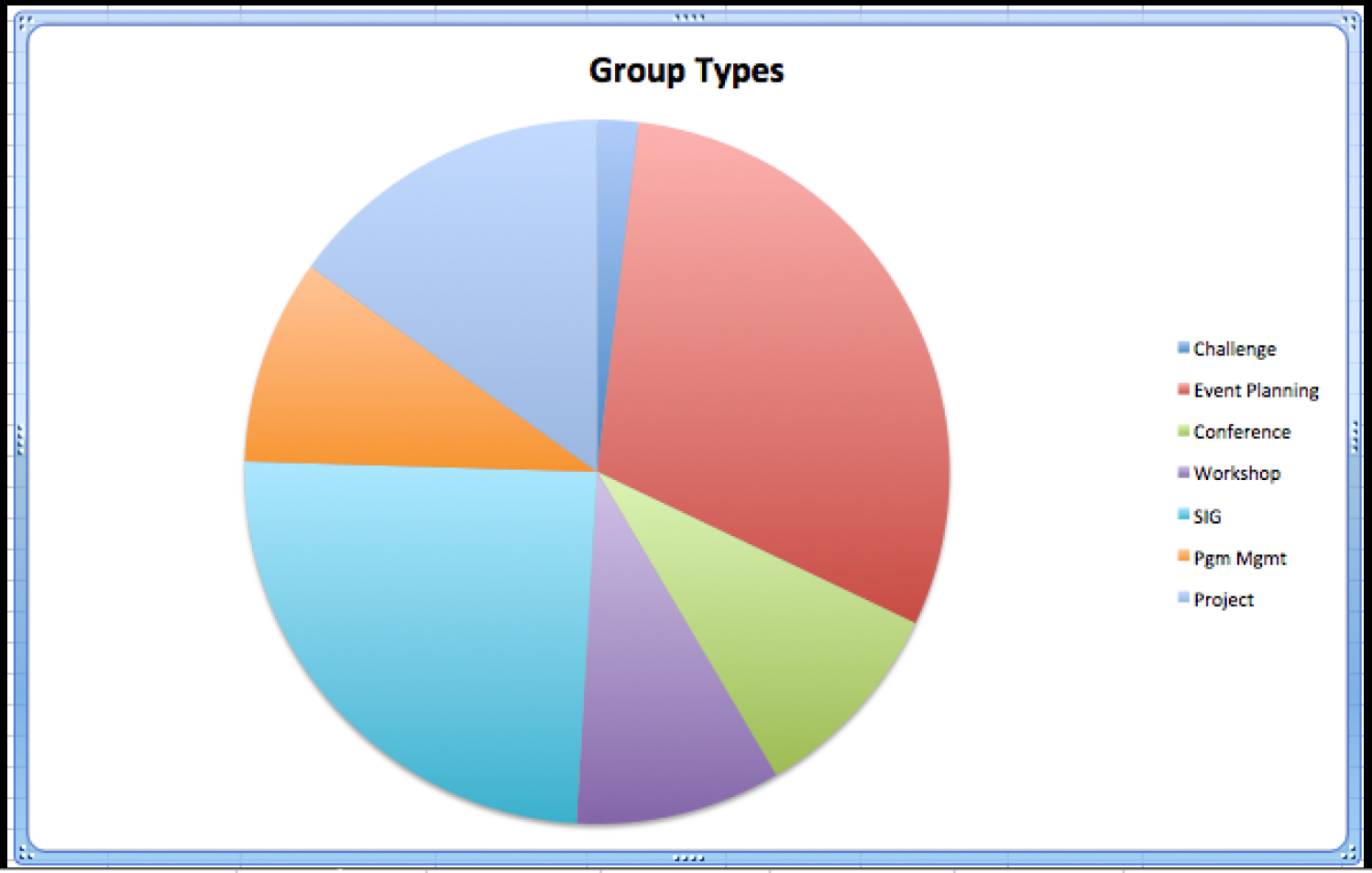
- Discussion Forums
- Wiki
- Email Announcements

- A Virtual Filesystem
- Revision Control (*incl.* diff-s)
- Domain-Specific Search Engine

- Calendar Mgmt (*incl.* Desktop Sharing Meetings)

- Content Subscriptions/ Notifications Service

Common Types of Groups



Challenge	Event Planning	Conference	Workshop	SIG	Pgm Mgmt	Project	Tech Transition	Education
		18.18%			23.64%			
1.82%	29.09%	9.09%	9.09%	23.64%	9.09%	14.55%	1.82%	1.82%

Example Event Planning

2012 The New Clockwork for Time-Critical Systems Planning Meeting Program Committee

CPS-VO » 2012 NATIONAL WORKSHOP ON THE NEW CLOCKWORK FOR TIME-CRITICAL SYSTEMS » 2012 THE NEW CLOCKWORK FOR TIME-CRITICAL SYSTEMS PLANNING MEETING PROGRAM COMMITTEE

2012 The New Clockwork for Time-Critical Systems Planning Meeting Program Committee

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COLLABORATE

- Create Event
- Upload File
- Create Forum Topic
- Create Group
- Create News Item
- Create Online Meeting
- Create Video
- Create Webform
- Create Wiki Page
- Create Web Page

SUBGROUPS

- 2012 National Workshop on the New Clockwork for Time-Critical Systems
  - 2012 The New Clockwork for Time-Critical Systems Planning Meeting Program Committee
  - 2012 The New Clockwork for Time-Critical Systems Planning Meeting

Welcome

A cyber-physical system consists of two interacting subsystems, a cyber-system and a physical system. The behavior of the cyber system is controlled by the execution of programs on a distributed digital computer system, while the laws of physics control the behavior of the physical system. The different models of time—dense physical time in the physical system versus discrete execution time in the cyber system, and the impossibility of perfect synchronization of the physical clocks of the nodes of a distributed computer system, lead to interesting phenomena concerning the joint behavior of these two subsystems. The colloquium is intended to shed light on these phenomena by renowned scientists who have worked on this topic from different perspectives.

This is a non-public group.

Two Meetings:

1. The **Planning Meeting**: The New Clockwork for Time-Critical Systems Planning Meeting was held on Monday, June 11 and half of Tuesday, June 12 at Dayton just before S5 for ~25 people.
2. The **Workshop**: The National Workshop on the New Clockwork for Time-Critical Systems

Resources:

List of Invitees for the Baltimore New Clockwork for Time-Critical Systems Workshop

List of registrations for the Baltimore New CLockwork for Time-Critical Systems Workshop

- Overview from the time workshop MS Word file that was in italics
- The non-italic portion is on the Workshop page

Forum topics:

Recent Minutes

- April 18, 2012
- April 4, 2012
- February 29, 2012
- February 22, 2012
- February 8, 2012
- Candidates for Invitees
- General Discussion

Planning Telecons

A Permanent Conference Web Presence

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HCSS Conferences

Home | About | Call for Presentations | Registration | Presentation Submission | Poster Abstract Submission | Program | Venue | Organizers | Participant Guidance | Track | Files

CPS-VO » GROUPS » HCSS CONFERENCES »

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Search

2012 High Confidence Software and Systems Conference

A world class community of researchers will gather in Annapolis, MD for a full week of High Confidence Software and Systems Conference activities that are structured to focus on new scientific and technological foundations that can enable entirely new generations of engineered designs that are becoming essential for effectively operating life-, safety-, security-, and mission-critical systems.

May 6-11, 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
6	7	8	9	10	11
SCC Meeting	SCC Meeting	HCSS Conference Theme: Technology Transfer	HCSS Conference Theme: Formal Synthesis	HCSS Conference Theme: Compositional Reasoning	Designed-In Security Workshop

Conference Archives: 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Home

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- › Create Webform
- › Create Wiki page
- › Create Group
- › 21 members

Manager: › KNEW

- › My membership
- › Invite members

Subgroups

- HCSS Conferences
  - 2011 HCSS Conference Program Committee
  - 2012 HCSS Conference Program Committee

[+] Feedback

Example SIG

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Science of Security Virtual Organization

CPS-VO » SCIENCE OF SECURITY VIRTUAL ORGANIZATION

Science of Security Virtual Organization EDIT GROUP | TRACK | TAXONOMY | BROADCAST | PANELS

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COLLABORATE

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SUBGROUPS

MEMBER INFO

In the Spotlight

First (2012) Science of

The National Security Agency is pleased to announce the first annual Science of Security (SoS) Community Meeting on **November 29-30, 2012** at the

SoS Background Material

Recommendations for Science of Security core background reading

- *DHS Roadmap for Cybersecurity Research*
- *Blueprint for a Science of Cybersecurity*, Fred B. Schneider
- The Next Wave: *Developing a Blueprint for a Science of Cybersecurity* Spring 2012
- *The Sciences of the Artificial* excerpt (2nd Ed. 1981, pp 129-159), Herbert A. Simon
- *"Measuring Security", IEEE Security & Privacy, May/June 2011*, Stolfo, Bellovin, Evans
- *Schneider on Security*, Fred B. Schneider
- *Science of Cyber-Security, JASON report*, 2010
- *The Science of Security*, Security & Privacy May/June 2011
- *Strong Inference*, John R. Platt

Current Research

NSA SoS Lablets

NSF TRUST Center

AFOSR SoS MURI

AFSOR Trust & Suspicion BRI

Related Research

AFOSR Foundations of Information Systems

ARL Computing Sciences

DHS Cyber Security R&D Center

HCSS Conferences

IARPA TRUST Program

NIST NICE Program

NSF Secure and Trustworthy Cyberspace (SaTC)

ONR Software and Computing Systems Program

Upcoming Events

11/27/12 - 11/29/12
First (2012) Secure and Trustworthy Computing PI Meeting

11/29/12 - 11/30/12
First (2012) Science of Security Community Meeting

+ Add event

SUBGROUPS

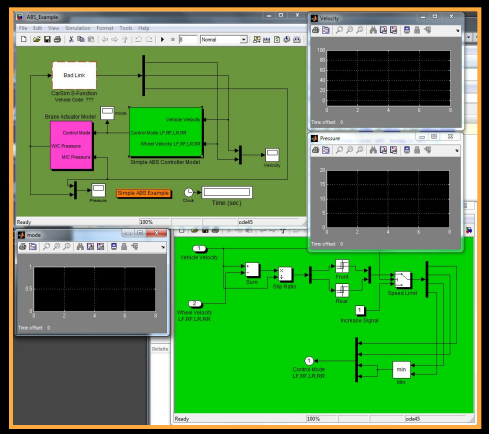
- Science of Security VO
  - <Private>
  - <Private>
  - <Private>
  - Moving Target Research Symposium
  - <Private>
  - 2012 SoS Community Meeting
    - <Private>
  - <Private>
  - <Private>
  - <Private>
  - <Private>

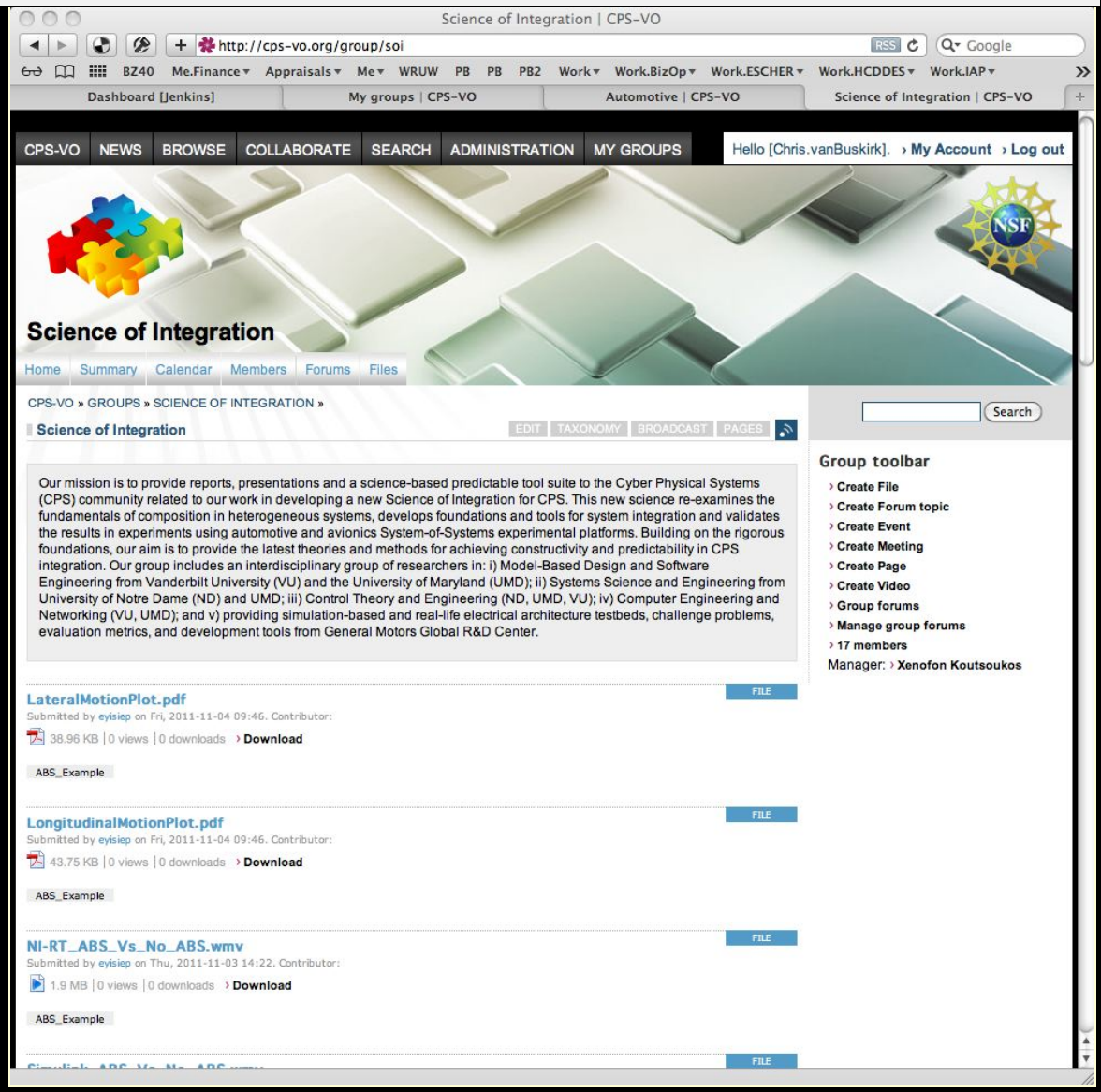
Example Research Project

Science of Integration

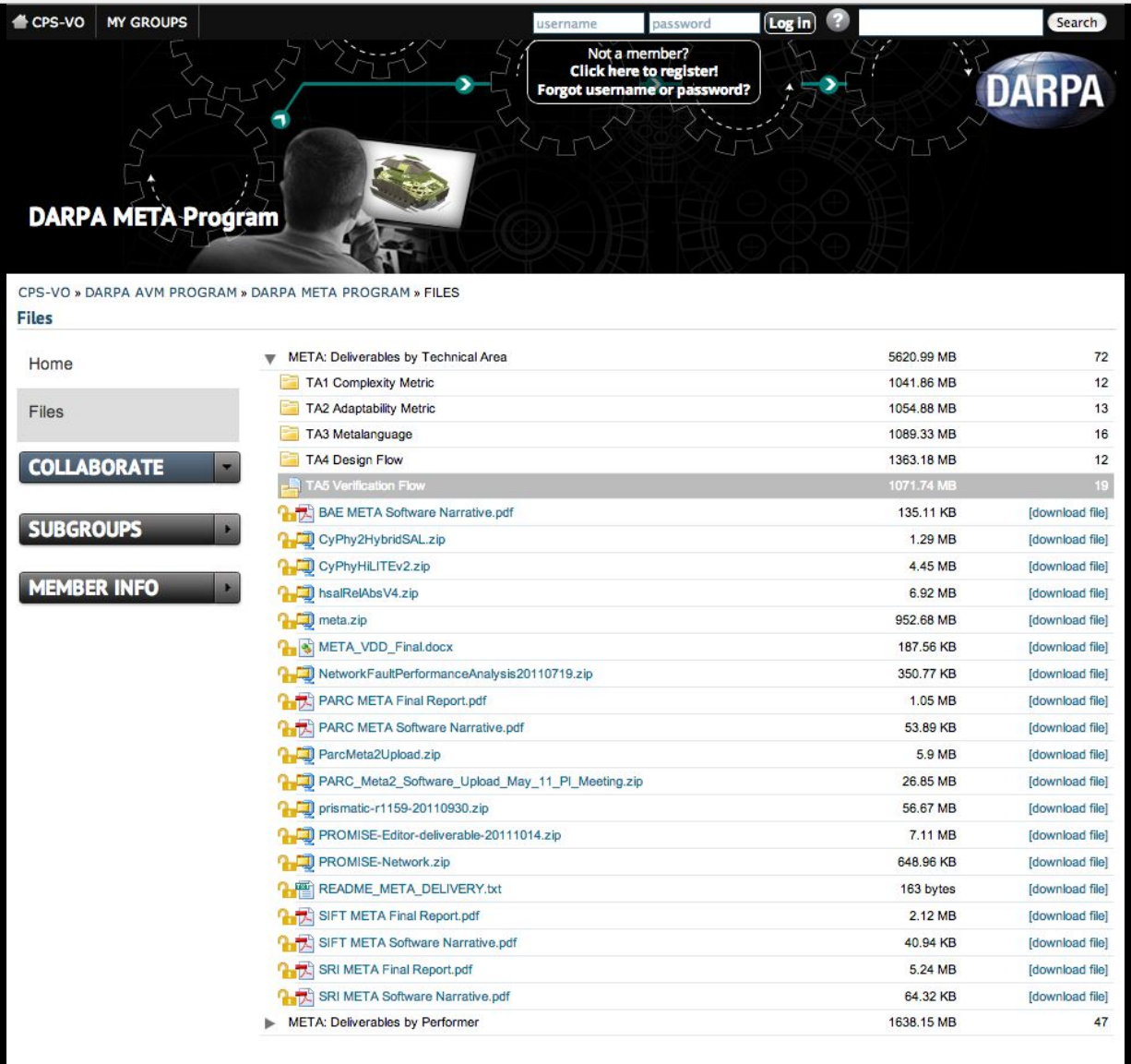
- Research Findings
- Meeting Coordination
- Automotive Experimental Platform (AEP)

- Publishing Models

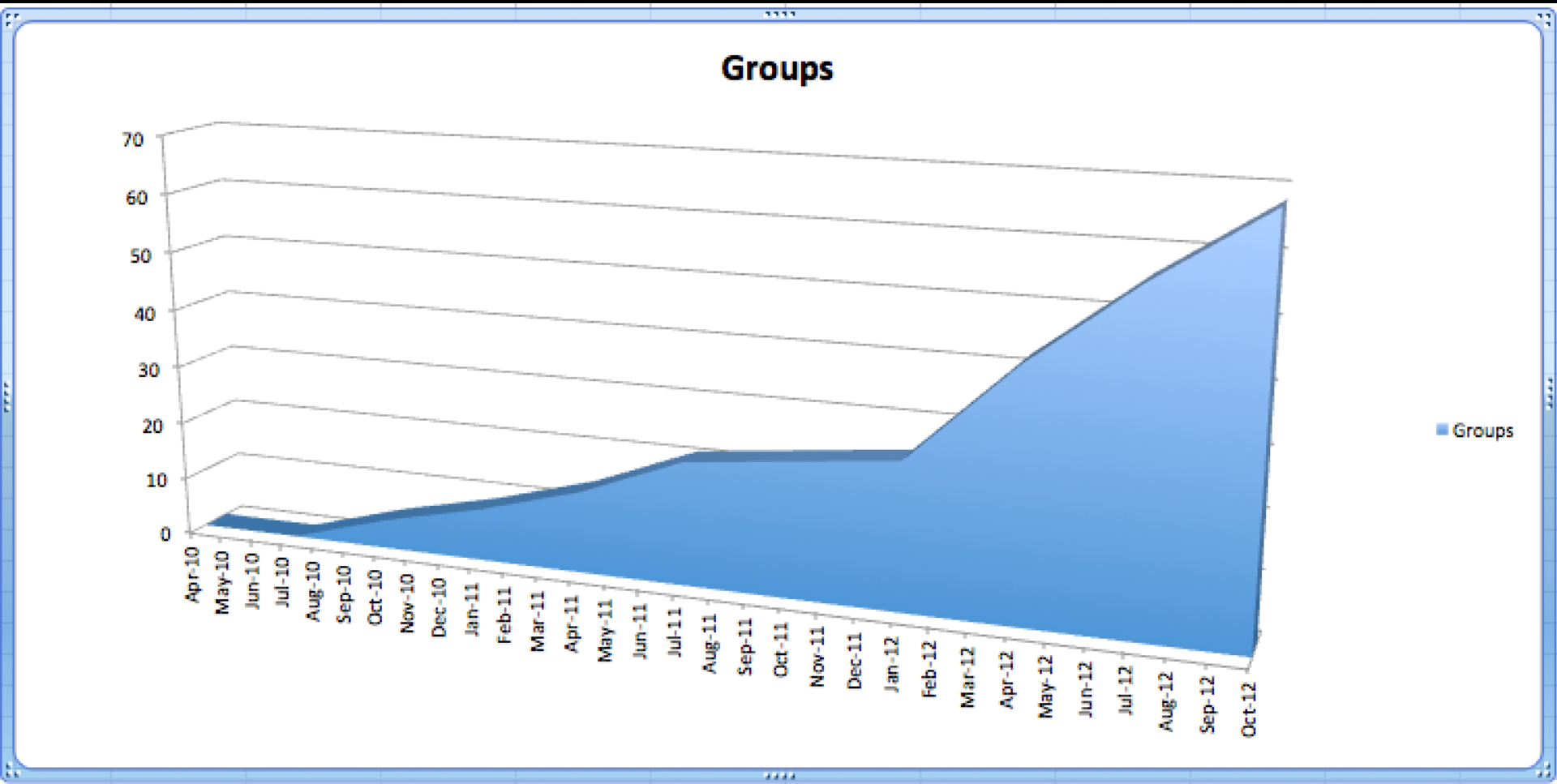




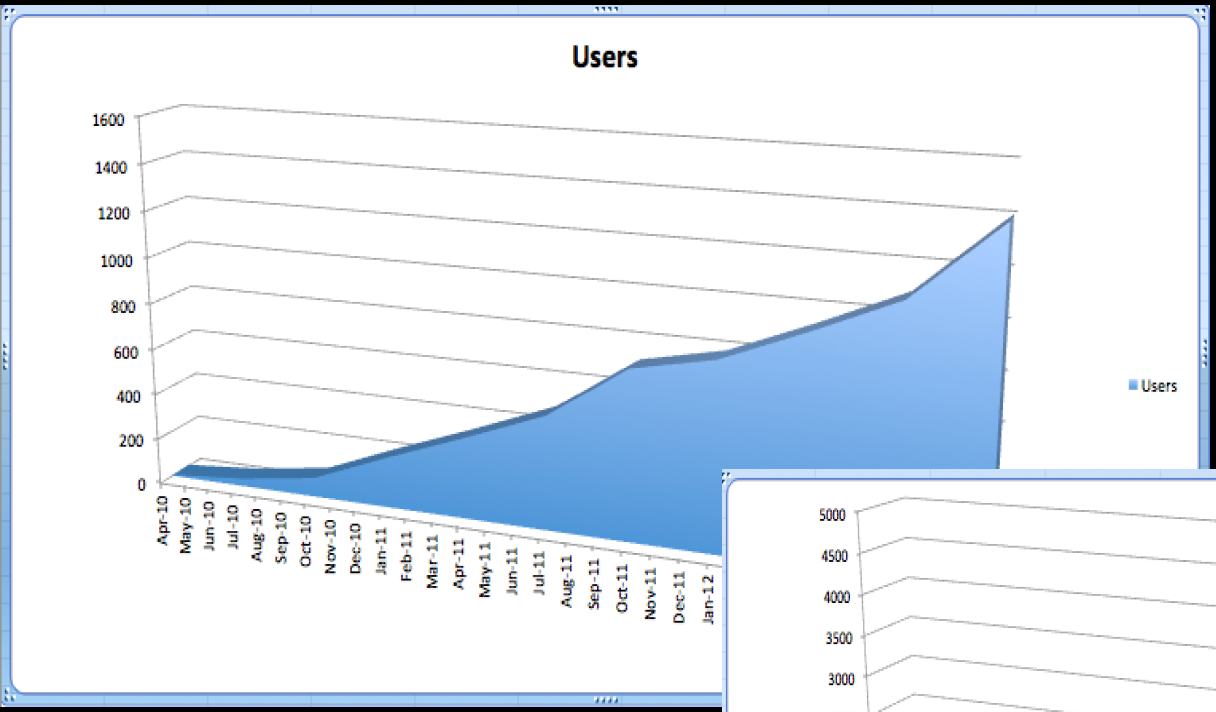
Example Tech Transition

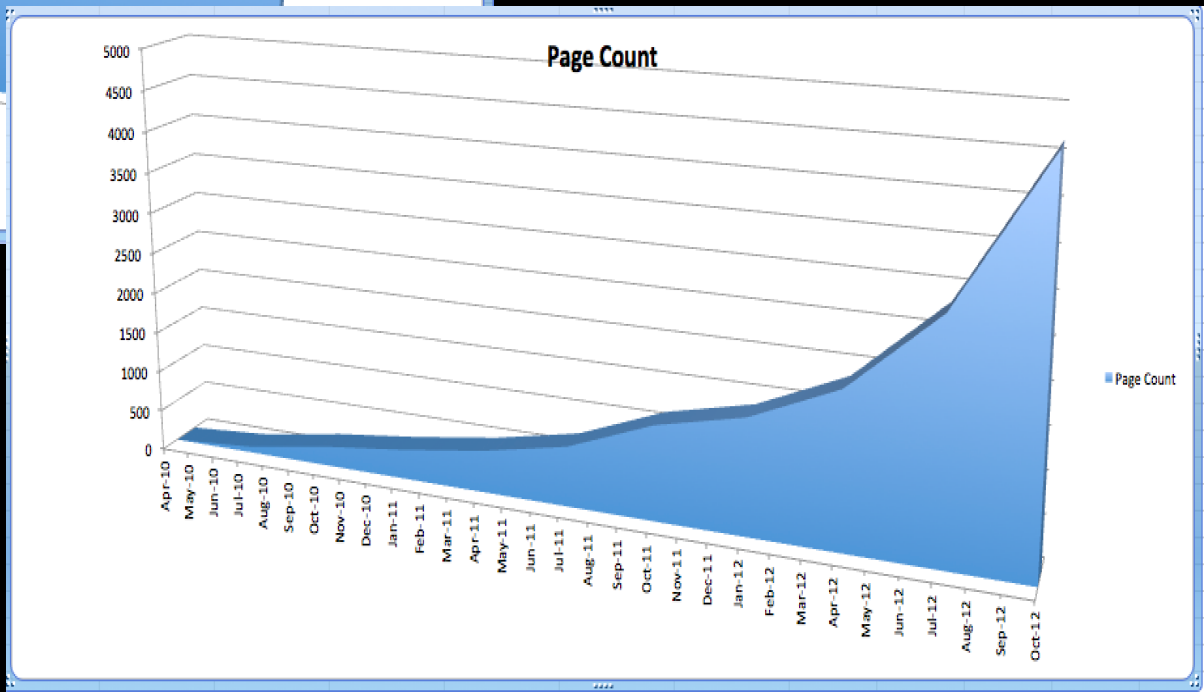


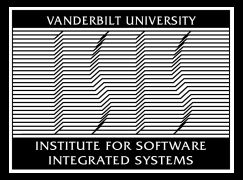
Groups are Taking Off



Historical Growth







Get Involved !

Vocabularies/Taxonomies Enable Search

CPS-VO

Taxonomic Search

Keyword search

With all of the words

Search

Guided search

Click a term to initiate a search.

Group

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more...

Keywords

2- layer authentication (1)
A/V (2)
abstract interpretation (2)
acceptability (1)
Access Control (1)
ACCESS Linnaeus Center (1)
Ada Core Technologies (1)
adaptive adversaries (1)
adaptive manufacturing (1)
Adaptive Vehicle Make (1)
Adelphi (1)
adversary attack behavior (1)
aerial (1)
Aerospace (3)
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AFRL (1)
Agilent Laboratories (1)
Air Force Institute of Technology (1)
Air Force Research Laboratory (1)
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United Kingdom (4)
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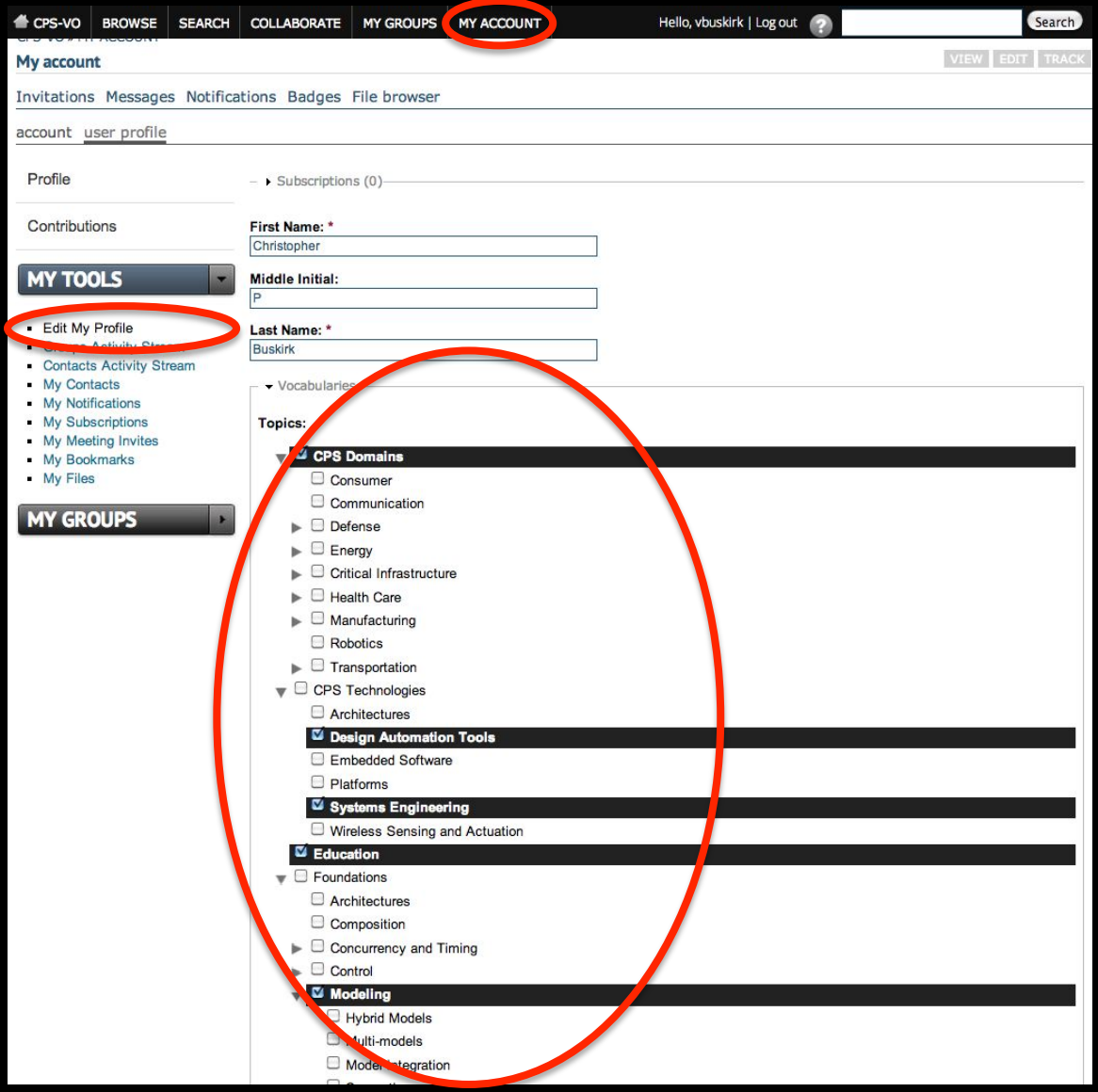
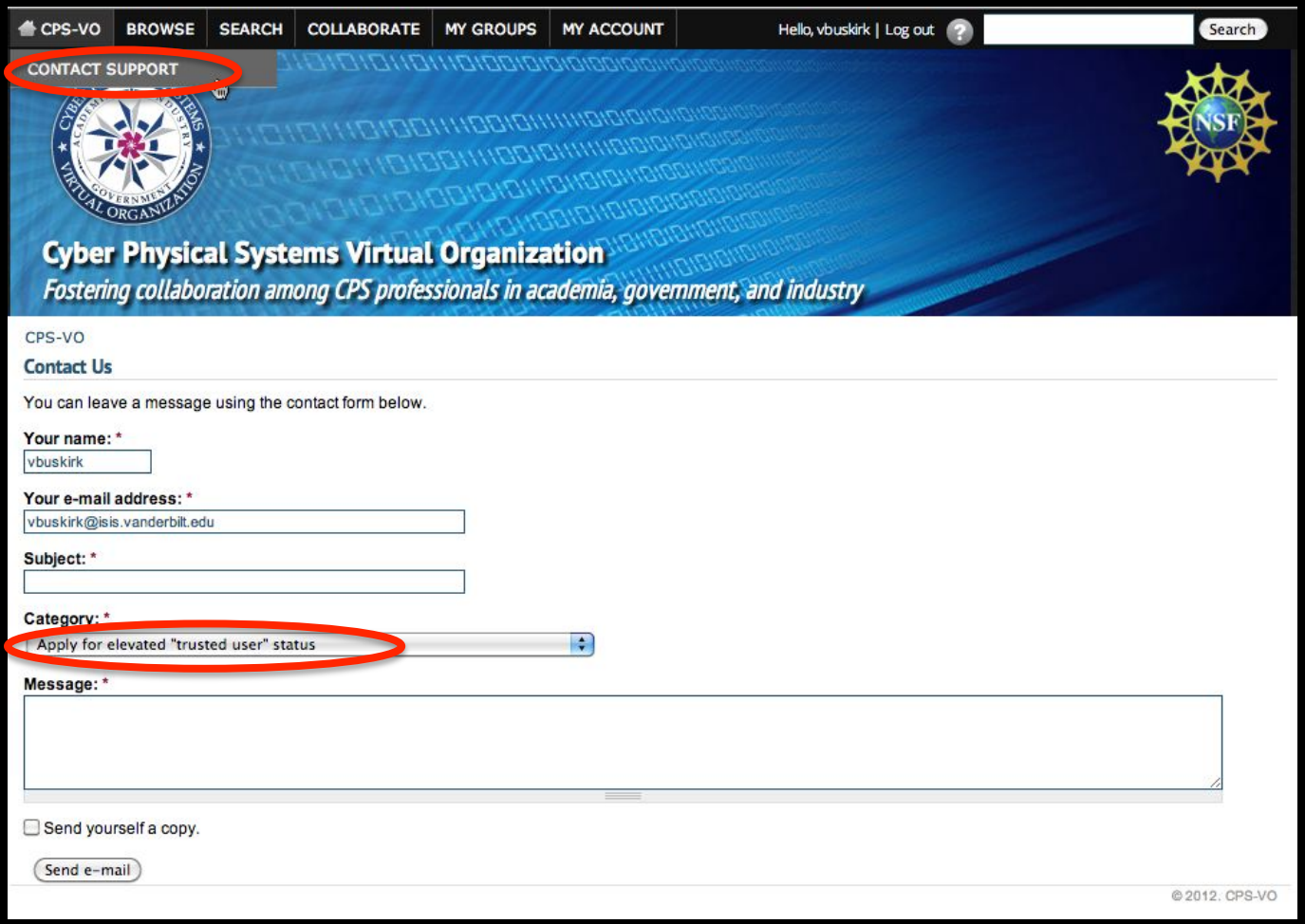
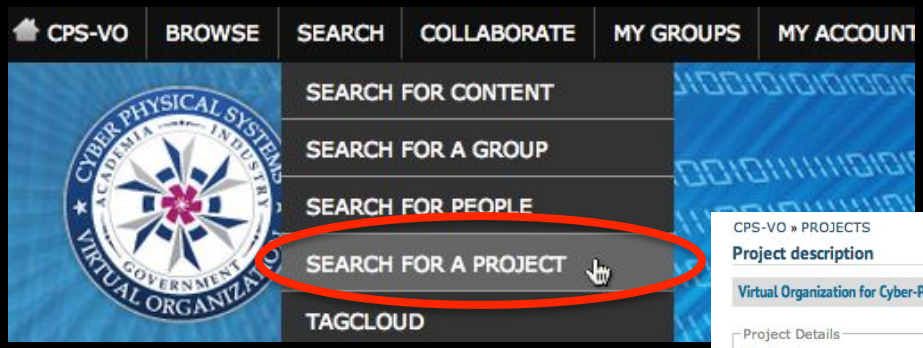
Advertise Yourself

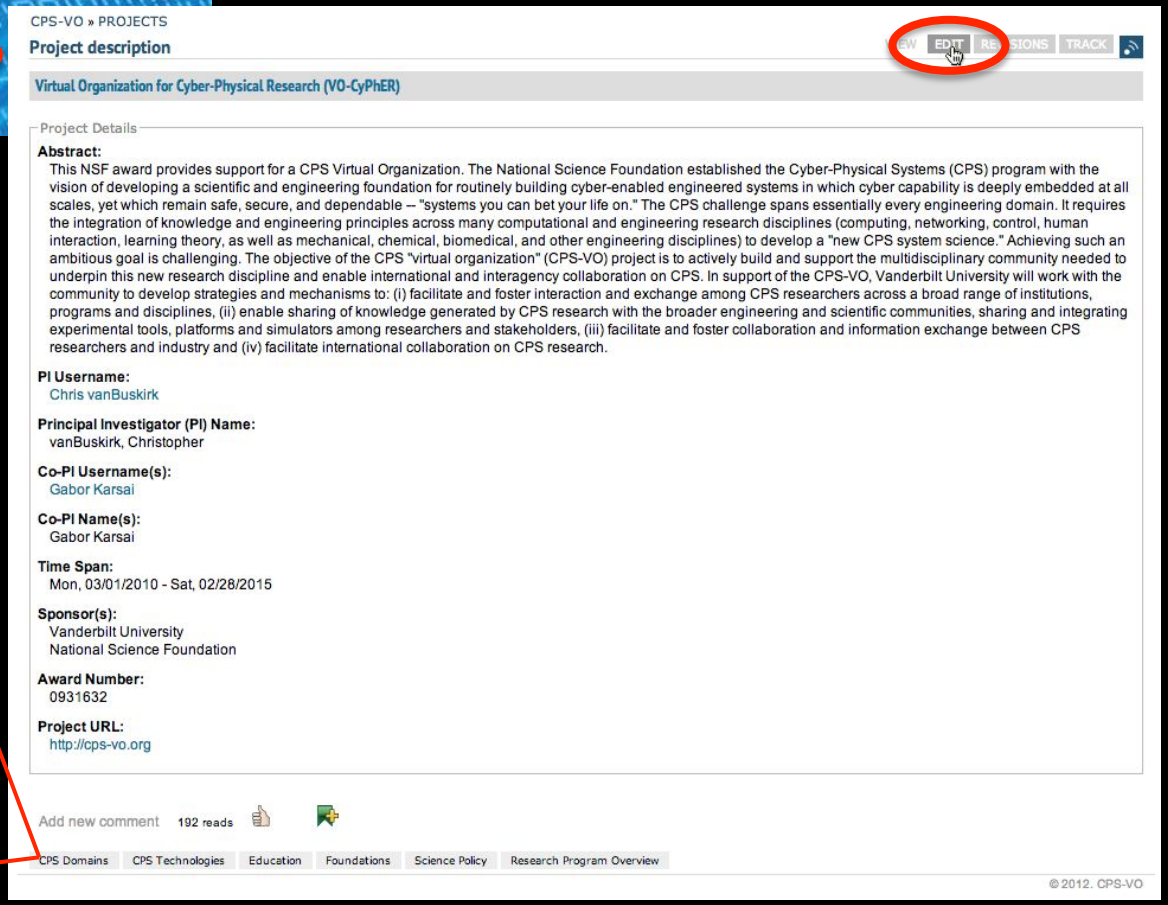


Apply For 'Trusted User' Privileges



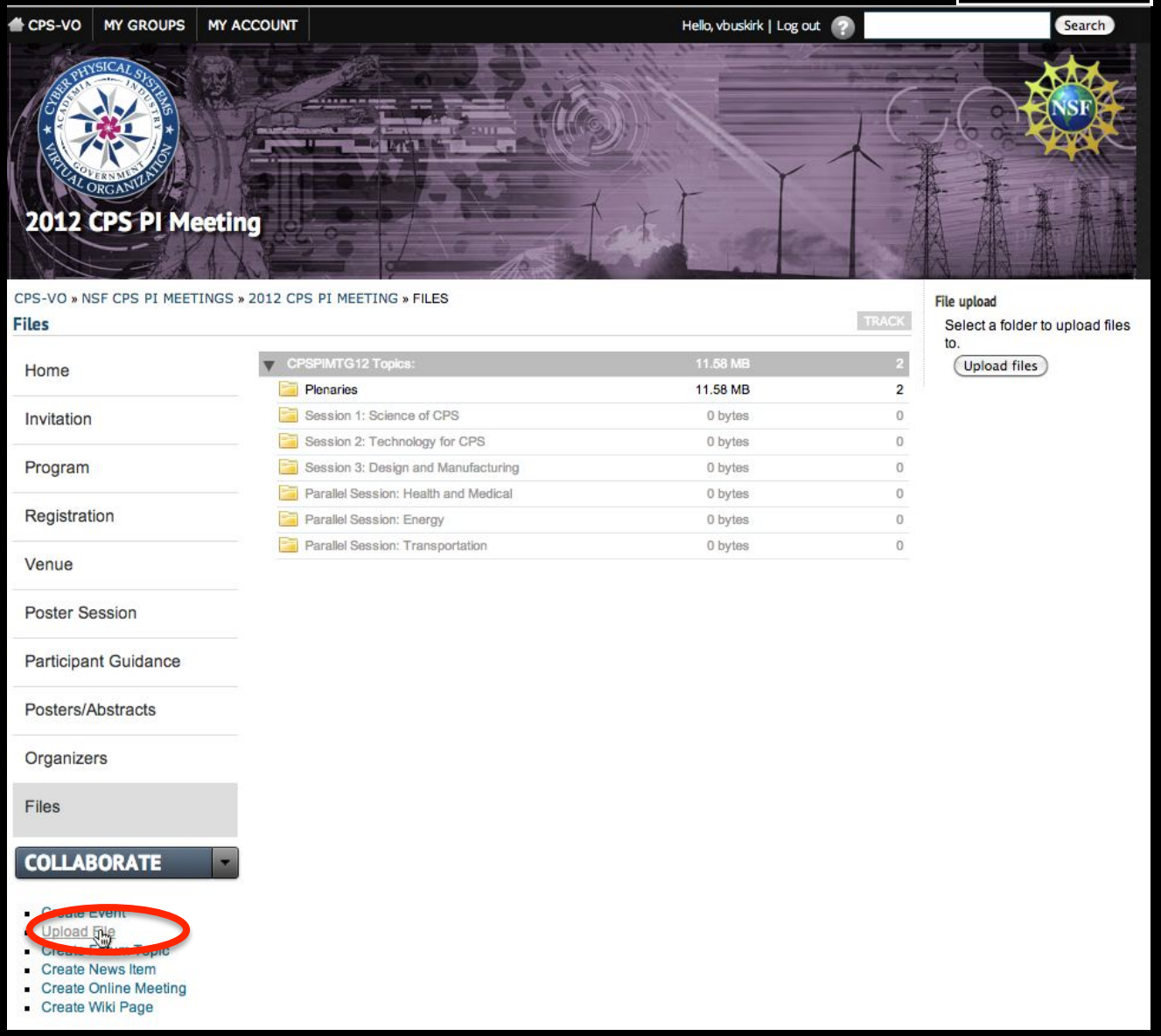
Advertise Your Project





Upload/Advertise Your Talk

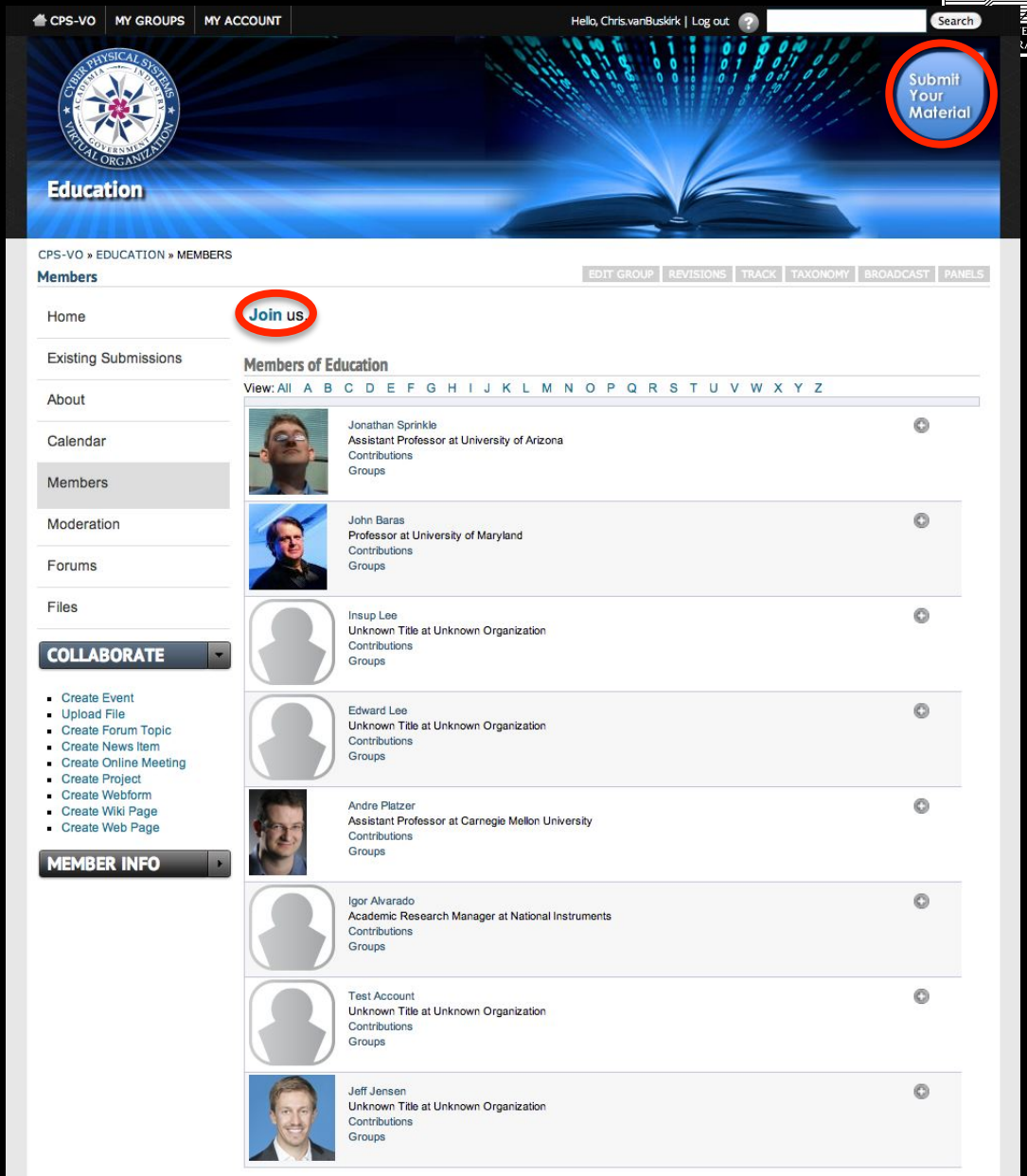
- CPS Domains
  - Consumer
  - Communication
  - Defense
  - Energy
  - Critical Infrastructure
  - Health Care
  - Manufacturing
  - Robotics
  - Transportation
- CPS Technologies
  - Architectures
  - Design Automation Tools
  - Embedded Software
  - Platforms
  - Systems Engineering
  - Wireless Sensing and Actuation
- Education
- Foundations
  - Architectures
  - Composition
  - Concurrency and Timing
  - Control
  - Modeling
  - Real-Time Coordination
  - Resilient Systems
  - Science of System Integration
  - Science of Security
  - Simulation
  - Validation and Verification
- Science Policy
- Research Program Overview



Join/Participate in a Group

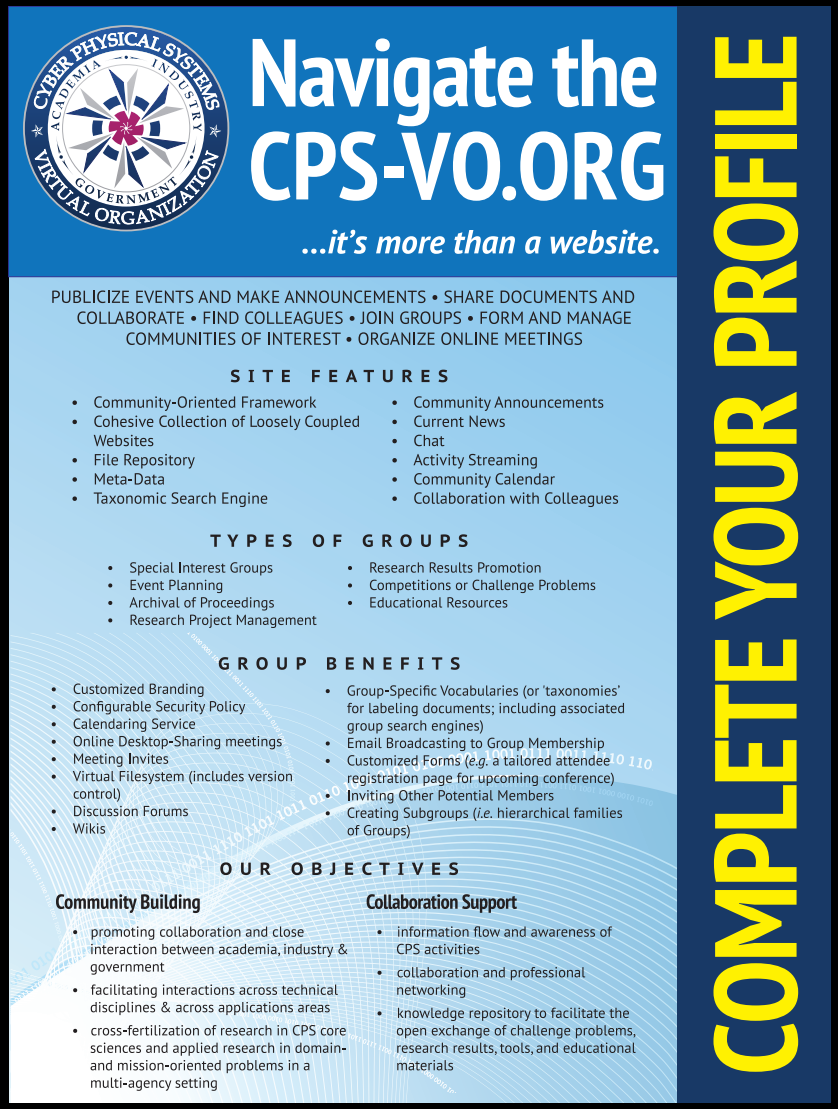
http://cps-vo.org/group/edu

GOAL: dissemination of CPS educational materials

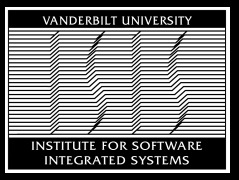


Establish a New Group

Drop by the Help Desk



VANDERBILT UNIVERSITY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INTEGRATED SYSTEMS