

2012 annual report on training, education, and outreach activities of the Indiana University Pervasive Technology Institute and affiliated organizations

January 1 - December 31, 2012

*Therese Miller
Robert J. Ping
Beth A. Plale
Craig A. Stewart*

Indiana University

Please cite as: Miller, T., R. Ping, B. Plale, and C.A. Stewart. 2012 annual report on training, education, and outreach activities of the Indiana University Pervasive Technology Institute and affiliated organizations. 2013. Available from: <http://hdl.handle.net/2022/17577>

This research was supported in part by:

- The Pervasive Technology Institute, Indiana Metabolomics and Cytomics Initiative, and the Indiana Genomics Initiative. All of these initiatives have been supported in part by Lilly Endowment, Inc.
- Grant number 1U24AA014818-01 from NIAAA/NIH. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIAAA/NIH.
- National Science Foundation under Grants CDA-9601632, EIA-0116050, ACI-03386181, OCI-0451237, OCI-0535258, and OCI-0504075, CNS-0723054, and CNS-0521433.
- Shared University Research grants from IBM, Inc. to Indiana University.
- Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the funding agencies represented above.
- The 2012 Ready, Set, Robots! Camp was sponsored by IBM, Inc., and their support is gratefully acknowledged.



**PERVASIVE TECHNOLOGY
INSTITUTE**

INDIANA UNIVERSITY

Table of Contents

2012 annual report on training, education, and outreach activities of the Indiana University Pervasive Technology Institute and affiliated organizations	i
1. Executive Summary	1
2. Introduction.....	1
3. Highlights of Education, Outreach, and Training activities by the Pervasive Technology Institute completed during reporting period.....	2
3.1. Service and outreach to the general lay public of Indiana and beyond	2
3.1.1. Security Matters and Center for Applied Cybersecurity Research (CACR)....	2
3.1.2. Cybersecurity for military families	3
3.1.3. Tours of the Cyberinfrastructure Building (CIB – Bloomington), Innovation Center (IC), IU Bloomington Data Center, and Informatics and Communications Technology Complex (ICTC - Indianapolis)	4
3.1.4. STEAM (Science, Technology, Engineering, the Arts and Math) Innovation Fair at Conner Prairie, Sept 2012.....	4
3.1.5. Smithsonian Institution Folklife Festival (http://www.festival.si.edu/)	5
3.2. K-12 outreach	7
3.2.1. Minority Engineering Advancement Program	7
3.2.2. RobotCamp – June 2012.....	8
4. Outreach to technical and government communities	9
4.1.1. IU Activities at SC12.....	9
4.1.2. HathiTrust Research Center UnCamp	11
4.1.3. International initiatives led by the Data to Insight Center.....	13
4.1.4. Ecological and Evolutionary Functional Genomics: Jamboree RNA Data Analysis and Interpretation Event, May 2012 Funding: European Science Foundation, National Science Foundation (via XSEDE and NCGAS grants)	14
4.1.5. XSEDE12 Conference	15
4.1.6. CACR Cybersecurity Summit	16
4.1.7. Virtual School in Computational Science and Engineering (VSCSE) Science Cloud Summer School 2012	16
4.1.8. International Science Grid This Week.....	16
5. PTI-related videos released during the reporting period.	17
6. Summary of student support by Pervasive Technology Institute.....	18
7. Full listing of EOT events carried out during reporting period	19

1. Executive Summary

Education, outreach, and training (EOT) is a broad initiative and important priority of the Indiana University Pervasive Technology Institute. PTI proactively seeks conferences, workshops, and events where promotion of the research carried out by Indiana University faculty, staff, and students may occur. In addition, units in PTI lead the charge to engage students at every level, K-12, undergraduate and graduate, in order to influence their decisions regarding future fields in which they may decide to study.

PTI actively works with the Indiana community and the broader science and technology communities around the nation and indeed the world to further educate laypersons about the benefits and importance of science, technology, and related fields.

The dedication of the PTI faculty and staff is shown in the record number of EOT events recorded in 2012 – over 250. During these events PTI reached over 29,000 audience members – another record. The K-12 strategic initiative is one we take very seriously. Over 9,500 of the audience members include K-12 youth and their parents. PTI personnel spend a large number of their own personal time on evenings and weekends to make this happen.

2. Introduction

The mission of the Indiana University Pervasive Technology Institute is “to improve the quality of life in the State of Indiana and the world through novel research and innovation and service delivery in the broad domain of information technology and informatics.” Educational activities that help educate a 21st century information workforce for Indiana and the US, and educational activities that enable the lay public of Indiana and the US to understand technology and use it securely are critical parts of PTI’s work to fulfill its mission.

This report summarizes many of the educational, outreach, and training activities of the Indiana University Pervasive Technology Institute for calendar year 2012. It includes highlights of activities in education and outreach at the Kindergarten – grade 12 level; education and outreach to the IU community; outreach and education to the state of Indiana; and outreach to the national scientific community.

One of the distinctive features of PTI education, outreach, and training events is the extent to which there are major events that involve all of PTI, or multiple centers. These very large events help raise IU’s profile nationally and internationally. By bringing together multiple PTI Centers as part of one event, they demonstrate the value of PTI as a collaborative organization within IU. During the current reporting period, the largest and most high profile EOT events involving large groups from PTI were SC12, the HathiTrust Research Center UnCamp, the Smithsonian FolkLife Festival, XSEDE12, Robot Camp, and the STEAM Innovation Fair at Conner Prairie.

PTI produced a comprehensive report on education, outreach, and training activities for calendar 2011 (<http://hdl.handle.net/2022/14132>). The PTI Education and Outreach strategy remains as described in that report. The UITS Research Technologies Collaboration and Engagement Support (CESG) group delivers and coordinates a baseline of education and outreach activities that are base funded by UITS. This baseline of activity serves as a foundation upon which PTI Research Centers can build. These activities can be referenced as a sign of PTI effectiveness in outreach to enhance competitiveness for grants. (PTI Research Centers also leverage the considerable education and outreach efforts of the IU School of Informatics and Computing). CES maintains a set of programs, activities, and relationships that PTI Research Centers can leverage and build upon when implementing externally funded education and outreach activities.

3. Highlights of Education, Outreach, and Training activities by the Pervasive Technology Institute completed during reporting period

3.1. Service and outreach to the general lay public of Indiana and beyond

The Indiana University Pervasive Technology Institute is located within the State of Indiana, and we have a deep commitment to service to the residents of the state. PTI offers a variety of education and outreach activities targeted at the lay public of Indiana particularly and the US generally. The most useful areas of education and outreach to residents in the State are likely those related to cybersecurity. PTI also offers a variety of outreach activities about advanced technology, and the value of advanced technology to the quality of life and economy in the State of Indiana.

3.1.1. Security Matters and Center for Applied Cybersecurity Research (CACR)

CACR outreach to academics, the government, industry, the press, and the public has continued at a rapid pace. During the period covered by this report, CACR staff have appeared in the *Chicago Tribune*, *Forbes*, *Los Angeles Times*, NPR, and the *Wall Street Journal*, among other publications. The “Security Matters” videos that provide practical advice on how individuals can improve their security at www.securitymatters.iu.edu have been expanded.



Figure 1. CACR’s popular Security Matters web site, providing information about cybersecurity to the lay public of Indiana and worldwide.

3.1.2. Cybersecurity for military families

In partnership with Congressman Todd Young (IN-9), the Center hosted a workshop on Information Security for Military Families. This one-day event in Bloomington brought together experts on identify theft, cybersecurity, and financial fraud to address practical steps for enhancing the information security of military personnel and their families. This is important both to protect the individuals involved and also in recognition that attacks on military personnel are often used as a way of obtaining illicit access to Department of Defense networks. Participants from the Army, Marine Corps, Navy, DoD, Department of Veterans Affairs, Department of the Treasury, U.S. Military Academy at West Point, Federal Trade Commission, Better Business Bureau, Consumer Data Industry Association, and USAA joined with Congressman Young, Indiana Attorney General Greg Zoeller, and CACR staff to review both the threats and current responses, and to propose new measures for helping military families secure their equipment and their data from cyberattacks. A final report from the workshop provides specific recommendations to the Pentagon and to Congress for practical, strategic steps to achieve that critical goal.



Figure 2: Congressman Todd Young welcomes participants at the workshop on information security for military families.

3.1.3. *Tours of the CyberInfrastructure Building (CIB – Bloomington), Innovation Center (IC), IU Bloomington Data Center, and Informatics and Communications Technology Complex (ICTC - Indianapolis)*

The new CyberInfrastructure Building on the IU Bloomington campus creates great interest on the part of the lay public of central Indiana. Literally thousands of people per year tour one of these buildings in which PTI has a presence and learn about advanced technology, its importance to modern society and quality of life, and the role of PTI in shaping technology of the present and future.

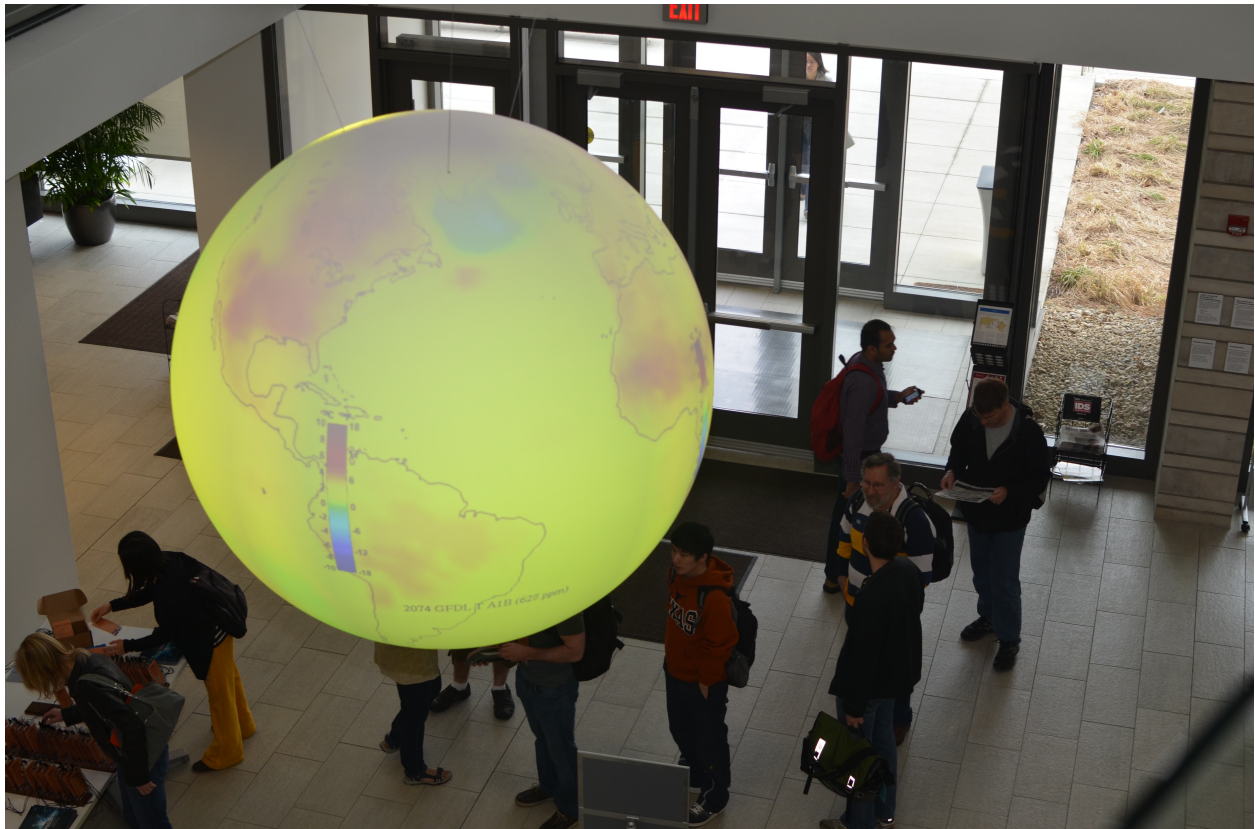


Figure 3. Members of the greater Bloomington, Indiana community visit the Indiana University CyberInfrastructure Building (CIB), home to several groups affiliated with PTI.

3.1.4. *STEAM (Science, Technology, Engineering, the Arts and Math) Innovation Fair at Conner Prairie, Sept 2012*

Indiana University was invited to participate in the STEAM Innovation Fair at Conner Prairie in Indianapolis, Indiana in Sept 2012 (<https://www.connerprairie.org/plan-your-visit/special-events/steam-innovation-week.aspx>). This was the second year for this two-day event showcasing university and business innovations across the state. The mission of this event is to focus not only on the historic innovators of the past, but also on current innovators and how they positively impact us as individuals and our communities as a whole.



Figure 4. PTI / Research Technologies staff and attendees at STEAM. (Photo courtesy of Conner Prairie.)

The Indiana University booth had four main components for engaging the public: mineral finding robots; password cracking on a home grown computer cluster; bending light using laser light refraction; and the 3D science videos discussed earlier. These hands-on demonstrations allowed the lay audience to engage with technology to see how it benefits society, from bending light as an example of how data travels over fiber optic cable, to programming robots to find minerals on Mars. These examples show the importance of how technology has allowed innovation to happen at an accelerated pace. A total of approximately 250 people visited the IU display.

3.1.5. Smithsonian Institution Folklife Festival (<http://www.festival.si.edu/>)

The Smithsonian Folklife Festival is an international exposition of living cultural heritage annually produced outdoors on the National Mall of the United States in Washington, D.C., by the Smithsonian Institution's Center for Folklife and Cultural Heritage. It is a major attraction in D.C. during the summer; Festival staff estimate the total number of visitors in 2012 to be 1.5 million people who come from all over world during the two week span of the event. This year's theme focused on the accomplishments and societal benefits of the US land grant universities, funded by the [Morrill Acts of 1862 and 1890](#), on the 150th anniversary of the first of these acts. This festival is focused on folk life and folk art. Indiana University presented a display about traditional folk crafts and art delivered through cutting edge digital presentations. Visitors to the tent were able to interact with artists from Indiana, both digital and traditional, from Indiana as well as explore art and artists from around the world through interactive digital displays. IU's tent featured a variety of methods of interacting with arts, data, media, and crafted objects in a forward looking presentation that utilized the latest technologies to put guests, literally, in touch with cultural media. This display featured use of the IQ-Table described earlier. This major display by IU was organized by the Research Technologies Advanced Visualization Lab, and featured content from the IU Department of Folklore, School of Fine Arts, and IU Libraries. IU staff estimate 5,796 people visited the IU tent over the two-week period.



Figure 5. Guests exploring ethnomusicological data on the GblalNOC WorldView display. Photography by Ed Dambik, AVL.



Figure 6 Guests viewing interactive digital art (Emotable Portraits) by professor Margaret Dolinsky. Photography by Ed Dambik, AVL

Participation in the Smithsonian Folklife Festival is determined on the basis of applications submitted by universities and colleges that wish to participate. IU was one of only 23 colleges and universities invited to present at the 2012 Folklife Festival. In IU's application, we noted that IU was not technically a land-grant university and had not received funding via the Morrill Acts, but that we embody and implement the spirit of dedication to societal good on which this act was based – carrying this service out today in the digital age.

3.2. K-12 outreach

The United States currently has more jobs available than well-trained people to fill those jobs in very few areas. Advanced Information Technology is one of those. The short-term approach by the US generally has been to import talent from other countries. This can work for only a limited time. One of the key goals of PTI's outreach at the K-12 levels is to inform and encourage young Hoosiers about the many opportunities in information technology and informatics. This is often best done by mixing fun and education in hands-on activities.

3.2.1. *Minority Engineering Advancement Program*

The Minority Engineering Advancement Program (MEAP) summer camp is one of the most important technology outreach efforts put on at the IUPUI campus. The MEAP web site

(<http://www.engr.iupui.edu/meap/>)

states that "MEAP is a week-long, summer, non-residential camp on the IUPUI campus. MEAP is for students who have completed 6th through 11th grade levels. The camp is designed for students that are underrepresented in engineering and technology careers."

This year, Research Technologies staff led the program on the last day of MEAP with a session titled "No Guts, No Glory." Twenty-four students participated in the assembly and analysis of components of a desktop computer and computer networks. RT staff also participated in other parts of the program, including a laser demonstration presented by RT staff members Kristy Kallback-Rose and Danko Antolovic. The students were able to see how light is refracted through different media.



Figure 7: Carmel Clay School Student Lawrence Johnson shines a laser pointer through a bent translucent rod as scientist Danko Antolovic instructs and Ikenna Stovall, Dominique Gregory, and Marsquis Sailles observe at MEAP summer workshop.

3.2.2. RobotCamp – June 2012

“Ready, Set, Robots” is a hands on summer activity targeting multiple age groups (grades 4-6, 6-8, 8-12). A total of 48 young people participated in the June, 2012 event hosted at IU. The focus was on programming the robots – i.e., providing pre-constructed robots to the students. The programming challenges are then tailored to the specific age group and time constraints. The camp introduced teens to technology-related fields and concepts including computer programming, high performance computing, and networking as they work side by side with IU technology professionals and researchers. Using kits from the LEGO® Mindstorms® series, participants worked in small teams to learn the basic computer programming skills needed to command a robot to complete a set of predetermined tasks.

This is the sixth year of offering these workshops, which have become very successful. Invitations from various STEM communities throughout the state are asking for our participation in other events. Our goal remains to spur interest in the youth in our state to consider science and technology and pursue a degree in a STEM discipline. This very directly affects the development of a 21st century workforce – and we hope the retention of this workforce within the state of Indiana. The 2012 Ready, Set, Robots! Camp was sponsored by IBM. Inc., and their support is gratefully acknowledged.



Figure 8. UIITS Research Technologies Division manager Kurt Seiffert introduces one of the Robot Camp programming teams on the final day of Ready, Set Robots!



Figure 9 Students pose together for a group photograph at the end of a summer 2012 Robot Camp session

4. Outreach to technical and government communities

Quoting from the extended statement of PTI’s mission (from): “As a world-class organization, PTI pairs fundamental academic computational research with the widely known strengths of Indiana University through innovations and service delivery in networking and high performance computing. By means of organization into research and service centers, PTI encourages collaboration that crosses center boundaries, where practice informs the science, and science advances the practice, the results of which advance the university, state, and nation as a whole.” Advancing the practice of science and technology is possible only if intensive efforts to disseminate information about new advances are coupled with the creation of those advances. As a result, PTI is very active in outreach to the technical community and – where appropriate – to representatives of government agencies seeking technical information about advanced technology.

4.1.1. IU Activities at SC12

The largest annual conference in the world is The International Conference for High Performance Computing, Networking, Storage and Analysis (SuperComputing or SC) conference sponsored jointly by the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE). Thousands of technical experts, students, and government representatives from all across the globe gather for this conference held in November of each year in the US. All PTI Centers participated in the SC12 Conference held in November in Salt Lake City, Utah. This event serves several important functions, including highlighting the major research and innovative work conducted by Indiana University.

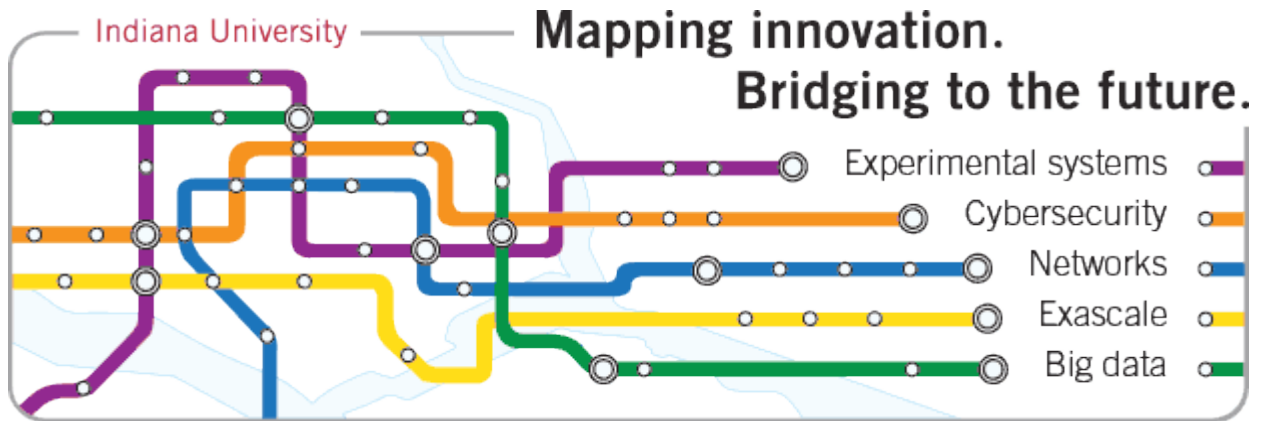


Figure 10. Caption and main theme artwork for the IU display at SC12

IU's display at SC12 offered talks, demonstrations, and live hardware exhibits for visiting researchers, agency officials, and potential collaborators. Every PTI Center was well-represented in the IU booth, both with staff on hand to present their work throughout the exhibition days, as well as representing their research with technical presentations, videos, and demonstrations in the booth and in the booths of IU's collaborators: Internet2/NOAA, Penguin Computing, University of Virginia, and XSEDE. IU utilized a subway map theme in its printed materials and graphics in order to demonstrate the interconnected structure of PTI and the ties between each of the research and cyberinfrastructure/service centers. IU staff scanned the badges of over 1300 visitors to the booth, nearly 15% of the total conference attendees, and education and outreach staff estimate we met with about 1 in 5 of the attendees overall.

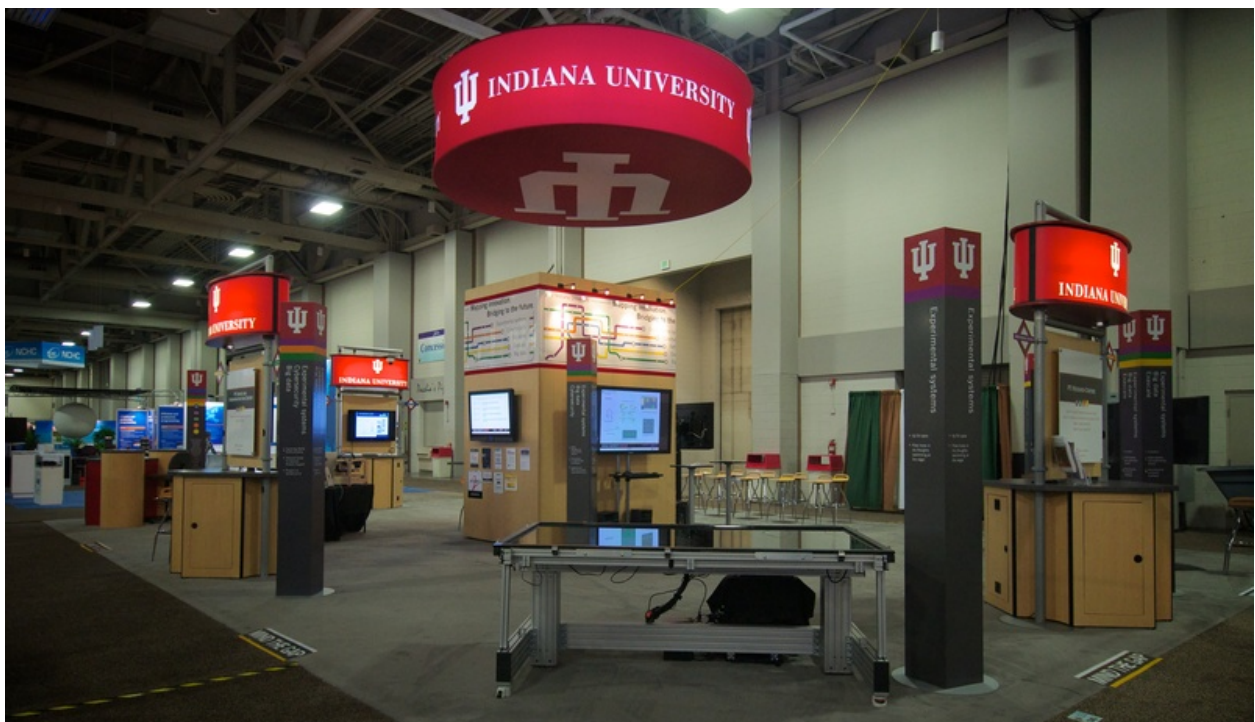


Figure 11. IU's display at SC12.

IU technical demonstrations included the IQ-Tilt and a Makerbot 3-D printer, which printed items for visitors to the booth, while providing information on 3-D modeling and fabrication technologies. In the booth, IU supported a demonstration within the 100-Gigabit network SCinet Research Sandbox in cooperation with Orange Networks to investigate Lustre over ROCE networking performance. IU also hosted collaborators from the Geant Pan-European Research and Education Network in order to highlight international networking relationships.



Figure 12. Visitors at the IU booth interact with a wide range of visualization projects on the IQ Tilt table. Photo – David Hancock.

4.1.2. *HathiTrust Research Center UnCamp*

In the original charter from HathiTrust, the HathiTrust Research Center (HTRC), co-founded by the Data to Insight Center and University of Illinois, committed to an 18-month demonstration of capability. To fulfill this commitment, the HathiTrust Research Center held an UnCamp – a combination un-conference and boot camp experience where researchers, librarians and university administrators could see and use the functionality of the HTRC, talk with the developers and PI’s, and help guide the direction of the HTRC by providing new ideas and insights about the software and the organization. The UnCamp was held September 10 and 11, 2012 in the IUB Cyberinfrastructure Building lobby.



Figure 13. John Wilkin, University of Michigan and HathiTrust, gives the HTRC UnCamp opening keynote

The 130 UnCamp participants came from 46 different institutions including universities, the Library of Congress and OCLC, and 4 European universities. There were 95 paid attendees, 19 students, four guests, and 12 HTRC staff/researchers. The participants held a variety of roles in their institutions; they self-identified as librarians (44), developers (43), researchers (43), preservationists (6), administrators (16), and other (11) including such roles as strategic planner, blogger, and project manager.

Over the 1.5 days, 20 sessions were held with 12 different speakers. There were nine interactive sessions that included hands-on software tutorials, programming sessions, collaborative brainstorming, and future direction sessions. In the three hands-on tutorial style sessions, the participants initiated 354 HTRC sessions, created 43 sub-collections of the data and ran 153 algorithms. The participants used social media to summarize and converse about the session, generating 486 tweets during the UnCamp (see Figure X-5 created by Scott Weingart, an UnCamp participant).

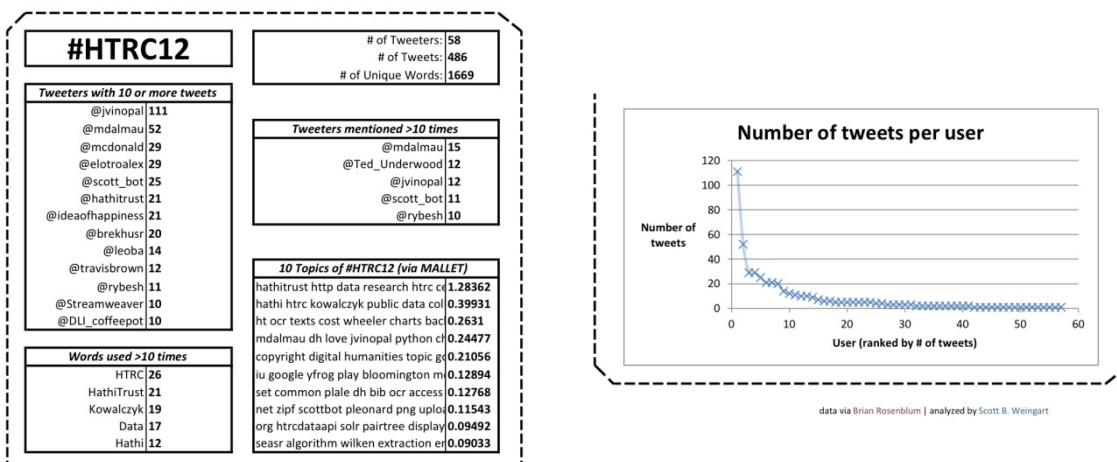


Figure X-5: Analysis of Twitter Feed during the HTRC UnCamp

The UnCamp participants voted on topics to be discussed during the final sessions of the event. These topics generated substantive discussions and possible future actions. The HTRC in the classroom group developed several ideas for grant opportunities. The HTRC as Anchor for Digital Humanities Centers has prompted the HTRC team to look for opportunities to pursue this as an ongoing sustainability option. The OCR collection group has been the most active group, creating a listserv for further discussion. In addition, the UnCamp has brought a number of individual research collaboration opportunities to the Center.

4.1.3. *International initiatives led by the Data to Insight Center*

The Data to Insight Center (D2I) is emerging as a major leader in international organizations and standard-setting bodies dealing with digital data. Leadership in community forming and consensus building is essential in this area, as no one scientific community or even government can dictate standards to be used globally, and effective use of global data is essential for scientific discovery and preparation for and protection against natural disaster.

D2I hosted “Coming Together Around Data: A PI Meeting for Datanet/INTEROP”. This National Science Foundation (NSF)-funded meeting was highly successful gauged by the level of participant interaction and engagement. Plale, Jensen and Ping along with several Sr. staff members and Ph.D. students from the Center engaged participants by using tactics of the HathiTrust Research Center UnCamp. Participants shaped the 1.5 day meeting as it unfolded through an opening poster session of research sharing, lightning talks, birds-of-a-feather (BoFs) and invited talks from the NSF, Internet Engineering Taskforce (IETF) and European Data Infrastructure (EUDAT).

The written results thus far are wiki pages of individual presentations, posters and BoF notes as well as a white paper submitted to the NSF on February 23, 2012. These resources may be accessed at <http://d2i.indiana.edu/data2012> . A small steering committee formed as an outcome of the meeting to pursue follow-on activities. An outgrowth was the formation of a work group examining data set identifier interoperability, with a meeting to held at IETF, Vancouver, BC, CA in July 2012.



Figure 14: Coming Together Around Data: A PI Meeting for Datanet/INTEROP (Data2012) Participants

The Data to Insight Center also founded the PRAGMA Student group to provide students of PRAGMA affiliated universities with leadership and collaborative opportunities across a pacific rim collaboration of organizations. This effort, which aligns with IU President McRobbie’s efforts in giving IU students international exposure, is a collaboration between Plale and PRAGMA Chair Peter Arzberger of San Diego Supercomputing Center.

4.1.4. *Ecological and Evolutionary Functional Genomics: Jamboree RNA Data Analysis and Interpretation Event, May 2012*
Funding: European Science Foundation, National Science Foundation (via XSEDE and NCGAS grants)

For this event, 22 researchers from Europe, Canada and the US came to Bloomington for five days to preform RNA-sequence data analysis on new data available for a particular species of water flea - *Daphnia mango*. The three primary motivations for this analysis jamboree were (1) to jump start biological discoveries from the analysis of large-scale RNA-sequence experiments, (2) to improve the computational gene models for the newly annotated *Daphnia magna* genome, and (3) to understand the molecular mechanisms of *Daphnia*'s adaptations to environmental stress. NCGAS and the IU Bloomington Center for Genomics and Bioinformatics provided instruction and access to the basic bioinformatic tools and computational resources needed to explore and interpret the genetics of this important ecological indicator species. Prior genomic and bioinformatic experience was not required for the participants. This was an important part of the jamboree as a training event – the participants were primarily experts in *Daphnia* research and one of the key points of the jamboree was to train them in modern RNA analysis techniques. This event included over 19 formal presentations and training on the Trinity RNA assembly software.



Figure 15: Participants at the International Daphnia Jamboree consider biological data in the new Cyberinfrastructure Building at IU Bloomington, using a display wall created by the Research Technologies division of UITS.

4.1.5. XSEDE12 Conference

The inaugural XSEDE-12 conference was held in Chicago, Illinois in July. PTI executive director Craig A. Stewart served as the general chair, and it was organized under the auspices of IU and PTI. Several of the PTI centers had papers accepted and presented their work at this conference.

Centered on the use of the XSEDE advanced digital research and education environment, XSEDE's first annual conference featured award-winning plenary session speakers, discussion of important innovations in XSEDE technology and services, and talks about U.S. and international science and cyberinfrastructure beyond XSEDE. The goal of XSEDE is to offer scientists and researchers tremendous capabilities with maximum productivity, enabling them to advance and share knowledge across domains, and the XSEDE12 conference helped showcase those advancements.

More than 600 individuals registered for XSEDE-12, and nearly that many attended. Dr. Richard Tapia, mathematician, professor, diversity advocate, and recent Medal of Science recipient, delivered the keynote, speaking about the need to develop and train American talent to meet pressing science needs. Tapia challenged everyone to “work hard and go out and be excellent.” In addition to the diverse group of keynote speakers, the XSEDE12 conference focused on diversity in many other ways — through funding for attendance by students from small schools and minority-serving institutions, sign language interpreters for plenary sessions, large-print programs, and physical accessibility to all conference venues. A particularly important element of the diversity of this conference was an NSF grant award to PTI/Research technologies Jenett Tillotson, to support travel by students from minority serving institutions, and students from minority groups, at the conference. This grant – submitted as an unsolicited proposal – changed the face of the conference, and made XSEDE12 one of the most diverse conferences held in advanced computing.



Figure 16: A highlight of XSEDE12 was a programming competition among teams of students attending the conference. This team of students from Rice University, who placed first in the competition (<https://www.xsede.org/xsede-newsletter-july-august-2012>), is representative of the diversity of students attending this conference.

Indiana University and PTI benefitted greatly from their investment in leading this conference. From the opening remarks to the closing remarks, IU and PTI were constantly visible and present. PTI and IU staff gave a total of two tutorials, organized or participated in four panels, and were authors or coauthors on five technical papers presented at the conference. One of the most interesting and well-attended panels organized by PTI Managing Director Beth Plale, was on data management, preservation, and curation.

Leading a major conference like this has tremendous value to the national research and education community, and it has tremendous value for IU and PTI. The XSEDE12 conference received very high marks from attendees in terms of the quality of the conference. It was widely praised as an enjoyable and well-run event of high technical quality. The visibility and the sense of community engagement and organizational capability that results from running a major conference well – particularly the first offering of a new conference series – adds credibility to PTI and IU that aids the grant competitiveness and “brand recognition” of PTI and all members of the IU community associated with PTI.

4.1.6. *CACR Cybersecurity Summit*

CACR hosted the annual “Cybersecurity Summit” in Indianapolis in October. Stewart Baker, former assistant secretary for policy at the U.S. Department of Homeland Security was the keynote speaker. This year’s summit titled: “Mr. President, We Have a Situation: Advising the Next U.S. President of Cyberthreats”, focused on the very real danger and growing cybersecurity issues faced by the U.S. Federal Government.

4.1.7. *Virtual School in Computational Science and Engineering (VSCSE) Science Cloud Summer School 2012*

The Science Cloud Summer School targeted education and training of graduate students and the fostering of a community around a topic that has increasing interest and relevance: the use of cloud computing technologies in science - including Infrastructure as a Service and Platform as a Service. Because cloud computing systems and technologies provide a considerable departure from traditional models and evolve at a rapid pace, this event provided a basis for students to immerse in a focused, intensive curriculum to learn fundamentals and experiment with these technologies in practice.

The summer school took place July 30th through Aug 3rd, and was attended by approximately 240 students across ten different partner sites. It was sponsored by FutureGrid, Salsa HPC, XSEDE, and VSCSE. Geoffrey Fox served as the summer school's organizer. Participants used FutureGrid infrastructure to conduct hands-on assignments.

The summer school featured presentations from 27 researchers and practitioners from academia, national labs, and industry. Detailed information about the program, curriculum, and presenters, including videos taken during the event, can be found on the science cloud summer school page:

<http://sciencecloudsummer2012.tumblr.com>

4.1.8. *International Science Grid This Week*

Research Technologies received three years of funding from the National Science Foundation to hire the editor for the “US newsdesk” for International Science Grid This Week (<http://www.isgtw.org/>). Amber Harmon was hired in November to serve in this role. Matt Link serves as the principal investigator on this award, which is carried out under his direction by the Communications Office within the Office of the Vice President for Information Technology. iSGTW is a major, international news venue communicating science and science outcomes to the lay public, technical community, and government representatives. IU is able to disseminate critically important information in a timely fashion to tens of thousands of people worldwide through this web publication.



Figure 17. Main page for International Science Grid This Week (<http://www.isgtw.org/>).

5. PTI-related videos released during the reporting period.

Videos distributed over the web are a powerful way to disseminate information. PTI has made extensive use of videos presented on the web to communicate about its activities in 2012. A listing of videos created by PTI in 2012 follows:

- Campus Bridging - Stewart Presentation
<http://internal.pti.iu.edu/campusbridging/penguin-computing-and-iu> (11/2012)
- Campus Bridging - Knepper Presentation
<http://internal.pti.iu.edu/campusbridging/what-is-campus-bridging> (7/2012)
- Promo Video Hathi Trust Research Center -
<http://internal.pti.iu.edu/video/hathitrustresearchcenterpromo> (12/2012)
- Daily Regional Weather Forecasts in Support of Vortex2
<http://internal.pti.iu.edu/video/vortex2-dataset> (12/2012)
- John Wilkin Keynote; Hathitrust Research Center (HTRC) UnCamp
<http://internal.pti.iu.edu/video/htrc-uncamp2012-johnwilkin> (Summer 2012)
- Ted Underwood – The Task of Cleaning and Enriching Large Collections; HTRC Uncamp
<http://internal.pti.iu.edu/video/htrc-uncamp2012-tedunderwood>
- Colin Allen – Computational Philosophy and the Examined Text; HTRC Uncamp
<http://internal.pti.iu.edu/video/htrc-uncamp2012-colinallen>

6. Summary of student support by Pervasive Technology Institute

The support and of students obtaining undergraduate and graduate degrees is very important among the activities of the Pervasive Technology Institute.

Group	Undergraduate Student Employees /Interns	M.S. Students Employed or Supported	Ph.D. Students Employed or Supported	Undergraduate Degrees Awarded	M.S. Degrees Awarded	Ph.D. Degrees Awarded
PTI Research Centers						
Center for Applied Cybersecurity Research	0	3	5	0	2	1
Center for Research in Extreme Scale Technologies	2	1	11	0	1	2
Data to Insight Center	0	18	34	0	5	1
Digital Science Center	4	14	31	2	11	3
PTI CyberInfrastructure & Service Centers						
National Center for Genome Analysis	1	1	6	0	0	1
Research Technologies	2	8	2	0	4	0
PTI Total						

Table 1. PTI support for undergraduate and graduate students, and degrees completed by students employed or supported by PTI.

7. Full listing of EOT events carried out during reporting period

The Pervasive Technology Institute participated in a total of more than 250 education, outreach, and training events during this calendar year. Attendance at these events totaled more than 29,000. A full listing of these events is given below.

Type of event	Total # of events	Total # of participants
K-12	28	3,260
Lay public	12	10,618
Business / government	7	581
Technical	109	15,351

Table 2. Summary of education, outreach, and training events put on by the IU Pervasive Technology Institute in 2012.

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
Digital Science Center							
CGL	Unsupervised Learning Of Finite Mixture Models With Deterministic Annealing For Large-scale Data Analysis	PhD Thesis Defense	Indiana University	Jan 12	4	Faculty	
CGL	School of Informatics and Computing Research	Presentation	Regenstreif Institute, Indianapolis, IN	Jan 13	30	Medical audience	
CGL	Scalable High Performance Dimension Reduction	PhD Thesis Defense	Indiana University	Jan 17	4	Faculty	
CGL	Deterministic Annealing	Group Talk	Indiana University	Jan 23	8	Technical audience	
CGL	QuakeSim/E-DECIDER Effort	Group Talk	Indiana University	Feb 8	20	Technical audience	
CGL	High Performance Integration of Data Parallel File Systems and Computing	PhD Thesis Proposal	Indiana University	Feb 10	4	Faculty	
CGL	Advances in Clouds and Their Application to Data Intensive Problems	Seminar	University of Southern California, Los Angeles, CA	Feb 24	50	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Data Enabled Science	SALSA Group Presentation	Indiana University	Feb 27	12	Technical audience	
CGL	Research and School of Informatics and Computing	Student Presentation	Indiana University	Mar 29	7	Graduate students	
CGL	Cyberinfrastructure Advisory Board Meeting	Meeting	CRISIS, University of Kansas, Lawrence, KS	Apr 2	30	CRISIS faculty and researchers	
CGL	Clouds from FutureGrid's Perspective	Telecon	Large Scale Network Middleware and Grid Infrastructure Coordination (MAGIC) Team	Apr 4	10	Technical audience	
CGL	OpenQuake Social Networking for EarthCube	Meeting	Earthcube Governance Group, Denver, CO	Apr 4-5	15	Technical audience	
CGL	CRISIS Cyberinfrastructure	Telecon	NSF Virtual Review, Indiana University	Apr 4	10	Technical audience	
CGL	Panel on Cloud and HPC	Panel	OpenStack Design Summit & Conference, San Francisco, CA	Apr 16-20	100	Technical audience	
CGL	Deterministic Annealing Dimension Reduction and Biology	Presentation	Environmental Genomics, Indiana University	Apr 20	20	Faculty and researchers	
CGL	Scalable Parallel Computing on Clouds	PhD Thesis Proposal	Indiana University	Apr 23	4	Faculty	
CGL	Eucalyptus on FutureGrid: A case for Eucalyptus 3	Indiana University Customer Story	EucaDay, New York City, NY	Apr 25	45	Technical audience	
CGL	MapReduce, Collective Communication, and Services	Oral Exam	Indiana University	Apr 26	4	Faculty	
CGL	Data Enabled Science	SALSA Group Presentation	Indiana University	Apr 29	10	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	New Modes of Business and Innovation	Panel Action Team	DELSA Workshop: Supporting Ecosystem for the Life Sciences in the Beginning of the 21 st Century, Bethesda, MD	May 3-4	80	Technical audience	
CGL	Programming Models for Technical Computing on Clouds and Supercomputers (aka HPC)	Presentation	Cloud Futures 2012: Hot Topics in Research and Education, Berkeley, CA	May 7-8	100	Technical audience	
CGL	Twister4Azure: Parallel Data Analytics on Azure	Presentation	Cloud Futures 2012: Hot Topics in Research and Education, Berkeley, CA	May 7-8	100	Technical audience	
CGL	Advanced Technology for Sensor Clouds	Presentation	AMSA TO 4 Sensor Grid Final Review, Ball Aerospace, Dayton, OH	May 9	12	Air Force and Ball Aerospace project members	
CGL	Distributed Clouds for Scalable Collaborative Sensor-Centric Grid Applications	Presentation	AMSA TO 4 Sensor Grid Final Review, Ball Aerospace, Dayton, OH	May 9	12	Air Force and Ball Aerospace project members	
CGL	Clouds for Sensors and Data Intensive Applications	Presentation	DPMSS 2012 Workshop at IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Ottawa, CA	May 13	25	Technical audience	
CGL	Investigation of Data Locality in MapReduce	Presentation	IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Ottawa, CA	May 15	50	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	What is FutureGrid Overview	Presentation	IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2012), Ottawa, CA	May 16	50	Technical audience	
CGL	Architecture and Measured Characteristics of a Cloud Based Internet of Things	Presentation	IoT 2012 Workshop at the 2012 International Conference on Collaboration, Technologies and Systems (CTS 2012), Denver, CO	May 22	40	Technical audience	
CGL	Collaborative Annotation of Real Time Streams on Android-Enabled Devices	Presentation	IoT 2012 Workshop at the 2012 International Conference on Collaboration, Technologies and Systems (CTS 2012), Denver, CO	May 22	40	Technical audience	
CGL	Big Data Architectures	Presentation at Panel on Exploiting Big Data	2012 International Conference on Collaboration, Technologies and Systems (CTS 2012), Denver, CO	May 23	100	Technical audience	
CGL	Adaptive Interpolation of Multidimensional Scaling	Presentation	International Conference on Computational Science (ICCS), Omaha, NE	Jun 4-6	50	Technical audience	
CGL	EarthCube and Social Media/Networking	Presentation	EarthCube Governance Group, SURA, Washington, DC	Jun	15	Technical audience	
CGL	Science Applications on Clouds and FutureGrid	Presentation	Workshop on Cloud Computing, University of Florida, Gainesville, FL	Jun 14	50	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Hybrid MapReduce Workflow	Presentation	Emerging Computational Methods for the Life Sciences (ECMLS2012) at HPDC 2012, Delft, NL	Jun 18	20	Technical audience	
CGL	Visualizing the Protein Sequence Universe	Presentation	Emerging Computational Methods for the Life Sciences (ECMLS2012) at HPDC 2012, Delft, NL	Jun 18	20	Technical audience	
CGL	Challenges at the Interface of Life Sciences and Cyberinfrastructure	Presentation	Emerging Computational Methods for the Life Sciences (ECMLS2012) at HPDC 2012, Delft, NL	Jun 18	20	Technical audience	
CGL	Introduction to DELSA and DEAP	Panel	Emerging Computational Methods for the Life Sciences (ECMLS2012) at HPDC 2012, Delft, NL	Jun 18	20	Technical audience	
CGL	Investigation of Data Locality and Fairness in MapReduce	Presentation	Workshop MAPREDUCE'12 at HPDC 2012, Delft, NL	Jun 18	30	Technical audience	
CGL	Science Clouds and FutureGrid's Perspective	Presentation	OGF35 Workshop at HPDC 2012, Delft, NL	Jun 18	40	Technical audience	
CGL	Directions in eScience Interoperability and Science Clouds	Presentation	OGF35 Workshop at HPDC 2012, Delft, NL	Jun 18	20	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Multiparticle Partial Wave Analysis: From Regge Theory and Duality to the Cloud	Presentation	International Workshop on Analysis Tools for Next Generation Hadron Spectroscopy (ATHOS2012), Camogli, IT	Jun 19	50	Technical audience	
CGL	Summary of S-Matrix and Regge Theory Lessons for PWA	Presentation	International Workshop on Analysis Tools for Next Generation Hadron Spectroscopy (ATHOS2012), Camogli, IT	Jun 19	50	Technical audience	
CNetS (Crandall)	Studying the world through Photo Sharing Websites	Outreach workshop	IU Mini University, Indiana Memorial Union	Jun 22	50	General	
CGL	Scientific Computing Supported by Clouds, Grids, and HPC (Exascale) Systems	Presentation	HPC 2012, Cetraro, IT	Jun 25	50	Technical audience	
CGL	Comparison of Multiple Cloud Frameworks	Presentation	5 th International; Conference on Cloud Computing, IEEE CLOUD 2012, Honolulu, HI	Jun 24	25	Technical audience	
CGL	Abstract Image Management and Universal Image Registration for Cloud and HPC Infrastructures	Presentation	5 th International; Conference on Cloud Computing, IEEE CLOUD 2012, Honolulu, HI	Jun 24	25	Technical audience	
CGL	FutureGrid: A Distributed High Performance Test Bed for Clouds	Presentation	Information Sciences Institute – East (USC), Washington, DC	Jun 26	20	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	FutureGrid Overview	Presentation	HPC 2012, Cetraro, IT	Jun 28	50	Technical audience	
CGL	Scientific Data Analytics on Cloud and HPC Platforms	Presentation	HPC 2012, Cetraro, IT	Jun 28	20	Technical audience	
CGL	Digital Science Center Overview	Presentation	Collaboration meeting at Beihang University, Beijing, CH	Jul 08	12	Technical audience	
CGL	Science Clouds and Their Innovative Applications	Presentation	2 nd International Workshop on Cloud Computing and Future Internet (FICC2012), Tsinghua University, Beijing, CH	Jul 9-10	50	Technical audience	
CGL	Science Clouds and Their Use in Data Intensive Applications	Keynote	10 th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA2012), Leganes, Madrid, SP	Jul 10-13	100	Technical audience	
CGL	FutureGrid Overview	Presentation	FutureGrid User Advisory Board Meeting, XSEDE'12, Chicago, IL	Jul 16	20	FutureGrid User Advisory Board	
CGL	Hosting Cloud, HPC, and Grid Educational Activities on FutureGrid	Presentation	BoF Session, XSEDE'12, Chicago, IL	Jul 17	20	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	FutureGrid Education: Using Case Studies to Develop Curriculum for Communicating Parallel and Distributed Computing Concepts	Presentation	EoT Session, XSEDE'12, Chicago, IL	Jul 17	25	Technical audience	
CGL	Use of Clouds to Support The Long Tail of Science	Panel	Panel on the Long Tail of Science, XSEDE'12, Chicago, IL	Jul 18	100	Technical audience	
CGL	MapReduce and Data Intensive Applications	Presentation	BoF Session, XSEDE'12, Chicago, IL	Jul 18	15	Technical audience	
CGL	Computing Testbeds as a Service	Workshop	NSF INCOSE2 Workshop on Instrumentation for Computer Science, Snowbird, UT	Jul 21	15	Technical audience	
CGL	Clouds and Security	Panel	ICETE 2012 Joint Conference on e-Business and Telecommunications, Rome, Italy	Jul 24	100	Technical audience	
CGL	Cyberinfrastructure for eScience and eBusiness from Clouds to Exascale	Keynote	ICETE 2012 Joint Conference on e-Business and Telecommunications, Rome, Italy	Jul 27	100	Technical audience	
CGL	Introduction to Clouds and the VSCSE Summer School on Science Clouds	Presentation	VSCSE Summer School on Science Clouds	Jul 30	150	Live and Webcast	
CGL	FutureGrid Overview	Presentation	VSCSE Summer School on Science Clouds	Jul 30	150	Live and Webcast	
CGL	Virtual Clusters Supporting MapReduce in the Cloud	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Reproducible Environment for Scientific Applications (Lab Session)	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	
CGL	Good O'le Hadoop! How We Love Thee	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	
CGL	Apache Hbase	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	
CGL	High Level Language: Pig Latin	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	
CGL	Twister Tutorial	Presentation	VSCSE Summer School on Science Clouds	Jul 31	150	Live and Webcast	
CGL	Windows Azure Cloud	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	Twister4Azure: Iterative MapReduce for Windows Azure Cloud	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	OpenStack and Eucalyptus on FutureGrid	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	FutureGrid Image Management and RAIN	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	FutureGrid Move	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	GPUs on Clouds	Presentation	VSCSE Summer School on Science Clouds	Aug 01	150	Live and Webcast	
CGL	Science Clouds and CFD	Presentation	NIA CFD Conference: Future Directions in CFD Research, A Modeling and Simulation Conference, Hampton, VA	Aug 06	100	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Scalable Deep Analytics on Cloud and High Performance Computing Environments	Presentation	NASA SACD Lecture Series on Complex Systems and Deep Analytics, NASA Langley Research Center, Hampton, VA	Aug 08	15	Technical audience	
CGL	Panda: MapReduce Framework on GPUs and CPUs	Presentation	Indiana University	Aug 10	10	Technical audience	
CGL	FutureGrid Computing Testbed as a Service	Presentation	Indiana University	Aug 23	10	Technical audience	
CGL	High Performance Integration of Data Parallel File Systems and Computing: Improving MapReduce	PhD Thesis Presentation	Indiana University	Aug 31	4	Faculty	
CGL	Robust Parallel Clustering Algorithms	Presentation	Workshop on Clusters, Clouds, and Data for Scientific Computing (CCDSC), Lyon, FR	Sep 13	50	Technical audience	
CGL	Data Analytics: Curricula and Clouds	Presentation	Clemson University	Sep 21	75	Technical audience	
CGL	Proteomics, Metagenomics, and Deterministic Annealing	Presentation	Center for Research in Extreme Scale Technologies (CREST), Indiana University	Oct 05	25	Technical audience	
CGL	Co-processing SPMD Computation on GPUs and CPUs with MapReduce Interface on Shared Memory System	Presentation	Indiana University	Oct 05	12	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	DACIDR: A Deterministic Annealing Clustering and Interpolative Dimension Reduction Method	Presentation	ACM Conference on Bioinformatics, Computational Biology and Biomedicine, Orlando, FL	Oct 07-10	30	Technical audience	
CGL	Cloud Computing for K-12	Presentation	Workshop on Introduction to High Performance and Cloud Computing for K-12 Teachers and Students, Purdue University, West Lafayette, IN	Oct 05	25	Technical audience	
CGL	Data Analytics and its Curricula	Presentation	DELSA Workshop at 8 th IEEE International Conference on eScience, Chicago, IL	Oct 09	20	Technical audience	
CGL	Data Analytics and its Curricula	Presentation	Microsoft eScience Workshop at 8 th IEEE International Conference on eScience, Chicago, IL	Oct 09	50	Technical audience	
CGL	Cyberinfrastructure Supporting Social Science	Presentation	Internet2-Microsoft Workshop on Cyberinfrastructure for the Social Sciences, University of Washington, Seattle, WA	Oct 16	40	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Proposed Project on Microsoft Academic Search	Presentation	Internet2-Microsoft Workshop on Cyberinfrastructure for the Social Sciences, University of Washington, Seattle, WA	Oct 16	40	Technical audience	
CGL	big data in Research and Education	Keynote	Symposium on big data Science and Engineering, Metropolitan State University, Minneapolis, MN	Oct 19	60	Technical audience	
CGL	ACES and Clouds	Presentation	APEC Cooperation for Earthquake Simulation (ACES) 8 th International Workshop Advances in Simulation of Multihazards, Maui, HI	Oct 24	50	Technical audience	
CNetS (Menczer)	Tracking the Diffusion of Ideas in Social Media	Invited Talk	IU Lifelong Learning Symposium on 2012 Elections	Oct 26	50	General	
CGL	Large Scale Data Analytics on Clouds	Keynote	4 th International Workshop on Cloud Data Management (CloudDB'12), Maui, HI	Oct 29	50	Technical audience	
CGL	Performance Model for Parallel Matrix Multiplication with Dryad: Dataflow Graph Runtime	Presentation	2012 International Symposium on big data and Mapreduce, Xiangta, Hunan, China	Nov 01	20	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Layer-finding in Radar Echograms using Probabilistic Graphical Models	Presentation	21 st Conference of the International Association for Pattern Recognition (IAPR), Tsukuba, Japan	Nov 11-15	50	Technical audience	
CGL	Reproducibility and Scalability in experimentation through Cloud Computing Technologies	Doctoral Showcase	SC12 International Conference for High Performance Computing, Networking, Storage and Analytics, Salt Lake City, UT	Nov 14	50	Technical audience	
CGL	Status of CNGrid and Interests on International Testbeds	Birds of a Feather on Computing Research Testbeds as a Service: Supporting Large Scale Experiments and Testing	SC12 International Conference for High Performance Computing, Networking, Storage and Analytics, Salt Lake City, UT	Nov 13	50	Technical audience	
CGL	Citrix CloudStack for Testbeds	Birds of a Feather on Computing Research Testbeds as a Service: Supporting Large Scale Experiments and Testing	SC12 International Conference for High Performance Computing, Networking, Storage and Analytics, Salt Lake City, UT	Nov 13	50	Technical audience	
CGL	Computing Research Testbeds as a Service: Supporting Large Scale Experiments and Testing	Birds of a Feather on Computing Research Testbeds as a Service: Supporting Large Scale Experiments and Testing	SC12 International Conference for High Performance Computing, Networking, Storage and Analytics, Salt Lake City, UT	Nov 13	50	Technical audience	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CGL	Introduction to FutureGrid: Towards a Computing Testbed as a Service	Presentation	Instrumentation -as-a-Service for Computer and Information Science and Engineering (INCISE 2) Workshop, Miami, FL	Dec 05-06	20	Technical	
CGL	Big Data and Clouds: Computing, Analytics and Curriculum	Presentation	Persistent Systems Headquarters Pune India	Dec 20	25	Technical	
CGL	Data Analytics: Clouds, Algorithms, and Curricula	Presentation	CDAC Centre for Development of Advanced Computing, Pune, India	Dec 20	25	Technical	
Data to Insight Center							
D2I	Temporal Data Mining of Scientific Data Provenance	D2I Seminar Series Peng Chen	Innovation Center, Bloomington, IN	Feb 8	22	Technical	5
D2I	Adaptable and Incremental Metadata Capture in e-Science	D2I Seminar Series: Scott Jensen	Innovation Center, Bloomington, IN	Feb 22	28	Technical	6
D2I	The Open Gateway Computing Environment: Experiences Developing Tools for Scientific Communities in the Apache Software Foundation	D2I Seminar Series: Marlon Pierce	Innovation Center, Bloomington, IN	Mar 7	32	Technical	5
D2I	The Illinois Research Data Initiative: gathering requirements	D2I Seminar Series: Beth Sandore	Innovation Center, Bloomington, IN	Mar 26	25	Technical	4

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
DLP	Archives Online	Presentation by Dot Porter to archivists in the State of Indiana on archival collections access via online finding aids	Society of Indiana Archivists Spring Conference, Indianapolis, IN	Apr	100	Archivists	
D2I	Middleware alternatives for storm surge predictions in Windows Azure	D2I Seminar Series: Beth Plale	Innovation Center, Bloomington, IN	May 2	38	Technical	8
D2I	Effectiveness of Hybrid Workflow Systems for Computational Science	D2I Seminar Series: Kavitha Chandrasekar	Innovation Center, Bloomington, IN	May 23	15	Technical	3
DLP	Partnering for Discovery	Presentation by Dot Porter on panel with other IU Librarians to discuss digital library metadata and access issues	Ohio Valley Group of Technical Services Librarians 2012 Conference, Evansville, IN	May	50	Librarians	
DLP	Digital Humanities & Libraries THATcamp	Interactive workshop; a venue to further explore on-going conversations about strategic partnerships and services libraries are uniquely situated to offer to the digital humanities arena	Digital Library Federation, Denver, CO	Nov 30	70	Librarians/technical	
DLP	IQ-Wall Training	Training session: use of UITS AVL IQ-Wall visualization wall in Wells Library	N/A	Sep 4, Oct 2, Oct 13, Nov 6, Nov 16	37	Librarians, faculty, technical, instructional technologists	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
D2I	An Integrated Resource Management and Scheduling Framework for Production Supercomputers	Talk: Wei Tang, Illinois Institute of Technology	D2I Seminar Series, Bloomington, IN	Jun 4	25	Technical	5
D2I	Ontologies for Scientific Data Transformation	Talk: Leonardo Salayandia, Research Specialist, NSF-funded CyberShARE Center at the University of Texas El Paso	D2I Seminar Series, Bloomington, IN	Jun 15	28	Technical	6
D2I	Workflows for Digital Preservation and Curation Workshop	Tutorial: Overview of workflow systems, hands-on experience using the Trident Workflow Workbench to compose workflows using the preservation and curation components provided, and a roadmap to creating customized components.	7 th International Conference on Open Repositories (OR2012), Edinburgh, Scotland	Jul 10	35	Technical	18
D2I	HathiTrust Research Center	Various presenters	HTRC UnCamp 2012, Bloomington, IN	Sep 10-11	130	Librarians, Developers, Programmers, Administrators, Preservationists, Students	43
D2I	Overview of the ongoing projects of D2I	Various presenters	D2I Seminar Series, Bloomington, IN	Sep 19	32	Technical	8
D2I	Processing Sliding Window Joins over High-Speed Data Streams	Talk: Abhirup Chakraborty, D2I postdoc	D2I Seminar Series, Bloomington, IN	Sep 26	18	Technical	3

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
D2I	Synthetic Aperture Radar Interferometry for 3D Modeling and Earthquake Monitoring	Talk: Maryam Rahnemoonfar, D2I Visiting Scholar	D2I Seminar Series, Bloomington, IN	Oct 17	15	Technical	3
D2I	Towards Virtualization-Based Kernel Malware Defense	Talk: Dongyan Xu, Department of Computer Science, Purdue University	D2I Seminar Series, Bloomington, IN	Nov 5	34	Technical	12
D2I	Tutorial: Workflows for Digital Preservation and Curation Workshop	Talk: Overview of workflow systems, hands-on experience using a Workflow Workbench to compose workflows for data preservation and curation. Roadmap to creating customized components.	Workflows for Digital Preservation and Curation Workshop, Bloomington, IN	Nov 16	15	Technical	9
D2I - Plale	“Trek through Research Data Alliance (RDA)”	Plale Talk	Bridging Big Data Infrastructures Workshop/ Taipei, Taiwan	Dec 3-6	200	Technical	
D2I	Avalon Media System	Dunn, Jon W. presentation	Poster presentation, Association of Moving Image Archivists, Seattle, Washington	Dec 4	120	technical/policy	2
D2I	Kuali OLE Seminar	McDonald, R.H. presentation	Sponsored event by the Society of College, National and University Libraries (SCONUL-UK)	Dec 6	65	technical	1

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
D2I	The HathiTrust Research Center: Opening Up the Elephant for New Knowledge Creation	McDonald, R.H., Sandore, B., and Unsworth, J. presentation	CNI Fall Membership Meeting 2012, http://www.cni.org/topics/digital-humanities/hathi-trust-research-center/	Dec 11	55	policy	0
D2I - Plale	“Big Data Meets HPC: Sustainable Environment-Actionable Data”	Plale Talk	HiPC 2012/Pune, India	Dec 19-20	45	Technical	
D2I - Plale	“Visualization of Network Data Provenance”	Plale Talk	HiPC 2012/Pune, India	Dec 19-20	100	Technical	
D2I - Plale	Workshop on Massive Data Analytics on Scalable Systems (DataMASS)	Plale General Chair	HiPC 2012/Pune, India	Dec 19-20	35	Technical	
Center for Applied Cybersecurity Research							
CACR	Cyber Deterrence	Nicholas J. Multari Pacific Northwest National Laboratory	CACR Security Seminar Maurer School of Law Room 335	Jan 26	34	Technical	5%
CACR	Distributed Web Security for Science Gateways	Jim Basney National Center for Supercomputing Applications	CACR Security Seminar Maurer School of Law Room 335	Feb 2	27	Technical	5%
CACR	Data Protection at Scale	Umesh Shankar Google	CACR Security Seminar Maurer School of Law Room 335	Mar 1	35	Technical	5%
CACR	The Jurisprudence of Cybersecurity	David P. Fidler Indiana University	CACR Security Seminar Maurer School of Law Room 335	Mar 22	33	Technical	5%
CACR	A Dose of Realism: User Experiments on Web Privacy and Security	Jens Grossklags Pennsylvania State University	CACR Security Seminar Maurer School of Law Room 213	Apr 5	28	Technical	5%

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CACR	Pinning Down 'Privacy' in Statistical Databases	Adam Smith Pennsylvania State University	CACR Security Seminar Maurer School of Law Room 213	Apr 19	42	Technical	5%
CACR	An Amulet for Trustworthy Wearable mHealth	David Kotz Dartmouth College	CACR/IU School of Informatics Collaborative Lecture Informatics East Room 130	May 9	22	Technical	5%
CACR	The Need for Ethical Security Research or Why If We Don't Get our Act Together Soon, We Will All Be in Some Really Hot Water	Michael Bailey, Associate Research Professor at University of Michigan	CACR Security Seminar/Maurer School of Law Room 335	Sep 6	28	Technical	2
CACR	Ctrl+Z: Digital Reinvention, the Right to be Forgotten, and the Future of the Past in the Internet Age	Megan Leta Ambrose, Doctoral candidate, ATLAS Institute, University of Colorado	CACR Security Seminar/Maurer School of Law Room 335	Sep 20	31	Technical	3
CACR	Check Out Where I Am! Privacy Implications of Location-Sharing in the Facebook Era	Sameer Patil, Helsinki Institute of Information Technology/IU School of Informatics and Computing	CACR Security Seminar/Maurer School of Law Room 335	Oct 11	36	Technical	3
CACR	Regaining Control of Your Website	Sid Stamm, Lead Privacy Engineer, Mozilla	CACR Security Seminar/Maurer School of Law Room 335	Nov 1	36	Technical	3
CACR	Mr. President, we have a situation: Advising the next President on Cybersecurity Threats	Keynote by Stewart Baker; panel featuring Stewart Baker, Susan Brenner, David Fidler, and Chris Soghoian; Welcome by Fred H. Cate	CACR Cybersecurity Summit University Place Conference Center IUPUI Campus Indianapolis	Oct 29	153	Technical, General, Business, and Government	5%

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
Center for Research in Extreme Scale Technologies							
CREST (Heiland)	Introduction to Modeling and Computational Neuroscience using Python	Lecture for Honors Physics high school classes.	Columbus, IN	Mar 28	106	K-12 (high school)	5
CREST (Lumsdaine)	Hoosier Guitar-Building Workshop	Hands-on guitar building workshop incorporating computer science, arts, music, and education	Bloomington, IN	May 11-13, and 18-20	10	General	
CREST (Lumsdaine)	Software Carpentry Workshop	Free workshop to graduate students	Bloomington, IN	Mar 7-8	25	Tech/Bus	
CREST (Lumsdaine, Sterling)	PXGL workshop	Kick-off meeting for PXGL grant project	Bloomington, IN	Mar 30–Apr 1	12	Tech/Bus	
CREST	Software Carpentry Workshop	Our goal is to help scientists and engineers become more productive by teaching them basic computing skills like program design, version control, testing, and task automation. In this two-day boot camp, short tutorials will alternate with hands-on practical exercises.	Software Carpentry Workshop/Purdue University	Oct 8-9	25	Graduate students	
CREST	Seminar	Thomas Sterling hosted an open seminar with research students of cybernetics and computational mathematics at Moscow State University	Moscow, Russia	Nov 30	50	Graduate students	

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
CREST	Notre Dame Fab Lab Visit	Traveled to Notre Dame Fab Lab, December 2012. This trip to Notre Dame was to further development of an IU fab lab and to foster collaboration with Notre Dame.	Notre Dame, Indiana	Dec 7	2	Research	
Research Technologies							
RT	#68711: Visit by Meadowwood to CIB, using the IQ-wall	Tour	n/a (IU)	Jan '12	44	Lay	0
RT	#68756: EOT: Indonesia University Tour	Tour	n/a (IU)	Jan	3	Bus	0
RT	#68564: Tour for Albert's N444 Class Jan. 18th	Tour	n/a (IU)	Jan	17	IU	0
RT	#69779: tour for Vice Chancellor for Research student group	Tour	n/a (IU)	Jan	44	K-12	23
RT	#68635: AVL tour for Student IT Ambassadors Jan 27th 4pm	Tour	n/a (IU)	Jan	9	IU	2
RT	#69999: Impromptu Tour for UITS staff	Tour	n/a (IU)	Jan	8	IU	0
RT	#70212: Microsoft tour	Tour	n/a (IU)	Feb	3	Bus	1
RT	#71751: Present 3D production at Indiana Filmmakers Network Indy meeting	Tour	n/a (IU)	Feb	55	Lay	0
RT	#72089: Tour for Brian Benedict's N299 class	Tour	n/a (IU)	Feb	15	IU	0
RT	#72321: IQ-wall tour for Univ. of Kentucky visitors	Tour	n/a (IU)	Mar	12	Lay	0
RT	#72330: Basketball on the IQ-wall	Tour	n/a (IU)	Mar	10	IU	0

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	#72368: Host staff wanting to see the IU basketball game on the IQ-wall	Tour	n/a (IU)	Mar	6	IU	0
RT	#72178: tour for King Mongkut's Institute of Technology	Tour	n/a (IU)	Mar	20	IU	0
RT	#72209: Tour for High School Teachers (Computer Science)	Tour	n/a (IU)	Mar	6	K-12	0
RT	#71912: tour for Sun Yat-Sen University Delegation	Tour	n/a (IU)	Mar	31	Bus	0
RT	#73659: EOT: Career Shadow Tour for Pike K-12 Student	Tour	n/a (IU)	Mar	4	K-12	2
RT	73654 Quick tour for new Communications Staff	Tour	n/a (IU)	Mar	1	IU	0
RT	#72208: Tour for International Peer Mentoring Program March 23rd	Tour	n/a (IU)	Mar	9	IU	0
RT	#74502: Zheng CS Undergrad Tour April 10th	Tour	n/a (IU)	Apr	26	IU	2
RT	#74739 (Tour for Polly's N220 Media Programming class)	Tour	n/a (IU)	Apr	11	IU	0
RT	#74694 (Tour for IUPUI Admissions Reps Mon April 16th)	Tour	n/a (IU)	Apr	7	IU	0
RT	#69869: SLIS InfoVis Class	Tour	n/a (IU)	Apr	10	IU	1
RT	#74676 (Tour for high school students from George Washington High)	Tour	n/a (IU)	Apr	60	K-12	28
RT	#75986: EOT: MICI-AHEC Tours	Tour	n/a (IU)	Apr	14	K-12	12

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	#69510: Tours for Prospective informatics students.	Tour	n/a (IU)	Apr	72	Lay	6
RT	#73614: Digital Connectors Field Trip April 23rd 3:30pm-4:30pm	Tour	n/a (IU)	Apr	14	K-12	12
RT	#75950: EOT: Tech 104 Class Tour	Tour	n/a (IU)	Apr	19	IU	4
RT	#76030 Project: Jon Racek Interior Design Class Spring 2012	Tour	n/a (IU)	Apr	14	IU	0
RT	#76733: Tour of CIB IQ-wall for Rotary Club	Tour	n/a (IU)	May	23	Lay	0
RT	#68628: IUPUI Math Dept. EOT event in May 2012	Tour	n/a (IU)	May	69	K-12	5
RT	#76492 (EDUCAUSE Security Conference Tours)	Tour	EDUCAUSE Security Conf.	May	62	Bus	7
RT	#76699: Tour for Will Potter from Herron School of Fine Art May 17th	Tour	n/a (IU)	May	2	IU	0
RT	Research File System (RFS) Training	Training for IU Researchers	IUB	May	20	IU	0
RT	Research File System (RFS) Training	Training for IU Researchers	IUPUI	May	20	IU	0
RT	IUPUI Research Day	Table on RT Services	IUPUI	Apr	200	IU	50
RT	Lustre User Group Meeting	User Meeting	Austin, TX	Apr	200	Technical	25
RT	Tour for University College Academic Advising staff	Tour	IU	Jun, 2012	28	IU	4
RT	Nanotechnology Discovery Academy Summer Program	Tour	IU	Jun	20	K-12	6
RT	Game On! Summer Workshop Tour June 14th 12pm	Tour	IU	Jun	22	K-12	4
RT	Game On! Summer Workshop Tour June 19th 11:30am	Tour	IU	Jun	29	K-12	6

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Tour for GIS NEH Institute	Tour	IU	Jun	25	K-12	-
RT	Tour for New Covenant Church June 21 at 11am.	Tour	IU	Jun	13	K-12	18
RT	MEAP Tour Sessions June 22nd	Tour	IU	Jun	34	K-12	15
RT	Tour LSAMP Summer Field Trip June 22nd 11:45am	Tour	IU	Jun	16	IU	6
RT	Girls Inc and Nursing tour	Tour	IU	Jun	55	IU	39
RT	Tour for IUPUI Nanotechnology Discovery Academy Summer Program	Tour	IU	Jun	22	K-12	12
RT	Web Design Summer Workshop Tour June 28th 11:30am	Tour	IU	Jun	11	K-12	-
RT	Tour for Matt Farmer (prospective Student)	Tour	IU	Jun	2	K-12	-
RT	Tour for new staff members	Tour	IU	Jul	2	IU	-
RT	Wheeler and Guest Tour	Tour	IU	Jul	6	Bus	2
RT	InCentre Tours	Tour	IU	Jul	12	IU	2
RT	Tour for Photoshop Summer Camp	Tour	IU	Jul	11	K-12	4
RT	Nanotech Instructor Tours	Tour	IU	Jul	15	K-12	-
RT	Tour for Remy and UITS Colleagues	Tour	IU	Jul	5	Bus	-
RT	#STEM Harris Summer Camp Bridge Building activities and tour.	Tour	IU	Jul	76	K-12	73
RT	Tour for Photoshop summer camp students & parents	Tour	IU	Jul	9	Lay	2
RT	Summer Workshop Tour JULY 26th 12pm	Tour	IU	Jul	9	K-12	2
RT	Tour for middle/high school students July 26th	Tour	IU	Jul	18	K-12	18
RT	Tour for Ian McIntosh's Informatics VIP	Tour	IU	Aug	2	Bus	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Tour for Beth Hagenjos group Aug. 17th 1:30pm	Tour	IU	Aug	4	Lay	-
RT	Tour for Informatics Girls Inc. Aug. 27th 1:30pm	Tour	IU	Aug	2	Bus	1
RT	Tour for Baker MAS Programming Class Sept. 12th	Tour	IU	Sep	9	IU	-
RT	Regional CIOs and Executive Director tour on 9/13	Tour	IU	Sep	9	IU	-
RT	Tour for 75 High School Counselors 11am-noon Sept. 17th	Tour	IU	Sep	69	K-12	12
RT	Technology Talk for N100 Informatics Defazio Class	Tour	IU	Sep	94	IU	23
RT	Tour for Dr. Bolchini's Informatics Class	Tour	IU	Sep	20	IU	-
RT	Honda on Site Demos	Tour	IU	Sep	2	K-12	2
RT	OVPIIT Emergency Management and Continuity Conference	Tour	IU	Oct	200	IU	-
RT	State of the University address on the IQ-Wall	Tour	IU	Oct	12	IU	-
RT	InCNTRE reception tours during PlugFest on 10/10	Tour	IU	Oct	51	Bus	28
RT	Tour for International Students Oct 19th 11am	Tour	IU	Oct	3	IU	-
RT	JagDay Tour Requests	Tour	IU	Oct	29	Lay	-
RT	Tour for Group Study Exchange Nov. 9th 9am Sarah Hook	Tour	IU	Nov	7	Bus	1
RT	Lykins Digital Immersive Art Presentation	Tour	IU	Nov	11	IU	1
RT	Mackay Graduate Students Tour	Tour	IU	Nov	15	IU	2

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Dr Peters School of Music Demo Tour	Tour	IU	Nov	12	IU	2
RT	Tour for School of Liberal Arts and Vietnam Guests	Tour	IU	Nov	40	IU	-
RT	Student Job Shadow - Adam Glasscock	Tour	IU	Nov	1	IU	-
RT	Celebrate Science Indiana	Annual STEM event - sponsored by Indiana Governor's Office.	Indiana State Fairgrounds, Indianapolis, IN	Oct	2,500	K-12	-
RT	STEAM Innovation Fair at Conner Prairie	Annual STEAM Innovation Fair at Conner Prairie focuses on historic innovations and current innovations in science, technology, engineering, arts and math.	Conner Prairie -Fishers, IN	Sep	4,260	Lay	-
RT	IUPUI New Faculty Orientation	New faculty orientation at IUPUI campus - to orient faculty to various resources available on campus.	IUPUI New Faculty Orientation/IUPUI Campus	Aug	100	IU	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	XSEDE12 Conference	XSEDE12 Conference showcased the discoveries, innovations, and achievements of those who use, build, and support XSEDE resources and other cyberinfrastructure resources around the world, creating a forum for discussion of current needs and future plans among researchers, students, XSEDE staff, and NSF representatives.	XSEDE12 Conference, Chicago, IL	Jul	580	Technical	-
RT	OVPIT Statewide Conference	Annual conference for UITS staff providing an overview of UITS services and research and cyberinfrastructure centers.	OVPIT Annual Statewide Conference, Bloomington, IN	Sep	600	IU	-
RT	Minority Engineering Advancement Program	Annual STEM event sponsored by the School of Engineering and Technology focusing on engagement of middle school age minority students.	MEAP, IUPUI campus ET121	Jul	65	K-12	54

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Indiana CTSI Annual Meeting - Poster Session	Annual Meeting is a conference of all members of the Indiana Clinical and Translational Sciences Institute. The CTSI's mission is to foster collaborative translational science and research at Indiana University, Notre Dame, and Purdue.	Indiana CTSI Annual Meeting/ Indianapolis, Indiana	Aug	50	Technical	-
RT	Developing Science Gateways using Apache Airavata AP	The tutorial was based on Apache Airavata, a software toolkit to build science gateways. Airavata provides features to compose, manage, execute, and monitor small to large-scale applications and workflows on computational resources ranging from local clusters to national grids such as XSEDE and computing clouds such as Amazon Elastic Compute Cloud.	XSEDE12 Conference, Chicago, IL	Jul	24	Technical	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Hands-on Tutorial for Building Science Gateway Applications on Cyberinfrastructure	Science gateway hands on. Bridging cyberinfrastructure (CI) and domain science communities through online problem-solving environment that provides usable Web- and/or desktop-based gateway applications to community users.	XSEDE12 Conference, Chicago, IL	Jul	24	Technical	-
RT	SDSC Summer Institute Science Gateways Tutorial	Hands on practice on building a science gateway from reusable components. Insights into open community software development practice, use and contribution.	San Diego Supercomputing Center, San Diego, CA	Aug	24	Technical	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Smithsonian Institution Folklife Festival	The Smithsonian Folklife Festival is an international exposition of living cultural heritage annually produced outdoors on the National Mall of the United States in Washington, D.C., by the Smithsonian Institution's Center for Folklife and Cultural Heritage. It is an educational presentation that features community-based cultural exemplars.	Smithsonian Institution Folklife Festival 2012, Washington D.C.	Jun & Jul	6,000	Lay	-
RT	IUPUI Introductory Parallel Programming Workshop	Introduced users to parallel programming at IU. Included hands on training in OpenMP threads and MPI message passing.	IU	Sep	24	Technical	-
RT	IUB Introductory Parallel Programming Workshop	Introduced users to parallel programming at IU. Included hands on training in OpenMP threads and MPI message passing.	IU	Sep	18	Technical	-
RT	SC12	Annual Supercomputing Conference.	Salt Palace Convention Center, Salt Lake City, UT	Nov	5,000	Technical	2,000

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Discovering the World Through GIS	Annual GIS Day hosted informational booths and activities to showcase the exciting work that the Indiana community is doing with Geographic Information Systems (GIS).	GIS Day at Indiana University, Bloomington, IN	Nov	400	IU	100
RT	The Apache Software Foundation, Cyberinfrastructure, and Scientific Software: Beyond Open Source	Birds of a Feather session on open governance models for open source scientific and cyberinfrastructure software.	Supercomputing 2012-Salt Lake City, UT	Nov	25	Technical	-
RT	Intro to Open Science Grid	An introduction to the Open Science Grid and tools and facilities available to the research community.	IU	Sep & Nov	25	IU	-
RT	HPC Training	Tutorial for faculty, staff and students in high performance computing.	IU	Sep	30	IU	1
RT	RT Fair IUPUI	Workshop hosted by Research Technologies to educate IU about resources available to research community.	IU	Sep	5	IU	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	RT Fair , Informatics	Workshop hosted by Research Technologies to educate IU about resources available to research community.	IU	Sep	33	IU	-
RT	RFS Training Workshop (School of Nursing IUPUI)	Provide an overview of the Research File System (RFS) followed by hands-on training.	IU	Oct	23	IU	2
RT	RFS Training Workshop (IUB)	Provide an overview of the Research File System (RFS) followed by hands-on training.	OVPIT Annual Statewide Conference, Bloomington, IN	Sep	2	IU	-
RT	SDA Training Workshop (IUB)	Provide an overview of the Scholarly Data Archive (SDA) followed by hands-on training.	OVPIT Annual Statewide Conference, Bloomington, IN	Sep	2	IU	1
RT	File System Tutorial	Introduction to various file systems from local disk to high performance file systems like Lustre. Described basic commands to use with a file system and different usage for different kinds of file systems.	XSEDE Conference, Chicago IL	Jul	23	IU	-

Center/Lab/Group	EOT Event Title	Description	Conference Name/Location	Date(s)	Approximate # of Attendees	Audience Type	Under-represented Attendees*
RT	Data Preservation and Archive	Review of technical and administration issues surrounding data preservation and archive from physical media to data format.	InCNTRE Summer of Networking 2012	Jun	20	Technical	-
National Center for Genome Analysis Support							
NCGAS	Bioinformatics Support for Experimental Biologists	Training for IU Biology Faculty on NCGAS services	Jordan Hall, Indiana University	March 26, 2012	30	Faculty, Graduate Student	0
NCGAS	Data Management? I'm a Biologist	Presentation on technology services for research	Research Computing Day, U. of Florida	May 1, 2012	50	Faculty, Graduate Student	0
NCGAS	Designing RNA-Seq Experiments	Training on RNA sequencing software	Daphnia Genomics Jamboree, Indiana University	May22, 2012	22	Faculty researchers	0
NCGAS	National Infrastructure for High Speed Data	Presentation on NCGAS national infrastructure	Bio-IT World	April 25, 2012	100	Researchers , Industry	0
NCGAS	Careers in Computing Science	Presentation	Clark State University	09/27/12	22	Undergraduate	4
NCGAS	Galaxy Workshop at IU Bloomington	To train biologists to use Galaxy tools for genomics	Galaxy Workshop	10/19/12	111	Graduate Students and Faculty	
NCGAS	RNA-Seq Workshop at the World Genome Data Analysis Summit	Train biologists to use Trinity and other tools for RNA Seq analysis	World Genome Data Analysis Summit	11/26/12	8	Faculty Researchers	