MICHIGAN STATE UNIVERSITY | Institute for Cyber-Enabled Research

iCER Monthly Bulletin

January 2015

HPCC Celebrates 10th Anniversary

The High Performance Computing Center (HPCC), within the Institute for Cyber-Enabled Research (iCER), is celebrating its 10th anniversary. In 2005, the HPCC was formed via a grassroots effort by a coterie of faculty at MSU with a strong interest in computational sciences. The HPCC facility was established to solidify the existence of high performance computing (HPC) at MSU and led to the formation of iCER in 2009. The HPCC has grown steadily in size, compute power, and staff. The accomplished and skilled support group works tirelessly behind the scenes maintaining and updating our hardware palette.

In 2015, the HPCC will begin plans to acquire a new machine that will singularly increase our available compute power at MSU. With MSU's continuing commitment to iCER, the HPCC, the creation of a new department focused on the computational sciences, and a new Datacenter on the horizon, the future of HPC at MSU is bright.
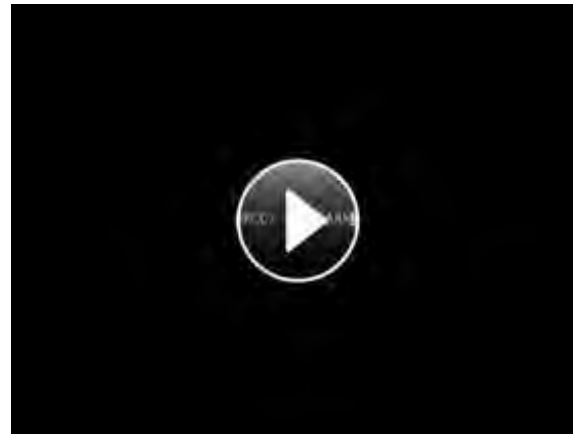
Watch the HPCC journey to hear from HPCC users, iCER staff, and President Simon as they reflect on the past 10 years and look

Dr. Dirk Colbry takes on new position

Please join us in wishing Dr. Dirk Colbry, Director of the High Performance Computing Center, well

forward to the future of HPC at MSU.

Upcoming Trainings
Details of upcoming trainings may be seen by clicking the title of the workshop or by visiting **icer.msu.edu/events**

1/23 – Python HPC Webcast

1/26 – Vim-R Lecture

1/27 - 1/29 – Software Carpentry

1/28 – Vim-R Tutorial

2/12 – Introduction to HPCC

2/19 – Unit Testing

2/24 – Introduction to HPCC for Economists

2/26 – Advanced Topics in HPCC: Parallel Computing Using HPCC

Open Research Opportunities

National Data Science Bowl

Blue Waters Graduate Fellowship

icer.msu.edu   **517-353-9309**   **icer@msu.edu**

FEB. 2015
IN THIS NEWSLETTER:

- System-wide reservation
- Issues with scheduler
- Simulations of Galaxy Formations and Evolution with Brian O'Shea
- Upcoming trainings
- Research opportunities

Emergency Cold Weather Alert – System-wide reservation

As a significant fraction of the HPCC's cooling system can not operate at -10º F, we have put a system-wide reservation in place between 10PM on February 12th – 10AM on February 13th and from 9PM on February 14th – 11AM on February 15th. No jobs that would overlap these time periods will be started, but running jobs will continue to run and new jobs that will not overlap these time periods will be started. More information can be found on the wiki.

Issues with the scheduler and resource manager

Currently, the HPCC scheduler is experiencing a problem where it occasionally becomes unresponsive and is unable to recover without manual intervention. Practically, what this means for users is that interactive commands like qstat and qsub may time out for short periods of time. Jobs may also take longer than normal to schedule. On Tuesday, February 10th, we met with the scheduler vendor and have been able to capture detailed diagnostic information. We are addressing the issue as quickly as possible. More information and updates can be found on the wiki.

Simulations of Galaxy Formations and Evolution – Brian O'Shea

Theoretical astrophysics professor Brian O'Shea, from the Department of Physics and Astronomy and Lyman Briggs College at Michigan State University, is interested in the formation of cosmological structure in the universe – in particular, how galaxies form, evolve, and interact with their surroundings. Hear how he studies these phenomena in the full article and video.

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events.

2/19 – Unit Testing

2/24 – Intro to HPCC for Economists

2/24-2/25 – RNA-Sequencing Tools

2/26 – Advanced Topics in HPCC

3/3 – Introduction to Command Line

3/4 – XSEDE MPI Workshop

3/5 – Advanced Shell Scripting

3/18 – Introduction to HPCC

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu and

Research Opportunities

we will get the word out. All submissions will be posted at the discretion of the iCER Communication Coordinator.

Argonne National Laboratory

June 15-18, 2015

ICER
MONTHLY BULLETIN

MAR. 2015
IN THIS NEWSLETTER:

- Cooling issues FAQ
- We're hiring! iCER seeks an Associate Director
- Upcoming trainings
- Research opportunities

Data Center Cooling Issues FAQ

As a significant fraction of the HPCC's cooling system can not operate at -10º F, we have needed to put system-wide reservations in place over the last month. In an effort to keep our users as informed as possible, we have put together a list of frequently asked questions covering topics from what exactly is happening to running at reduced capacity. If you would like to learn more about this, we encourage you to visit our FAQ post.

We're in search of great candidates!

We are currently looking to fill the position of Associate Director. The Associate Director will participate in the support of advanced computation and research activities across the MSU campus by overseeing the delivery of timely training and individual support to academic staff engaged in HPC activities at MSU by the Domain Expert staff. This individual will also oversee the development and submission of grant proposals relevant to iCER's overall mission. Ideal candidates should have and earned Ph.D. in computer science or closely related computational area. For complete details or to apply, please visit jobs.msu.edu and search job posting #0942.

Upcoming Trainings

Research Opportunities

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events.

3/18 – Introduction to HPCC

3/19 – Intro to Python: The Basics

3/24-3/27 – Computer-aided Biologics Design and Protein Engineering

3/24 – Reproducible Computational Analysis- How to start a new project

4/1 – Introduction to Command Line

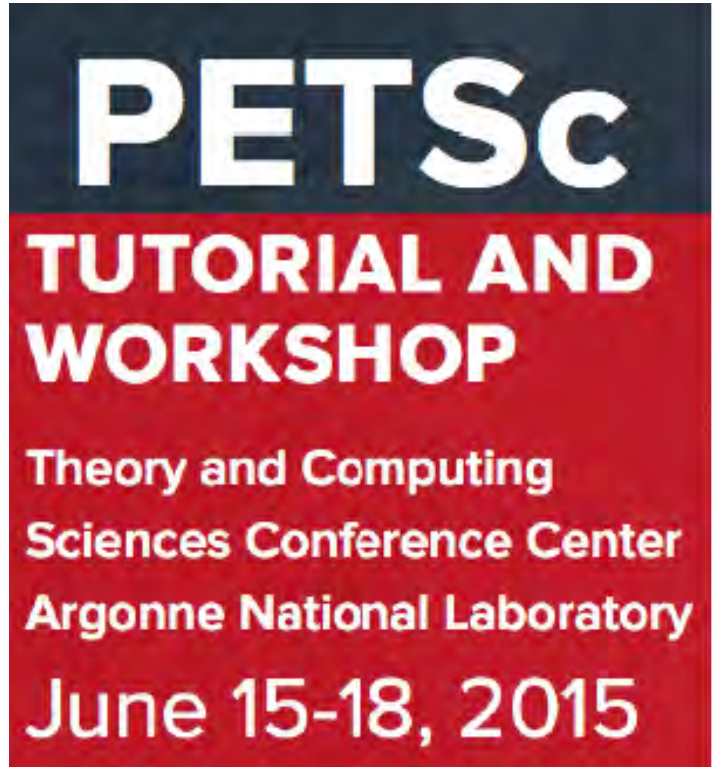4/7 – Job Scheduling & Monitoring Tricks

4/16 – Debugging Parallel & Serial Programs

REGISTER NOW >

Cyberinfrastructure (CI) Days Training 2015

Extreme Scale Computing
TRAINING PROGRAM

PETSc TUTORIAL AND WORKSHOP

Theory and Computing
Sciences Conference Center
Argonne National Laboratory

June 15-18, 2015

BLUE WATERS
Student Internship Program

Tell us what HPC faculty workshops you'd like to see offered during CI Days 2015 and/or vote for one or more of the suggested workshops. [Now accepting workshop suggestions!](#)

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu and we will get the word out. *All submissions will be posted at the discretion of the iCER Communication Coordinator.*

International HPC Summer School 2015

Bioinformatics & Biodiversity

XSEDE
Extreme Science and Engineering Discovery Environment

XSEDE Seeking Partner Institutions to Offer Course in Engineering Parallel Computing

APR. 2015

IN THIS NEWSLETTER:

- Lustre Scratch File System Maintenance
- Applications of Pattern Recognition with Anil Jain
- iCER is Hiring!
- Upcoming trainings
- Research opportunities

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MONTHLY BULLETIN

Lustre Scratch File System Maintenance – April 22

On Wednesday April 22 at 8AM, we will be taking a one day outage on the Lustre file system to upgrade the file system software and address the ongoing problem with our current Lustre appliance. We have negotiated a support contract with Intel, the primary developer of Lustre, and will be working with them closely through this upgrade.

During this upgrade /mnt/lustre_scratch_2012, /mnt/ls12, and /mnt/scratch will not be available, and no batch jobs will be run. Gateway and development nodes should be available during this window, but there may be short periods of time when some or all of the gateway and development nodes are unavailable. Home directories and research spaces will remain available during this maintenance outage.

We do not anticipate there will be any data loss; safeguarding user data is our highest concern. However, users should be aware that scratch is designed for *temporary storage* and *not backed up*. All software upgrades involve risk, and with this upgrade there is a slight risk that some or all data on scratch could be lost. If there is critical data on scratch, please let us know so we can work with you to develop a plan to address this.

Further updates will be provided via the Lustre Scratch File System Maintenance blog post.

If you have any questions or concerns, please feel free to <u>submit a ticket</u> so we may contact you.

Applications of Pattern Recognition with Anil Jain

Over the past 40 years, University Distinguished Professor Anil Jain has been working on design and applications of pattern recognition systems. Currently, Jain and his students are devoting their efforts towards three challenging problems: Automatic fingerprint recognition, automatic face recognition and large scale data clustering. ***Full article***.

We're in search of great candidates!

We are currently looking to fill the position of Associate Director. The Associate Director will participate in the support of advanced computation and research activities across the MSU campus by overseeing the delivery of timely training and individual support to academic staff engaged in HPC activities at MSU by the Domain Expert staff. This individual will also oversee the development and submission of grant proposals relevant to iCER's overall mission. Ideal candidates should have and earned Ph.D. in computer science or closely related computational area. For complete details or to apply, please visit jobs.msu.edu and search job posting #0942.

Upcoming Trainings   ## Research Opportunities

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events**.**

5/12 – Introduction to HPCC

5/13 – Intro to Python

5/27-5/28 – Train the Trainers

5/30-5/31 – Data Carpentry & Software Carpentry Workshops

6/4 – CDT 101: Parallel Programming & Optimization with Intel Xeon Phi Coprocessors

6/5 – CDT 102: Parallel Programming & Optimization with Intel Xeon Phi Coprocessors

8/17-8/21 – Supercomputing for Everyone Series: Performance Tuning Summer School (VSCSE)

8/24-8/25 – Science Visualization (VSCSE)

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu *and we will get the word out.* All submissions will be posted at the discretion of the iCER Communication Coordinator.
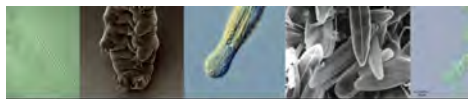
Bioinformatics & Biodiversity

Undergraduate Workshop, July 27–30, 2015 in Durham, NH. Deadline to register is April 13. Full details.

OSG User School , July 27 – 31, 2015 in Madison, WI now accepting applications. Deadline to apply is May 1. Full details.

SC15 Student Volunteers Program now accepting applications. Deadline to apply is June 1. Full details.

MAY 2015
IN THIS NEWSLETTER:

- Installed Software
- CMSE/iCER Seminar
- Science Festival Recap
- Upcoming trainings

2,000+ Installed Software Packages

The HPCC has an extensive list of over 2,000 installed software packages available for use by MSU researchers. Most software titles on MSU's HPC system do not have special licensing agreements. However, some software titles are free for academic use only after researchers have read, understood, and agreed to end-user licensing. To see complete details and gain access to software, please view our Installed Software page.

CMSE/iCER Seminar Series – Speakers Wanted

As you know, MSU is launching a new Department of Computational Mathematics, Science and Engineering (CMSE). As part of this initiative, the Institute for Cyber-Enabled Research and CMSE are jointly launching a colloquium series, which will start in September and will be held on Tuesdays at 4 p.m. in the ICER/BEACON seminar room. This colloquium series will feature speakers whose research expertise is algorithms or applications relating to computational and data science, and will be accessible to a general computationally-oriented audience.

We are currently soliciting speakers for this seminar series and would appreciate your help finding a diverse set of individuals! Please send speaker suggestions to Brian O'Shea, with the name, affiliation, and contact information of the potential invitees, as well as a brief description of their area of research expertise. Using these recommendations, it will ensure that the speakers reflect the range of interests of MSU's computational and data science community. We are looking forward to kicking off this series!

iCER Welcomes School Groups at the 2015 Science Festival

Left: Two Science Festival participants from Mt. Hope STEAM work together to deconstruct a hard drive.

Year after year, the MSU Science Festival proves to be one of the most exciting outreach events that iCER takes part in. Providing a place for hands-on activities, demonstrations, and discussions centered around the topic of computation allows these young minds to explore, experience new things, and leave feeling inspired.

This year iCER had the pleasure of hosting nearly 100 students between the four schools that were scheduled to attend our tour site. Our goal is to offer an exciting and educational experience... Continue to full article here.

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events**.**

5/12 – Introduction to HPCC

5/13 – Intro to Python

5/27-5/28 – Train the Trainers

5/30-5/31 – Data Carpentry & Software Carpentry Workshops

Parallel Programming and Optimization with Intel® Xeon Phi™ Coprocessors

When: June 4 & 5, 2015
Where: Biomedical & Physical Sciences Building at MSU, Rm. 1440
This workshop is open to all and is free of charge
Full details and registration

Carpentry Workshops

[6/4 – CDT 101: Parallel Programming & Optimization with Intel Xeon Phi Coprocessors](#)

[6/5 – CDT 102: Parallel Programming & Optimization with Intel Xeon Phi Coprocessors](#)

[6/16-6/19 – XSEDE HPC Monthly Workshop: Summer Bootcamp](#)

[6/23 – Intro to HPC at MSU](#)

[8/17-8/21 – Supercomputing for Everyone Series: Performance Tuning Summer School (VSCSE)](#)

[8/24-8/25 – Science Visualization (VSCSE)](#)

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu *and we will get the word out. All submissions will be posted at the discretion of the iCER Communication Coordinator.*

HPC Monthly Workshop Summer Boot Camp

June 16-19, 2015 @ MSU

Full Details & Registration

VSCSE Summer School

| August 17–21 | Supercomputing for Everyone Series: Performance Tuning Summer School |
| August 24–25 | Science Visualization |

Each workshop fee is $50. Lunch and refreshments provided!

Michigan State University Biomedical & Physical Sciences Building Room 1455(A)

Full Details & Registration

SC15 Student Volunteers Program now accepting applications. Deadline to apply is June 1. [Full details](#).
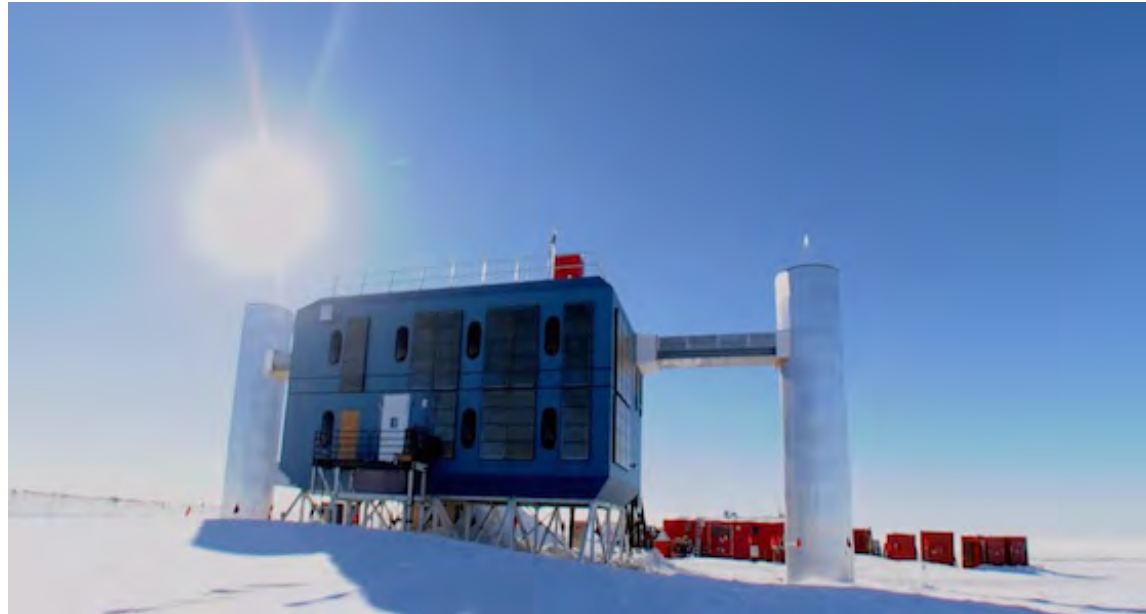
JUNE 2015

IN THIS NEWSLETTER:

- IceCube Neutrino Observatory Feature

- 2016 Compute Cluster

- MSU Coding Group

- Upcoming Trainings

ICER

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MSU IceCube Neutrino Observatory Group

Below: The IceCube Lab located in the South Pole. Click the image to play the full video feature.

Associate Professor Tyce DeYoung, from the Department of Physics and Astronomy at Michigan State

University, conducts research in particle astrophysics – the observation of high energy particles from space, with the twin goals of understanding how and where they are produced and better understanding the fundamental properties of the particles themselves. He plays a leading role in the IceCube Neutrino Observatory, a billion-ton detector of nearly massless subatomic particles called neutrinos located beneath the South Pole... Continue to full article here.

Upcoming 2016 Compute Cluster

We are preparing for the purchase of the 2016 compute cluster. As part of this process, we will be hosting forums across campus to discuss our user community's needs; we will announce dates and times of these meetings in July. We are also meeting with individual users and groups who would want to provide input on the compute nodes that are purchased. If you are interested in participating in these one-on-one discussions or investing in this new cluster, please let us know by visiting our contact form.

MSU Coding Group

Join the next MSU Coding Group meeting to talk about software development techniques, new programming languages, algorithm design, and coding issues. Meetings are a combination of informal talks on relevant topics followed by coding. Find the MSU Coding Group every Monday in the Biomedical & Physical Sciences Building in Room 1455A from 3pm–4pm. More Information.

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events.

6/5 – CDT 102: Parallel Programming & Optimization with Intel Xeon Phi Coprocessors

6/16-6/19 – XSEDE HPC Monthly Workshop: Summer Bootcamp

6/23 – Intro to HPC at MSU

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AUG. 2015

IN THIS NEWSLETTER:

■ New Scratch Storage Server
■ HPCC Outage-August 11th
■ CI Forum-Registration Open!
■ Issues With Scheduler
■ Upcoming Trainings

ICER
MONTHLY BULLETIN

Installation of New Scratch Storage Server

On Wednesday, August 5, 2015, the HPCC accepted the delivery of the new scratch storage server. We are currently working on installing and testing the hardware. The team anticipates that the new storage should be available for beta-testing after the August 11th maintenance outage. During this beta-testing period, the HPCC may be reaching out to specific users with some historically problematic workloads to stress-test the new filesystem. All user data on the new storage is now validated with checksums during active use as well as when it is at rest on-disk.

- This system houses approximately 1.9 Petabytes of storage space.
- It consists of 480 hard drives, and 21 high-speed, solid state disks (SSDs).
- The entire solution provides much greater data security than the previous scratch filesystem at the HPCC.

At peak speed, the new system is expected to be able to serve data to the cluster at 20 gigabytes per second, or greater, of IO throughput.

Reminder! Scheduled HPCC Outage - August 11 from 8am – 5pm

All HPCC systems will be down on August 11th, 2015 from 8 AM to 5 PM for system upgrades that will improve performance and stability.

- We'll be upgrading our core network switches and firewall's operating systems and updating the layout to improve performance and prepare for the new 2016 cluster.

- We'll be updating the kernel and some support libraries on the clusters to address some stability and performance issues.

More information about these changes and their potential impact on users will be posted on the **HPCC Wiki** prior to the outage.

We invite you to attend the fourth annual Cyberinfrastrucutre (CI) Forum, formerly known as CI Days.

This event will be held on October 22, 2015 at the MSU Union Ballroom. This free event features:

- Special industry guest speakers

- Interactive workshops on a variety of topics

- Poster competition with the chance to win cash prizes!

- Resource fair featuring resources available to researchers

- Networking opportunities/evening social hour

Join us as we celebrate CI on October 22, 2015!

Recent Issues With HPCC Logins and Scheduler

Many users have been seeing a series of seemingly unrelated issues, including:

- Not being able to log into gateway
- Jobs not starting/ending as expected
- Extremely slow prompts for logins
- Extremely slow responses from file browsing (e.g. filezilla or cyberduck)

We have been able to trace at least one cause to all of the above issues to heavy traffic to our network storage devices. This can have a cascading effect resulting in the scheduling system (Moab/Torque) becoming unresponsive, causing the unusual behavior we are seeing in the scheduler. Complete details and options to resolve may be found on the **full announcement post here**.

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at
icer.msu.edu/events**.**

August 17 - 21, 2015
Supercomputing for Everyone Series:
Performance Tuning Summer School
(VSCSE)

August 20 - 21, 2015
Software Carpentry

August 24 - 25, 2015
Science Visualization (VSCSE)

September 8, 2015
Research Computing at iCER

September 10, 2015
Introduction to HPCC

September 15-17, 2015
Software Carpentry

September 24, 2015
Advanced Topics in HPCC

September 29, 2015
Intro to SQL and Relational Databases

It's not too late to save your seat!
August 17-21, 2015 Registration
August 24-25, 2015 Registration

Don't miss the excitement of the 4th annual **CI Forum** on Oct. 22, 2015!

REGISTER NOW ▶

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu *and we will get the word out.* All submissions will be posted at the discretion of the iCER Communication Coordinator.

JUL. 2015
IN THIS NEWSLETTER:

- New website coming soon
- Scheduled HPCC outage
- Publications wanted
- MSU Coding Group
- Upcoming trainings

ICER
MONTHLY BULLETIN

Coming soon to a screen near you is

OUR NEW WEBSITE!

ICER is excited to announce that in Fall 2015, we will have a fresh new look with the release of our new website.

We hope to improve the experience with user-friendly navigation, updated information, new user services and more.

Get ready. Exciting things are on their way.

Scheduled HPCC Outage - August 11 from 8am – 5pm

All HPCC systems will be down on August 11th, 2015 from 8 AM to 5 PM for system upgrades that will improve performance and stability.

- We will be installing our new high performance scratch file system, greatly increasing performance, capacity, and reliability.

- We'll be upgrading our core network switches and firewall's operating systems and updating the

layout to improve performance and prepare for the new 2016 cluster.

- We'll be updating the kernel and some support libraries on the clusters to address some stability and performance issues.

More information about these changes and their potential impact on users will be posted on the **HPCC Wiki** prior to the outage.

Showcasing Publications

If you have benefited from iCER's resources, we would love to know about it! We will be focusing efforts on showcasing publications with recent iCER-related research at MSU. A record of publications with contributions from iCER resources that have been shared with us can be found on the **publications page** of our website. If you would like to submit your publication, please email icer@msu.edu.

MSU Coding Group

Join the next MSU Coding Group meeting to talk about software development techniques, new programming languages, algorithm design, and coding issues. Meetings are a combination of informal talks on relevant topics followed by coding. Find the MSU Coding Group every Monday in the Biomedical & Physical Sciences Building in Room 1455A from 3pm–4pm. **See the upcoming topics!**

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events**.**

8/4- Big Data Workshop

8/17-8/21 – Supercomputing for Everyone Series: Performance Tuning Summer School (VSCSE)

8/24-8/25 – Science Visualization (VSCSE)

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SEPT. 2015

IN THIS NEWSLETTER:

ICER
MONTHLY BULLETIN

- Forum - Registration Open!
- Fall 2015 Trainings
- Open Office Hours

iCER is currently looking to add an Information Technology Professional to our team. If you or someone you know is a potential candidate, we encourage you to apply. Applications must be submitted through Michigan State University Human Resources. For complete details or to apply, please visit jobs.msu.edu and search job posting #1926.

CYBERINFRASTRUCTURE FORUM
OCTOBER 22, 2015
REGISTRATION NOW OPEN!

We invite you to attend the fourth annual Cyberinfrastrucutre (CI) Forum, formerly known as CI Days. This event will be held on October 22, 2015 at the MSU Union Ballroom. This free event features:

- Special industry guest speakers

- Interactive workshops on a variety of topics

- Poster competition with the chance to win cash prizes!

- Resource fair featuring resources available to researchers

- Networking opportunities/evening social hour

Join us as we celebrate CI on October 22, 2015!

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at icer.msu.edu/events.

September 10, 2015
Introduction to HPCC

September 15-17, 2015
Software Carpentry

September 21-22, 2015
RNA-Sequencing Tools

September 22, 2015
Parallel Computing with MATLAB

September 22, 2015
Analyzing and Visualizing Data with MATLAB

September 24, 2015
Advanced Topics in HPCC

September 29, 2015
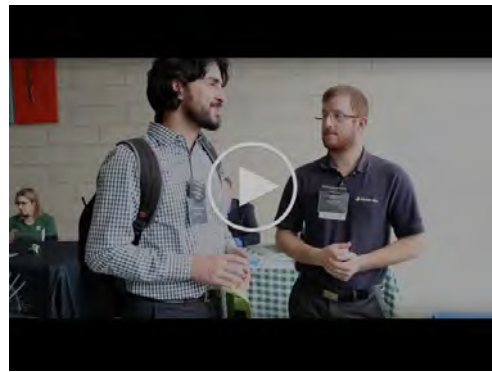Intro to SQL and Relational Databases

iCER welcomes you to our open office hour each **Monday and Thursday from 1pm – 2pm** to receive one on one help with computational based issues. You can find us in the Biomedical and Physical Sciences Building in Room 1440 ready to help!
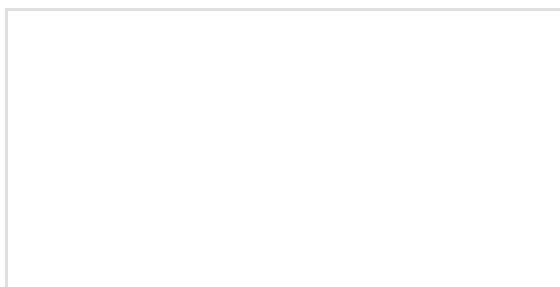
October 1, 2015
Genome Mapping and Variant Analysis

October 6, 2015
Introduction to Linux/Unix

October 13, 2015
Introduction to HPCC

REGISTER NOW ▶

Don't miss the excitement of the 4th annual **CI Forum** on Oct. 22, 2015!

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu *and we will get the word out.* All submissions will be posted at the discretion of the iCER Communication Coordinator.

OCT. 2015

IN THIS NEWSLETTER:

- CI Forum 2015!

ICER

MONTHLY BULLETIN

October 22
- BiCEP Welcomes New Director
- Upcoming Trainings

CYBERINFRASTRUCTURE FORUM
OCTOBER 22, 2015
REGISTRATION NOW OPEN!

We invite you to attend the 4th Annual Cyberinfrastructure (CI) Forum. This free event will be held Thursday, October 22 at the MSU Union Ballroom. The CI Forum will feature:

- Special industry guest speakers

- Interactive workshops on a variety of topics

- Poster competition with a chance to win cash prizes

- Resource fair

- Networking opportunities/evening social hour

Please register by Monday, October 19.
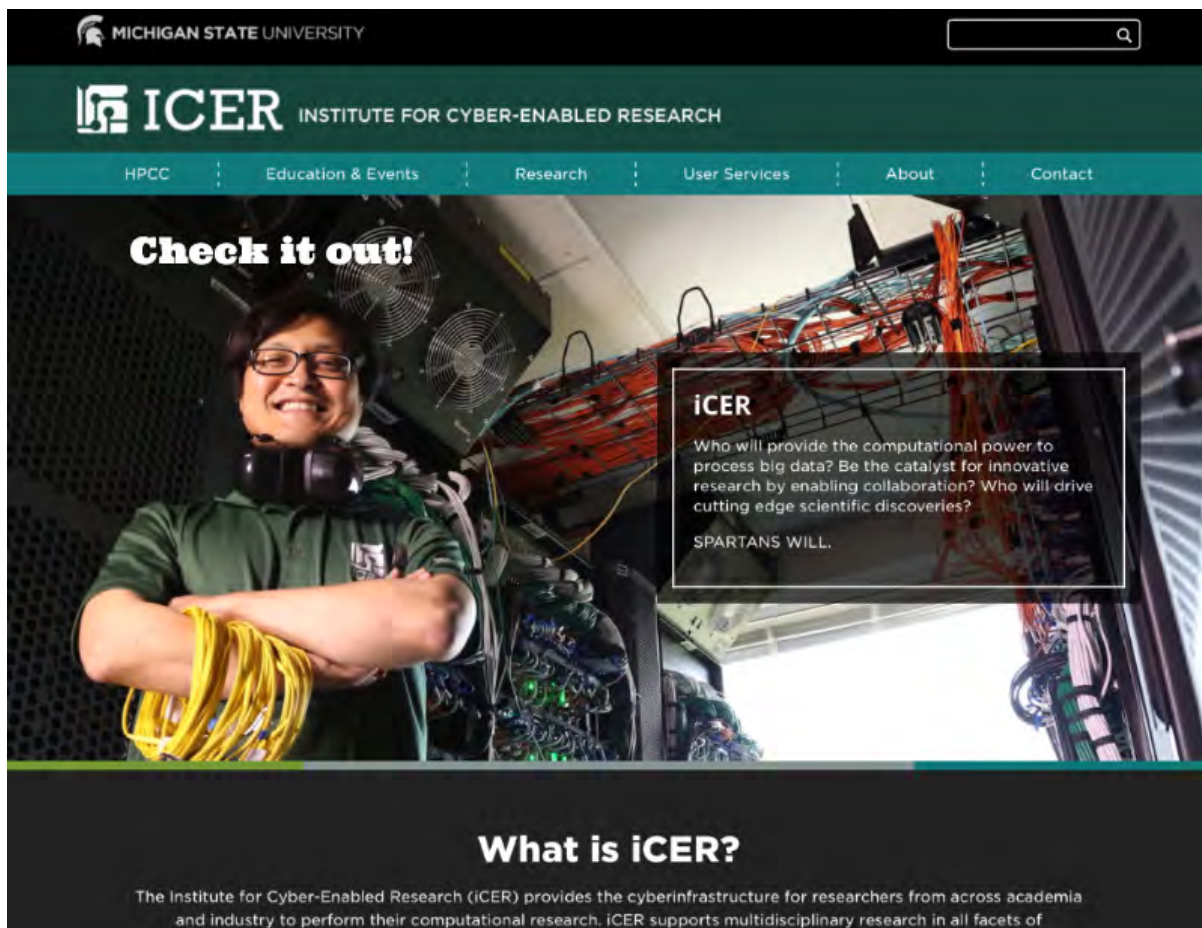
The new iCER website is live!

Upcoming Trainings

A complete list of upcoming workshops, details and registration can be seen at http://icer.msu.edu/upcoming-workshops.

October 17-18, 2015
Avida Software Carpentry Workshop

October 22, 2015
State of Art of Multi-Physics Computational Simulation

October 27, 2015
Beyond Excel: Enhancing Your Data Analysis with MATLAB

October 27, 2015
Financial Modeling and Economic Analysis with MATLAB

October 30, 2015

Dharanya Sampath announced as new

Director of BiCEP.

[Python HPC XSEDE Webinar Viewing Session](#)

November 10, 2015
[Introduction to Linux/Unix](#)

November 11, 2015
[Intermediate Shell Scripting](#)

November 12, 2015
[Introduction to HPCC](#)

CMSE graduate materials is now posted— in particular, a description of the new PhD program and how to apply. This can be found at the CMSE web page, https://cmse.msu.edu .

The PhD program info is at https://cmse.msu.edu/academics/graduate-program/phd-in-computational-mathematics-science-and-engineering/

iCER is currently looking to add a Research Specialist to our team. If you or someone you know is a potential candidate, we encourage you to apply. Applications must be submitted through Michigan State University Human Resources. For complete details or to apply, please

visit jobs.msu.edu and search job posting #2048.

iCER, in partnership with four other institutions, recieved a **$5 million grant from the National Science Foundation** to implement the Multi-Institutional Open Storage Research InfraStructure (MI-OSiRIS), providing high-speed infrastructure for scientists to access and share their research across the region with unprecedented ease. See (link to MSU today) for more information.

http://msutoday.msu.edu/news/2015/msu-nets-part-of-5m-big-data-grant-from-national-science-foundation/

iCER welcomes you to our open office hour each **Monday and Thursday from 1pm – 2pm** to receive one on one help with computational based issues. You can find us in the Biomedical and Physical Sciences Building in Room 1440 ready to help!

Special Office Hours
Office hours will be held at a special location on Thursday, October 22, 2015 due to the CI Forum. You can find our Research Consultants at the MSU Union, outside the Ballroom from 1– 2pm for any questions or help you may need. We hope to see you there! Regular office hours will resume Monday, October 26, 2015.

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? We would love to hear about it! Email us at icer@msu.edu and we will get the word out. All submissions will be posted at the discretion of the iCER Communication Coordinator.
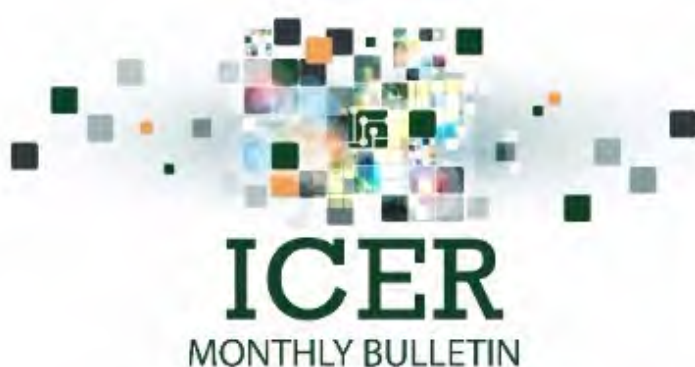
unsubscribe from this list   update subscription preferences

NOV. 2015
IN THIS NEWSLETTER:

- CI Forum 2015 wrap-up
- SC15 preview
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- And more!

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iCER represents MSU at SC15

This week, the iCER team is attending SC15 in Austin, Texas. We are sharing a booth with University of Michigan, and will be participating in multiple talks and presentations throughout the conference. This year's theme is "HPC Transforms," which we fully endorse and believe in.

Make sure to look for our tweets throughout the week (#icermsu) and check out our Facebook page, as we share many of the events in which MSU will be seen

and heard.

2015 CI Forum a Success

The [fourth annual CI Forum](#), held October 22 at the MSU Union, was a resounding success. Many subjects were covered in the intensive, one-day event, and more than 100 people attended — more than last year — which is a promising sign for the iCER program.

Among the highlights:

° Keynote speaker Craig Stewart shared Indiana University's journey into becoming a national-level HPC research center. Interestingly, several of the points along IU's path mirror MSU's experiences.

° The HPCC team gave two presentations: Current and In-Development HPCC Computational Resources (Andrew Keen) and Ongoing Developments and Advances in Future HPCC Technologies (Sharan Kalwani). They talked about how HPCC is exploring new technologies, and how the team is striving to become a leader in various areas of expertise, inclue ARM-based and OpenPOWER-based computing.

° A subject that popped up in several breakout sessions was the growing importance of Big Data and the HPCC's preparations to work within these emerging systems.

° The final keynote talk by Arthur Lupia, which focused on data access and research transparency, generated a lot of discussion. This kind of interest bodes well for the kind of audience participation we had hoped for.

Presentations have been posted and shared with the iCER community [here](#).

HPC Training at iCER

This has been an incredible fall for HPC training. iCER launched three new workshops: SQL & Relational Databases, Research Computing at iCER, and Genome Mapping & Variant Analysis. Monthly iCER workshops attracted more than 200 researchers — more than last year — and included graduate students (comprising 62 percent of attendees) and faculty/post-docs (25 percent).

The basic computational training facilitated by iCER's workshops is reaching traditional scientists at MSU. The majority of researchers registered for workshops were from the agricultural/biological sciences and natural resources domains (Fig. 1).
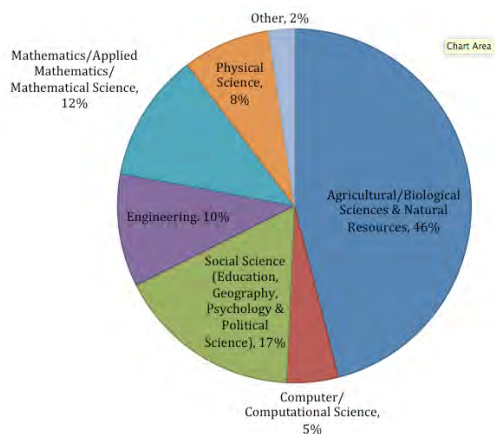

Figure1. Researchers Registered for iCER workshops beginning August 20, 2015 - October 30, 2015.

We've worked with faculty in both of these areas to develop and offer tailor-made workshops in addition to basic course

On Nov. 4, seven members of the iCER staff volunteered at City Rescue Mission Upscale Thrift. They spent the morning preparing merchandise for the floor and distributing clothing to the racks throughout the store.

Read the full story here.

Upcoming events:

Research Data Management Café

3-5 p.m. Monday, Nov. 23
Main Library, Green Room, Fourth Floor
This event is sponsored by the MSU Clinical and Translational Sciences Institute (CTSI), Biomedical Research Informatics Core (BRIC) and MSU Libraries. This discussion will include:
· Building a data management decision tree
· NIH thinking for data storage and sharing
· Treating data as an acquisition
No registration is necessary. For more information, click here.

One Hundred Years of Statistical Developments in Animal Breeding, presented by guest lecturer Dr. Daniel Gianola
2 p.m. Friday, Dec. 4
Molecular Plant Science Building, Auditorium Room 1200
Daniel Gianola, the Sewall Wright Professor of the Department of Animal Sciences and

offerings.

Additionally, training is reaching researchers early in their careers at MSU. Almost half of registrants identify themselves as "between 0-1 years" in their current academic role (graduate student, faculty/post doc, etc.) and nearly two-thirds have two years or less (Fig. 2).
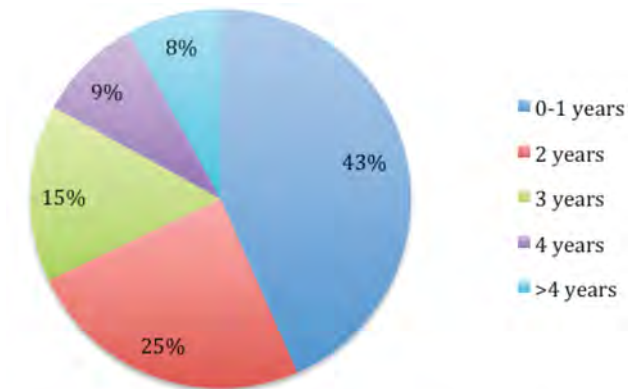

Figure 2. Time (in years) spent by workshop registrants in current academic role (grad., faculty/post doc etc.)

Notably, almost half of researchers registered for iCER workshops were not current HPCC users.

Initial feedback suggests that attendees value these services. Most respondents said the workshop they attended effectively equipped them with the information they needed to conduct research.
iCER Research Consultants find that those who attend these introductory classes have fewer questions and can get a quicker start on using the HPC for computation in their research (Fig. 3).
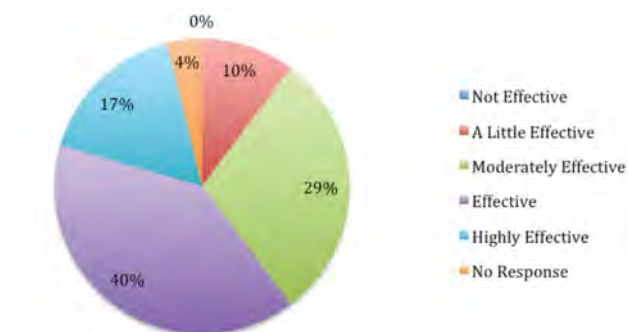

Figure 3. Respondents' self-assessment of the effectivenss of workshops attended in equipping them to conduct research.

Watch for our new "PC to HPC" series next spring, which is aimed at researchers who want to gain a practical understanding of

Department of Dairy Science at the University of Wisconsin, will talk about the future of big data as it relates to livestock, plant, and human genomic projects. Researchers whose fields of expertise relate to genomics and/or computation will gain insight from this presentation.
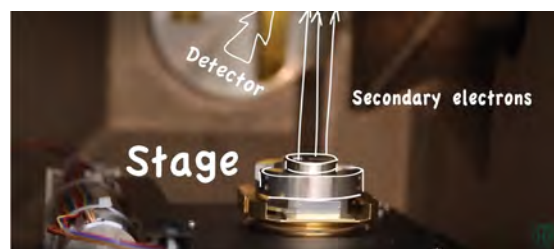
Event details and registration can be found here.

New research video!
We recently posted a video highlighting Dr. Andrew Christlieb's research. Dr. Christlieb studies and models plasma for a variety of applications, including processing computer chips. You can see the video here.
His research highlights can be seen here.

To further our understanding of MSU's high-performance computers, we recently sought the assistance of the Center for Advanced Microscopy to take a closer look at some of our computer chips. Electron Microscopist Carol Flegler put some of the HPC's chips and components under the
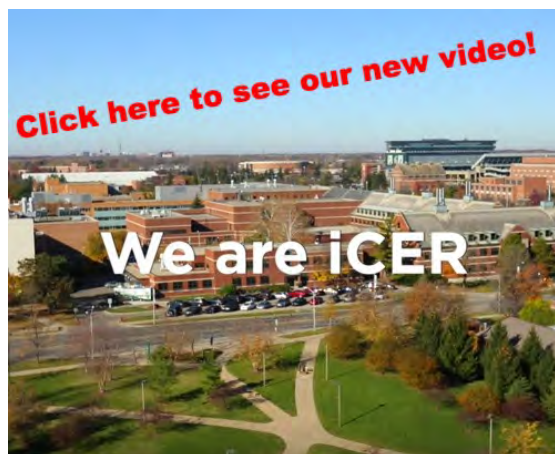
parallel computing concepts. This series of 90-minute talks provides an introduction to parallel computing concepts and algorithms through examples.

Have your say in the workshops iCER offers here.

lens of her department's most powerful examination tools. Click here to read the story.
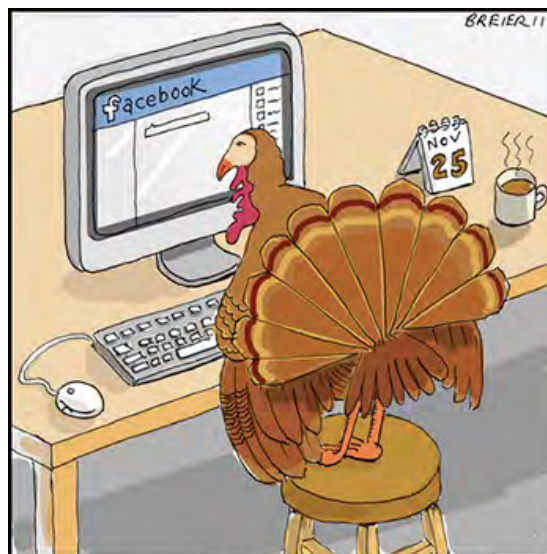

iCER is currently looking to add an Information Technologist to our team. If you or someone you know is a potential candidate, we encourage you to apply. Applications must be submitted through Michigan State University Human Resources.

For complete details or to apply, please visit jobs.msu.edu and search job posting #1926.

"500 friends and no one's available to chat? No new posts today? How odd...."

iCER welcomes you to our open office hour each **Monday and Thursday from 1 p.m. – 2 p.m.** to receive one-on-one help with computational based issues. You can find us in the Biomedical and Physical Sciences Building in Room 1440 ready to help!

Special Office Hours
There will be no office hours Thursday–Friday, Nov. 26–27, due to the Thanksgiving holiday. Regular hours will resume Monday, Nov. 30.

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? Email us at icer@msu.edu and we will get the word out. All submissions will be posted at the discretion of the iCER Communications Coordinator.

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DEC. 2015

IN THIS NEWSLETTER:

- SC15 Wrap-up
- Upcoming Trainings
- Holiday Office Hours
- New research highlight
- And more!

ICER
MONTHLY BULLETIN

A Message from the HPCC Director

The annual Supercomputing Conference Series is the premier event for all things HPC-related. This year's event in Austin, Texas, called SC15, was another highly successful event for MSU's iCER team. As we did last year, iCER had a joint booth with University of Michigan's Advanced Research Computing (ARC) team, which elevated our visibility, and showed the other presenters that even rivals can set aside their differences in the name of science. This year broke the all-time record for attendance, with 12,868 attendees — and a good portion of them visited us. iCER has gained a lot more visibility, as was evidenced by the feedback left for us by the various visitors. We held six well-received presentations, including one on the long-term plan and vision for MSU's research efforts using HPC.

We also laid out the major initiatives of our new department, Computational Mathematics, Science and Engineering (CSME). It was established earlier this year to advance the goals of producing trained graduates and conducting research using the new paradigms of computational methods. CMSE is unique among contemporary universities in this regard.

MSU is starting to get noticed by the top institutions worldwide for acquiring prowess, skills and capabilities in the HPC arena. Expect to hear more good news in this regard soon.

-Sharan Kalwani, HPCC Director

Check out the cool time-lapse video of the construction of iCER's booth at SC15 by clicking here.

Click here to see our video about this year's successful CI Forum.

HPC Training at iCER

Upcoming Workshops and Seminars

Introduction to HPCC
2-4:30 p.m. Wednesday, January 6
211 Bessey Hall
Instructor: Dr. Yongjun Choi

Introduction to Python
8:30-11:30 a.m. Thursday, January 7
217 Bessey Hall
Instructor: Sharan Kalwani

Introduction to Linux/Unix
9 a.m.-noon Thursday, January 14
Biomedical & Physical Sciences
Building, Room 1455A
Instructor: Dr. Xiaoge Wang

Introduction to HPCC
9 a.m.-noon Tuesday, January 19
Biomedical & Physical Sciences
Building, Room 1455A
Instructor: Patrick Bills

Introduction to GIT
11 a.m.-noon Thursday, January 21
Location: Biomedical & Physical
Sciences Building, Room 1455A
Instructor: Dr. Chun-Min Chang

RNA Sequencing Tools
9 a.m.-3 p.m. Monday-Tuesday,
January 25-26
Biomedical & Physical Sciences

Upcoming event:

"Faculty Seminars in Research and Instructional Technology"

Wednesday, January 6,
and Thursday, January 7, 2016

Faculty Seminars are two days of short courses designed to support faculty, academic staff, and graduate assistants in their teaching and research roles by providing instruction on a variety of software tools. All sessions are held at MSU in various technology classrooms and computer labs across campus. Full details, including registration information, can be found here.

We are offering more than 30 half-day and full-day courses in face-to-face settings. You may choose from one to four classes over the two-day period, with a free lunch each day at the MSU Union. All courses are offered at no charge to faculty and academic staff.

Building Room 2245
Instructor: Dharanya Sampath

PC to HPC: Parallel Computing
11:30 a.m.-12:30 p.m.
Wednesday, January 27
Biomedical & Physical Sciences
Building, Room 1455A
Instructor: Dr. Xiaoge Wang

[Click here](#) for registration information.

Check out the full schedule, and find expanded course descriptions by [clicking here.](#)

The deadline for enrolling in these Faculty Seminars in Research and Instructional Technology is Monday, December 28.

iCER's on Instragram!
Make sure to [follow us,](#) as we start sharing photos and videos of all the cool stuff we do and the latest HPCC developments.

New research highlight!
We recently posted a research highlight of Dr. Matthew Scholz's research identifying bacteria by their genomes. You can see a summary of his research [here](#).

Outage update
Last month, HPCC endured an unforeseen outage in the power infrastructure for the compute equipment. We informed all the users through every communication channel available to us as soon as we found out, and the entire HPCC team pitched in and managed the loss of complete power for several hours.

We successfully accomplished the massive task of restoring the service back to full levels through careful planning and working with our infrastructure teams on campus. We

iCER welcomes you to our open office hour each **Monday and Thursday from 1-2 p.m.** to receive one-on-one help with computational-based issues.
You can find us in the Biomedical and Physical Sciences Building in Room 1440 ready to help!

Please note:
There will be no office hours
Thursday, Dec. 24 or Thursday, Dec. 31

faced a delay of work getting completed by several hours and there was a delay in sending out emails that had gotten batched up, but we're proud to say that no work was lost.

We would like to thank our users for their understanding and patience. If you still have issues, please feel free to contact us.

Do you know about an event, opportunity, job posting, or general news that would be of interest in our community? Email us at communication@icer.msu.edu and we will get the word out. All submissions will be posted at the discretion of the iCER Communications Coordinator.

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