

Research Computing @ RIT

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Director

PI Institute
January 13, 2011

Mission

- Help researchers do research better via -
 - ~ CyberInfrastructure
 - ~ Collaboration
 - ~ Community

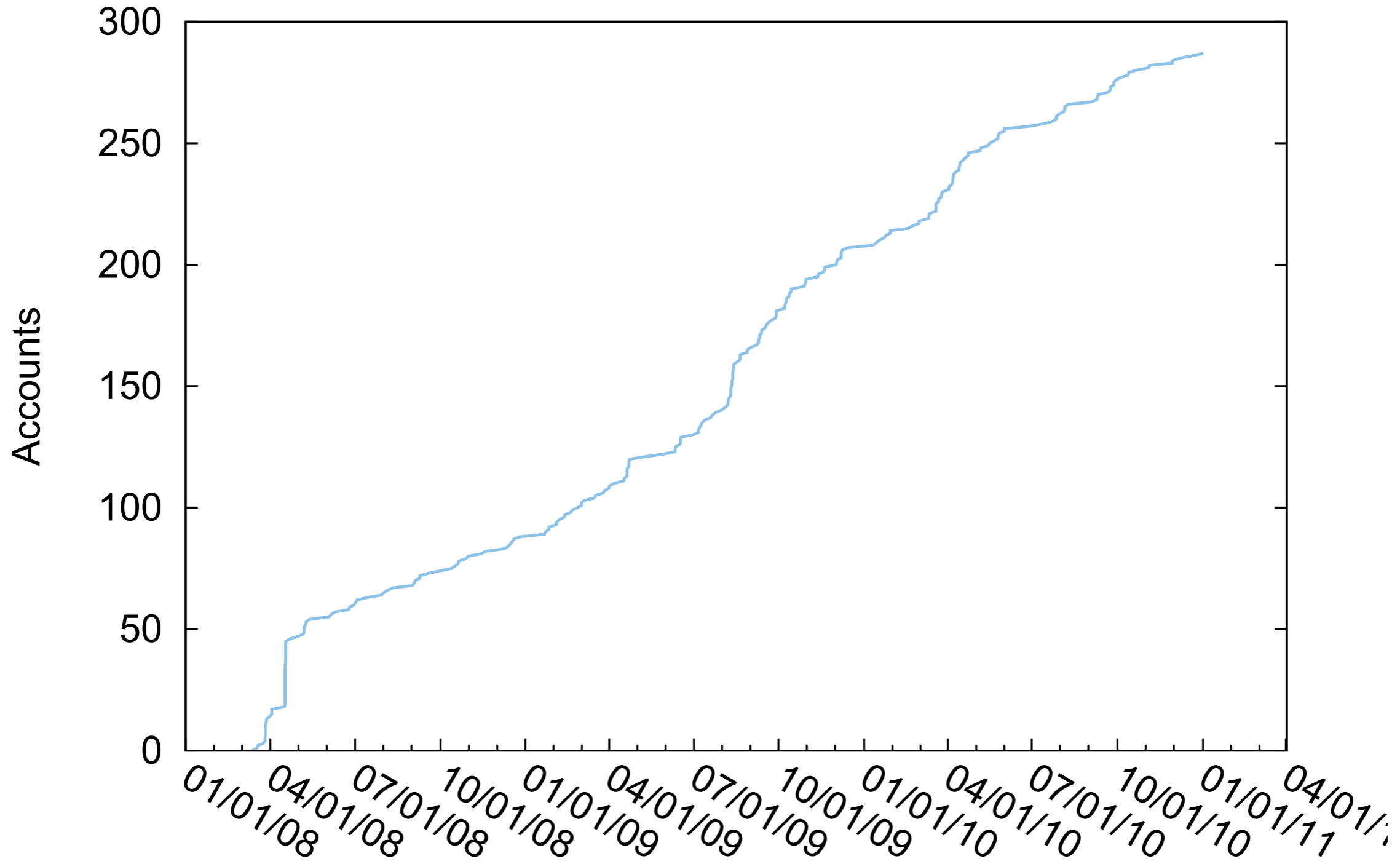
Vision

- - ~ **CI - Friendly, integrated research environment**
 - ~ **Community - Persistent Connected Communities**
 - ~ **Collaboration - Easy, productive relationships**

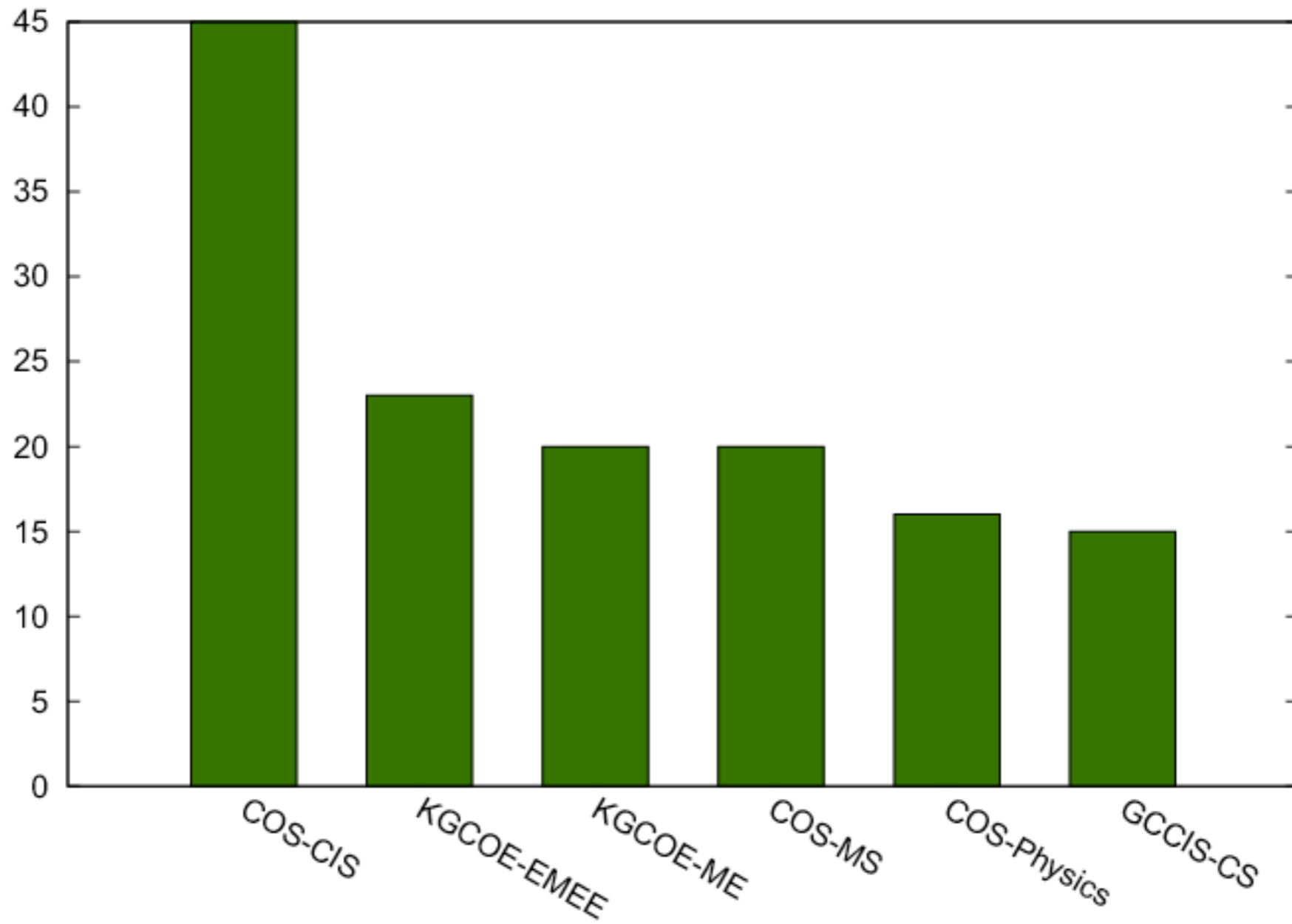
- ## Concept

- ~ Shared central systems
- ~ Campus Grid
- ~ Regional and Global Grids

RC accounts over time



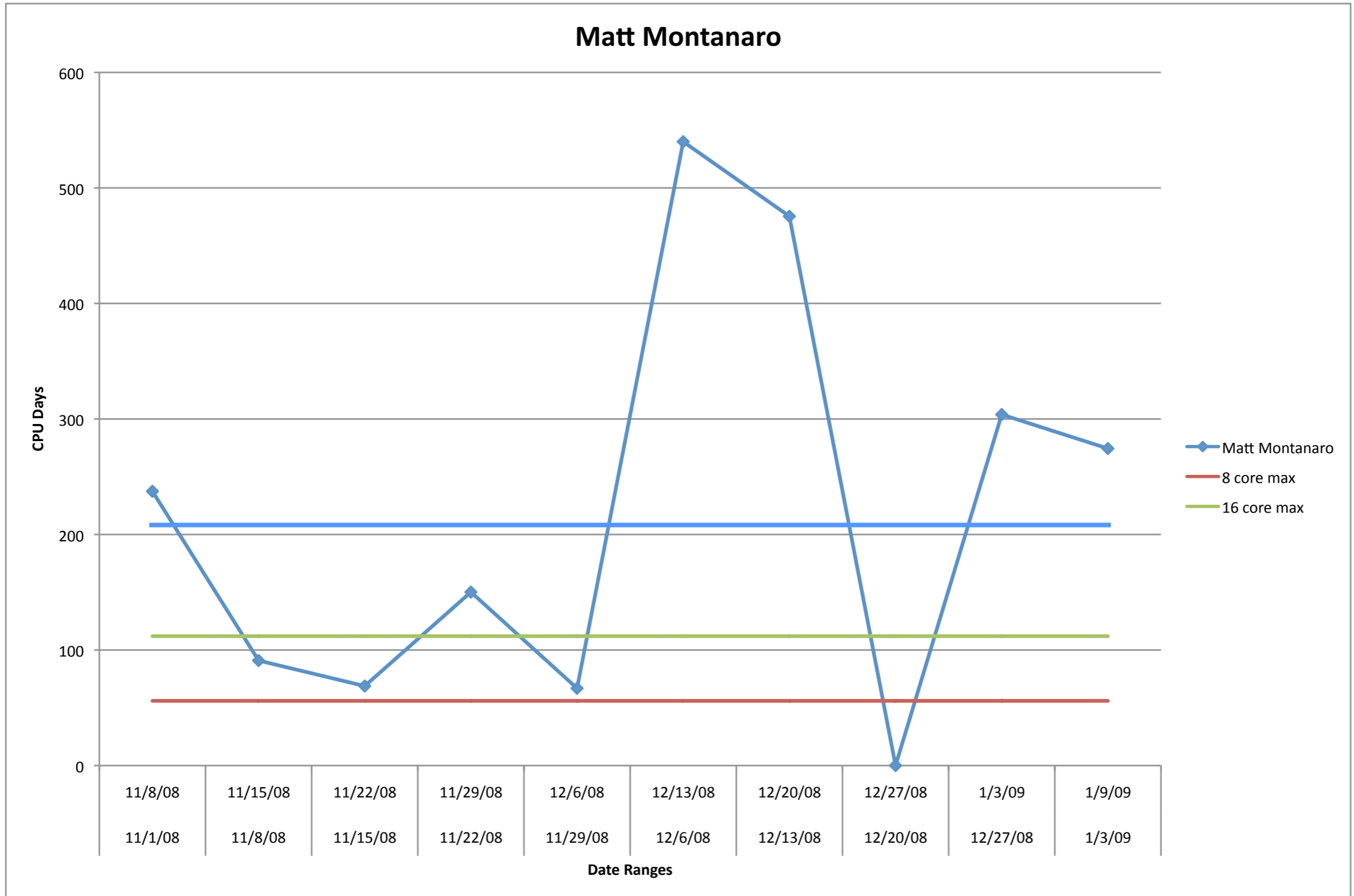
Users per department



2010

**111 researchers
submitted 1,388,015 jobs
consumed 45.3 cpu years
used 20 Terabytes disk space**

The case for sharing



Publications 2010

"This research was supported in part by Research Computing at the Rochester Institute of Technology."

Brian M. Flusche, PhD candidate, Center for Imaging Science,
Rochester Institute of Technology

Michael G. Gartley, Associate Scientist, Center for Imaging Science,
Rochester Institute of Technology

John R. Schott, Professor, Center for Imaging Science, Rochester
Institute of Technology

*Assessing the impact of spectral and polarimetric data fusion via
simulation to support multimodal system design requirements, J.
Appl. Remote Sens., Vol. 4, 043562 (2010) [doi:10.1117/1.3525590]*

Brian M. Flusche, PhD candidate, Center for Imaging Science,
Rochester Institute of Technology

Michael G. Gartley, Associate Scientist, Center for Imaging Science,
Rochester Institute of Technology

John R. Schott, Professor, Center for Imaging Science, Rochester
Institute of Technology

*Defining a process to fuse polarimetric and spectral data for target
detection and explore the trade space via simulation, J. Appl. Remote
Sens., Vol. 4, 043550 (2010) [doi:10.1117/1.3516616]*

Brian M. Flusche, PhD candidate, Center for Imaging Science,
Rochester Institute of Technology

Michael G. Gartley, Associate Scientist, Center for Imaging Science,
Rochester Institute of Technology

John R. Schott, Professor, Center for Imaging Science, Rochester
Institute of Technology

*Exploiting spectral and polarimetric data fusion to enhance target
detection performance, Proc. SPIE, Vol. 7812, 78120C (2010); doi:
10.1117/12.860640.*

Jacqueline Speir, Ph.D. candidate, Center for Imaging Science, RIT
Advisor: **John Schott**, Center for Imaging Science, RIT

*Validation of 3d radiative transfer in coastal-ocean water systems as
modeled by DIRSIG, Ph.D. Thesis, July 2010.*

Emily J. Berg, Masters student, Mechanical Engineering, Rochester
Institute of Technology

Jessica L. Weisman, Medical Illustration, Rochester Institute of
Technology

Michael J. Oldham, Department of Community and Environmental
Medicine, University of California at Irvine

Risa J. Robinson, Professor, Mechanical Engineering, Rochester
Institute of Technology

*Flow field analysis in a compliant acinus replica model using particle
image velocimetry (PIV), Journal of Biomechanics, Volume 43, Issue
6, 19 April 2010, Pages 1039-1047.*

Edward M. Harding Jr., Masters student, Mechanical Engineering,
RIT

Risa J. Robinson, Professor, Mechanical Engineering, RIT

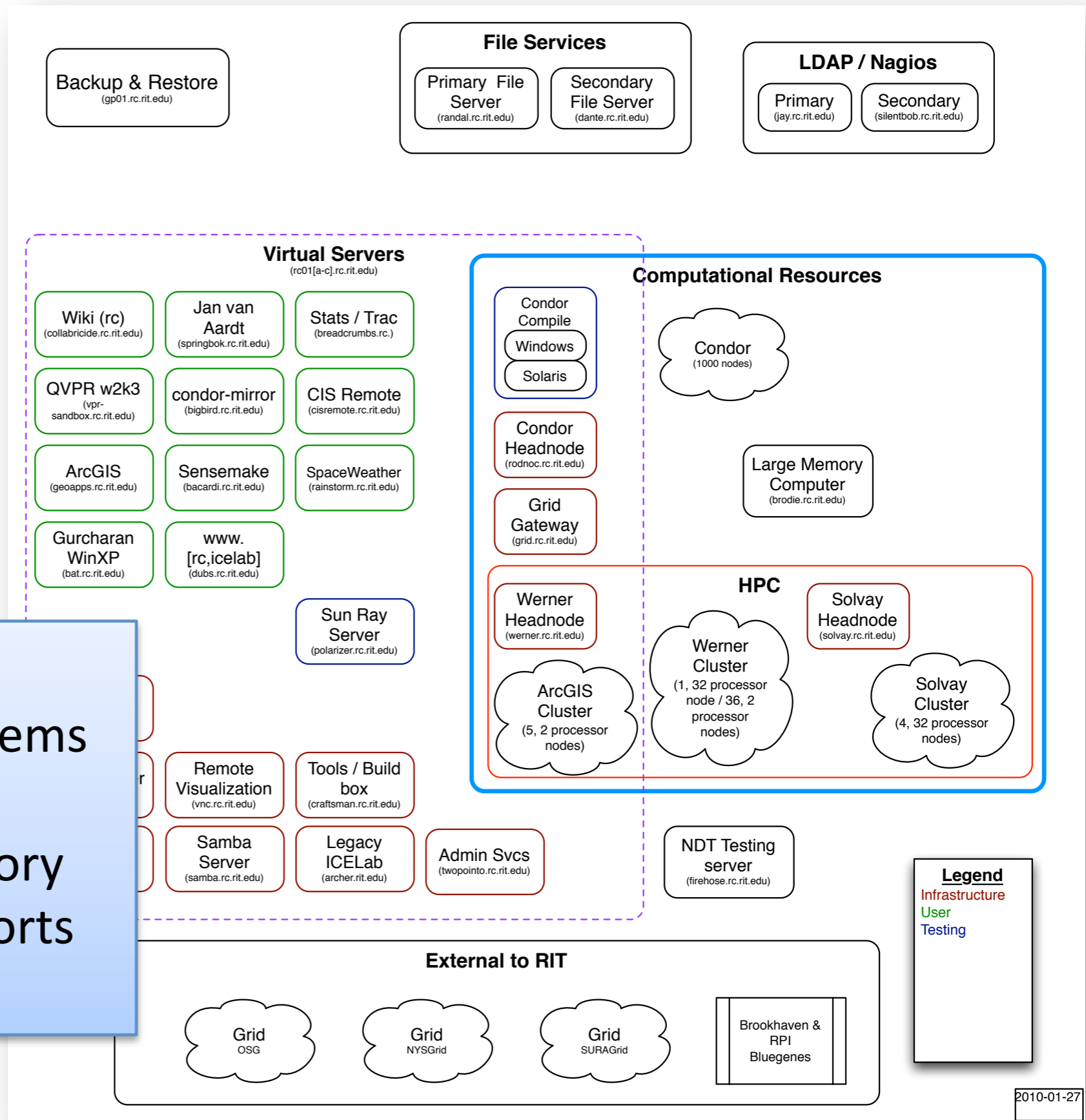
*Flow in a terminal alveolar sac model with expanding walls using
computational fluid dynamics Inhalation Toxicology, Pages 1-10.
Posted online on 13 May 2010.*

Cyberinfrastructure

Computers
Storage
Software
Networks
Visualization
Support
Training
Community

- Storage
- Backup
- SMP
- HPC
- VMs

54 Computer systems
 27 Virtual computer systems
 250 Processor cores
 750 Gigabytes RAM memory
 64 10 Gigabit network ports
 150 Terabytes disk space



User Provided Software

- Ampl
- Caldb
- Ciao
- Comsol
- Envi/idl
- ESI
- Fluent
- Gurobi
- Harpoon
- Knitro
- Lumerical
- Mathematica
- Matlab
- Meep
- Silvaco
- Xilinx
- BLAST
- LAM
- MPI
- MPIBLAST
- MPICH
- OpenMPI
- R

Staffing

- Director (RC)
- Senior Systems Administrator (RC)
- Assistant Systems Administrator (RC)
- Research Systems Administrator (CIS)
- UNIX Systems Administrator (CIS)
- Collaboration Lab Manager (RC)
- Lab Students

Apply for a Research Computing Account

<http://rc.rit.edu/apply>



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Director of Research Computing
Office of the Vice President for Research
Director of the Collaboration Laboratory
Assistant Research Professor, Ph.D.
Program GCCIS

The Research Computing Laboratory
is located on the second level of
the IT Collaboratory ENG 3110
(Bldg. 17)

<http://rc.rit.edu/directions.html>