



2008

Science

4th IEEE International
Conference on e-Science

Main Conference – Wednesday, December 10

Wednesday, December 10

7:30 a.m.–6 p.m.

Main: Registration Opens (Slater Foyer)

7:30 a.m.–4:30 p.m.

**Main: Continental Breakfast and Break Service
(Continuous—Conference Center Lobby)**

7:30 a.m.–5 p.m.

**Main: Laptop Charging Station and Lounge
(Room 102)**

9–10 a.m.

**Keynote Address: Rich Wolski (Auditorium)
Building Science Clouds using Commodity,
Open-Source Software Components**

10 a.m.–12:30 p.m., Reconvening 1:30–6 p.m.

**Workshop: e-Humanities—An Emerging Discipline
(Auditorium)**

Organizers

- Peter Wittenburg (Chair), MPI, Nijmegen, The Netherlands
- Laurent Romary, MPDL, Berlin, Germany
- Sheila Anderson, AHDS, London, UK
- Peter Doorn, DANS, Den Haag, The Netherlands
- Tamas Varadi, Academy of Science, Budapest, Hungary
- Steven Krauwer, University Utrecht, The Netherlands

10 a.m.–Noon, Reconvening 1–5 p.m.

**Workshop: SWBES08: Challenging Issues in Work-
flow Applications (Room 232)**

Organizers

- Adam Belloum, University of Amsterdam, The Netherlands
- Carole Goble, University of Manchester, UK
- Zhiming Zhao, University of Amsterdam, The Netherlands

Track 1A

10–10:30 a.m.

**Meandre: Semantic-Driven Data-Intensive Flows
in the Clouds (Room 208)**

Authors

- Xavier Llorca, University of Illinois at Urbana-Champaign
- Bernie Acs, University of Illinois at Urbana-Champaign
- Loretta Auvil, University of Illinois at Urbana-Champaign
- Boris Capitanu, University of Illinois at Urbana-Champaign
- Michael Welge, University of Illinois at Urbana-Champaign
- David Goldberg, University of Illinois at Urbana-Champaign

10:45–11:15 a.m.

**Scalable Semantics—the Silver Lining of
Cloud Computing (Room 208)**

Authors

- Andrew Newman, University of Queensland
- Yuan-Fang Li, The University of Queensland
- Jane Hunter, University of Queensland

11:30 a.m.–Noon

**Reducing Time-to-Solution Using Distributed
High-Throughput Mega-Workflows (Room 208)**

Authors

- Scott Callaghan, USC/SCEC
- Philip Maechling, USC/SCEC
- Ewa Deelman
- Karan Vahi
- Gaurang Mehta
- Gideon Juve, USC/SCEC
- Kevin Milner, USC/SCEC



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- Robert Graves, URS Corporation
- Edward Field, USGS
- David Okaya, USC
- Dan Gunter, LBNL
- Keith Beattie, LBNL
- Thomas Jordan, USC

- Dennis Gannon, Microsoft Research
- Sun Kim, Indiana University

11:30 a.m.–1:30 p.m.

Lunch (Continuous Buffet—Bistro)

Track 1B

1:30–2 p.m.

Detecting Communities in Science Blogs (Room 208)

Authors

- Christina Pikas, University of Maryland

2:15–2:45 p.m.

myExperiment: Defining the Social Virtual Research Environment (Room 208)

Authors

- David De Roure, University of Southampton
- Carole Goble, University of Manchester
- Jiten Bhagat, University of Manchester
- Don Cruickshank, University of Southampton
- Antoon Goderis, University of Manchester
- Danus Michaelides, University of Southampton
- David Newman, University of Southampton

Track 2B

1:30–2 p.m.

Lowering the Barriers to Cancer Imaging (Room 206)

Authors

- Maria Avila Garcia, University of Oxford
- Anne Trefethen, Oxford e-Research Centre
- Michael Brady, University of Oxford
- Fergus Gleeson, Churchill Hospital University of Oxford
- Daniel Goodman, Oxford University

Track 2A

10–10:30 a.m.

Towards an Acoustic Environment Observatory (Room 206)

Authors

- Richard Mason, QUT
- Paul Roe, QUT
- Michael Towsey, QUT
- Jinglan Zhang, QUT
- Jennifer Gibson, QUT
- Stuart Gage, MSU

10:45–11:15 a.m.

Distributed Replica-Exchange Simulations on Production Environments Using SAGA and Migol (Room 206)

Authors

- Shantenu Jha, LSU
- Andre Luckow

11:30 a.m.–Noon

BioVLAB-Microarray: Microarray Data Analysis in Virtual Environment (Room 206)

Authors

- Youngik Yang, Indiana University
- Jong Youl Choi, Indiana University
- Kwangmin Choi, Indiana University
- Marlon Pierce, Indiana University



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2:15–2:45 p.m.

Soundness and Niceness at Correctness Criteria for Grid Workflows (Room 206)

Authors

- Nikola Trcka, Eindhoven University
- Natalia Sidorova
- Wil Van der Aalst, Eindhoven University

2:45–3:15 p.m.

Break (Room 208)

Track 1C

3:15–3:45 p.m.

Classification of Different Approaches for e-Science Applications (Room 208)

Authors

- Morris Riedel, Forschungszentrum Jülich
- Achim Streit
- Felix Wolf
- Thomas Lippert
- Dieter Kranzlmüller

4–4:30 p.m.

QoS-Based Web Service Composition Accommodating Inter-Service Dependencies Using Minimal-Conflict Hill-Climbing Repair Genetic Algorithm (Room 208)

Authors

- Lifeng Ai, IT Faculty, QUT, Brisbane, Australia
- Maolin Tang, IT Faculty, QUT, Brisbane, Australia

Track 2C

3:15–3:45 p.m.

Grid-Enabled Instrument Representation and Reservation (Room 206)

Authors

- Constantinos Kotsokalis, NTUA
- Tiziana Ferrari, INFN

- Panagiotis Louridas, AUEB
- Elisabetta Ronchieri, INFN
- Panayiotis Tsanakas, NTUA

4–4:30 p.m.

Experiences from Cyberinfrastructure Development for Multi-User Remote Instrumentation (Room 206)

Authors

- Prasad Calyam, Ohio Supercomputer Center
- David Hudak, Ohio Supercomputer Center
- Ashok Krishnamurthy, Ohio Supercomputer Center
- Karen Tomko, Ohio Supercomputer Center

6–8 p.m.

Poster Session: Evening Poster Reception (Scholar's Hall—Food Court)



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Continental Breakfast and Break Service (Continuous—Conference Center Lobby)

7:30 a.m.–5 p.m.

Laptop Charging Station and Lounge (Room 102)

9–10 a.m.

Keynote Address: Daniel A. Reed (Auditorium) Cloud Seeding: Watering Research Flowers

10–11:30 a.m.

Panel Discussion: Assessing the Potential Impact and Challenges of ManyCore Processors on eScience (Auditorium)

Moderator

- Dennis Gannon

Panelists

- Jack Dongarra
- Satoshi Matsuoka
- Dan Reed
- Geoffrey Fox

10 a.m.–4:30 p.m.

Workshop: Innovative and Collaborative Problem Solving Environments (PSE) in Distributed Resources: PSE Workshop08 (Room 236)

Organizers

Co-Chairmen

- Soonwook Hwang, Korea Institute of Science and Technology Information (KISTI), Daejeon, Korea
- Mo Mu, Dept. of Mathematics, Hong Kong University of Science and Technology, Hong Kong

Committee Members

- Ron Boisvert, Mathematics and Comput Sciences Division, NIST, USA
- Stratis Gallopoulos, University of Patras, Greece
- Ryutaro Himeno, RIKEN, 2-1, Hirosawa, Wako-shi,

Saitama, Japan

- Elias Houstis, Department of Computer Eng and Comm, University of Thessaly, Greece
- Yoshimasa Kadooka, Fujitsu Lab, Fujitsu Co. LTD, Japan
- Shigeo Kawata, Graduate School of Engineering, Utsunomiya University, Japan
- David Meredith, Science and Technology Facilities Council, eScience Centre Daresbury Laboratory, UK
- Kimio Miyazawa, Fujitsu Lab, Fujitsu Co. LTD, Japan
- Naren Ramakrishnan, Department of Computer Science, Virginia Tech, USA
- Calvin J. Ribbens, Department of Computer Science, Virginia Tech, USA
- Yukio Umetani, Department of Computer Science, Shizuoka University, Japan
- Nancy Wilkins-Diehr, San Diego Supercomputer Center, University of California at San Diego, United States
- Heon-Young Yeom, Department of Computer Science and Engineering, Seoul National University, Korea
- Wu Zhang, School of Computer Science and Engineering, Shanghai University, China

10 a.m.–5 p.m.

Workshop: Abstractions for Distributed Applications and Systems (232)

Organizers

- Shantenu Jha, Louisiana State University and e-Science Institute, Edinburgh, USA and UK
- Murray Cole, University of Edinburgh, UK
- Dan Katz, Louisiana State University, USA
- Manish Parashar, Rutgers University, USA
- Omer Rana, Cardiff University, UK
- Jon Weissman, University of Minnesota, USA



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Track 1D

10–10:30 a.m.

End-to-End e-Science: Integrating Workflow, Query, Visualization, and Provenance at an Ocean Observatory (Room 208)

Authors

- Bill Howe, Oregon Health and Science University
- Peter Lawson, National Marine Fisheries Service
- Renee Bellinger, Oregon State University
- Erik Anderson, University of Utah
- Emanuele Santos, University of Utah
- Juliana Freire, University of Utah
- Carlos Scheidegger, University of Utah
- Antonio Baptista, Oregon Health and Science University
- Claudio Silva, University of Utah

10:45–11:15 a.m. *CANCELED*

Service Oriented Utility Grid for 3-Dimensional Topographic Visualization from Satellite Images (Room 208)

Authors

- Deepak P, ADRIN
- Pramod Kumar, ADRIN
- Geeta Varadan, ADRIN

11:30 a.m.–Noon

A Web Services Architecture for Visualization (Room 208)

Authors

- Jason Wood, University of Leeds
- Ken Brodli, University of Leeds
- Jungwook Seo, University of Leeds
- David Duke, University of Leeds
- Jeremy Walton, NAG

Track 2D

10–10:30 a.m.

A Distributed Algorithm for Determining the Provenance of Data (Room 206)

Authors

- Paul Groth, Information Sciences Institute

10:45–11:15 a.m.

An Extensible, Scalable Architecture for Managing Bioinformatics Data and Analysis (Room 206)

Authors

- Anuj Shah, PNNL
- Mudita Singhal, Pacific Northwest National Laboratory
- Tara Gibson, Pacific Northwest National Laboratory
- Chandrika Sivaramakrishnan, Pacific Northwest National Laboratory
- Katrina Waters, Pacific Northwest National Laboratory
- Ian Gorton, Pacific Northwest National Laboratory

11:30 a.m.–Noon

ARCHER: An Enabler of Research Data Management (Room 206)

Authors

- Anthony Beitz, Monash University
- Andrew Treloar, Monash University
- Ashley Buckle, Monash University
- David Groenewegen, Monash University
- Nick Nicholas, Link Affiliates
- Ian Atkinson, James Cook University

11:30 a.m.–1:30 p.m.

Lunch (Continuous Buffet—Bistro)



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1–5 p.m.

Workshop: Advances in High-Performance E-Science Middleware and Applications (Auditorium)

Organizers

- Robert van Engelen, Florida State University, USA
- Madhu Govindaraju, SUNY Binghamton, USA
- Massimo Cafaro, University of Salento, Italy

Track 1E

1:30–2 p.m.

Contextualization: Providing One-click Virtual Clusters (Room 208)

Authors

- Kate Keahey, ANL
- Tim Freeman, University of Chicago

2:15–2:45 p.m.

Characterizing User-level Network Virtualization: Performance, Overheads, and Limits (Room 208)

Authors

- Mauricio Tsugawa, University of Florida
- Jose Fortes

Track 2E

1:30–2 p.m.

Secure, Performance-Oriented Data Management for nonCMOS Electronics (Room 206)

Authors

- Richard Sinnott, Nesc
- Gordon Stewart
- Christopher Bayliss
- Clive Davenhall
- Campbell Millar
- Gareth Roy
- Scott Roy
- Asen Asenov

- Bruno Harbulot
- Mike Jones
- John Watt

2:15–2:45 p.m.

Sensor Metadata Management and Its Application in Collaborative Environmental Research (Room 206)

Authors

- Nicholas Dawes, Swiss Federal Institute for Snow and Avalanche Research
- K. Ashwin Kumar, EPFL
- Sebastian Michel, EPFL
- Karl Aberer, Ecole Polytechnique Fédérale de Lausanne, Switzerland
- Michael Lehning, WSL, Swiss Federal Institute for Snow and Avalanche Research (SLF), Davos

2:45–3:15 p.m.

Break (Room 208)

Track 1F

3:15–3:45 p.m.

SLA-Driven Semantically-Enhanced Dynamic Resource Allocator for Virtualized Service Providers (Room 208)

Authors

- Jorge Ejarque, BSC-CNS
- Marc De Palol, BSC-CNS
- Iñigo Goiri, BSC-CNS
- Ferran Julia, BSC-CNS
- Jordi Guitart, BSC-CNS
- Rosa Badia, Barcelona
- Jordi Torres, BSC-CNS



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4–4:30 p.m.

CloudBLAST: Combining MapReduce and Virtualization on Distributed Resources for Bioinformatics Applications (Room 208)

Authors

- Andrea Matsunaga, University of Florida
- Mauricio Tsugawa, University of Florida
- Jose Fortes

Track 2F

3:15–3:45 p.m.

A Library for Asynchronous Concurrent Service Orchestration (Room 206)

Authors

- Wei Lu, Indiana University
- Dennis Gannon, Indiana University

4–4:30 p.m.

The Grid Browser: Improving Usability in Service-Oriented Grids by Automatically Generating Clients and Handling Data Transfers (Room 206)

Authors

- Steffen Heinzl, Philipps-University of Marburg
- Markus Mathes, Philipps-University of Marburg
- Bernd Freisleben, Philipps-University of Marburg

6–8 p.m.

**Banquet: Conference Awards Banquet
(Conference Center Ballroom)**



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Main Conference – Friday, December 12

Friday, December 12

7:30 a.m.–1 p.m.

Registration Opens (Slater Foyer)

7:30 a.m.–4:30 p.m.

Continental Breakfast and Break Service (Continuous—Conference Center Lobby)

7:30 a.m.–5 p.m.

Laptop Charging Station and Lounge (Room 102)

8:30–9:30 a.m.

Keynote Address: Alexander Szalay (Auditorium) Science in the Cloud

9:30–11:30 a.m.

Workshop: e-Science for Cheminformatics and Drug Discovery (Room 236)

Organizers

- David Wild, Indiana University, USA
- Rajarshi Guha, Indiana University, USA
- Marlon Pierce, Indiana University, USA

9:30 a.m.–Noon, Reconvening 2–3:30 p.m.

Workshop: eBioinformatics (Room 232)

Organizers

- Mehmet Dalkilic, Indiana University—Bloomington, School of Informatics
- Jake Chen, Indiana University, School of Informatics; Purdue University, Department of Computer & Information Science
- Daisuke Kihara, Purdue University, Computer Science, Biological Sciences

9:30 a.m.–Noon, Reconvening 2–5:00 p.m.

Workshop: Adding Value to Data—Digital Repositories in the e-Science World (Auditorium)

Organizers

- Andreas Aschenbrenner, University of Göttingen, Germany
- Tobias Blanke, King's College London, UK
- Mark Hedges, King's College London, UK

Track 1G

9:30–10 a.m.

Re-Thinking Grid Security Architecture (Room 208)

Authors

- Yuri Demchenko, UvA
- Cees Laat de, UvA
- Oscar Koeroo, NIKHEF
- David Groep, NIKHEF

10:15–10:45 a.m.

MapReduce for Data Intensive Scientific Analyses (Room 208)

Authors

- Jaliya Ekanayake, Indiana University
- Shrideep Pallickara, Indiana University
- Geoffrey Fox, Indiana University

11–11:30 a.m.

MRPGA: An Extension of MapReduce for Parallelizing Genetic Algorithms (Room 208)

Authors

- Chao Ji, University of Melbourne
- Christian Vecchiola, University of Melbourne
- Rajkumar Buyya, University of Melbourne

Track 2G

9:30–10 a.m.

Estimating Resource Needs for Time-Constrained Workflows (Room 206)

Authors

- Eun Kyu Byun, KAIST
- Yang-Suk Kee
- Ewa Deelman
- Karan Vahi
- Gaurang Mehta
- Jin-Soo Kim



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Main Conference – Friday, December 12

10:15–10:45 a.m.

Forecasting Duration Intervals of Scientific Workflow Activities (Room 206)

Authors

- Xiao Liu, FICT, Swinburne University of Technology
- Jinjun Chen, FICT, Swinburne University of Technology
- Ke Liu, FICT, Swinburne University of Technology
- Yun Yang, FICT, Swinburne University of Technology

11–11:30 a.m.

Provenance in Dynamically Adjusted and Partitioned Workflows (Room 206)

Authors

- Daniel Goodman, Oxford University

11:30 a.m.–1:30 p.m.

Lunch (Continuous Buffet—Bistro)

1–2 p.m.

Keynote Address: Edward Seidel (Auditorium)

Track 1H

2–2:30 p.m.

SWARM: Scheduling Large-Scale Jobs Over the Loosely-Coupled HPC Clusters (Room 208)

Authors

- Sangmi Pallickara, Indiana University
- Marlon Pierce, Indiana University

2:45–3:15 p.m.

The Rails Toolkit—Enabling End-System Topology-Aware High End Computing (Room 208)

Authors

- Venkatram Vishwanath, Electronic Visualization Lab
- Jason Leigh
- Sungwon Nam
- Luc Renambot
- Takashi Shimizu

- Osamu Kamatani
- Takahashi Hirokazu
- Makoto Takizawa

3:30–4 p.m.

Parallel Processing of Large-Scale XML-Based Application Documents on Multi-core Architectures with PiXiMaL (Room 208)

Authors

- Michael Head, Binghamton University
- Madhusudhan Govindaraju, SUNY Binghamton

Track 2H

2–2:30 p.m.

WOOL: A Workflow Programming Language (Room 206)

Authors

- Geoffrey Hulet, University of Oregon
- Matthew Sottile, University of Oregon
- Allen Malony, University of Oregon

2:45–3:15 p.m.

VO-enabled Service Harmonization in the GEO Grid (Room 206)

Authors

- Naotaka Yamamoto, AIST
- Isao Kojima, AIST
- Yoshio Tanaka, AIST
- Satoshi Sekiguchi, AIST

3:30–4 p.m.

User Friendly Management of Workflow Results: From Provenance Information to Grid Logical File Names (Room 206)

Authors

- Tristan Glatard, University of Amsterdam
- Silvia Olabarriaga, Academic Medical Centre Amsterdam