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deelman@isi.edu

EWA DEELMAN, Ph.D.

RESEARCH INTERESTS

Managing large-scale science workflows and data in distributed environments. Developing algorithms and technologies for science automation. Impacting Science through advanced cyberinfrastructure.

APPOINTMENTS

Research Professor, USC Computer Science Department
2016-present **Research Associate Professor, USC Computer Science Department**
2009-2016 **Research Assistant Professor, USC Computer Science Department**
2003-2009 University of Southern California, Los Angeles, CA

Research Director, Science Automation Technologies, USC Information Sciences Institute Principal Scientist, USC Information Sciences Institute
2016-present
2018-present **Assistant Director, Science Automation Technologies, USC Information Sciences Institute**
2012-2015 **Project Leader, USC Information Sciences Institute**
2007-2012 **Research Team Leader, USC Information Sciences Institute**
2002-2007 **Computer Scientist, USC Information Sciences Institute**
2000-2002 Marina del Rey, CA

Scientific applications need to make use of a number of heterogeneous and often distributed resources that include both data and computations. My research focuses on developing tools and techniques that enable easy, efficient, and reliable execution of complex applications in distributed and high-performance environments. Particular emphasis is given to managing applications specified as computational workflows. My research encompasses a number of areas including task scheduling, performance optimization, reliability techniques, resource provisioning, and workflow monitoring and troubleshooting. One of the tools developed in my group is the Pegasus Workflow Management System that is being used day-to-day in a number of scientific applications including astronomy, biology, earthquake science, gravitational-wave physics (LIGO), and others. The applications make use of their own computing clusters, national cyberinfrastructure, and cloud computing resources. My research interests also include data and metadata management in scientific applications.

Post Doctoral Fellow, University of California
Los Angeles, CA
1997-2000
Conducted research in parallel simulation of message-passing programs and performance modeling.

Participated in the POEMS project, which aims to design a system for Performance Oriented End-to-End Modeling of Large Heterogeneous Adaptive Parallel/Distributed Computer/Communication Systems. Major development was geared towards efficient and accurate simulation of message-passing programs (such as those using MPI) on high performance systems (such as the IBM SP). New SMP-cluster architectures were modeled. Compiler optimizations which improved the efficiency and scalability of the simulator where investigated. The POEMS project involves a collaboration between several universities: Purdue, Rice, UCLA, U.T. Austin, U.T. El Paso, U. of Wisconsin and LANL.

Guest lectured in parallel computation courses.
Guided the research of graduate students.

EDUCATION

Doctor of Philosophy in Computer Science

1997 Rensselaer Polytechnic Institute
Troy, NY
"Performance Optimization of Parallel Discrete Event Simulation of Spatially Explicit Problems"

Developed an object oriented Parallel Discrete Event Simulation System that uses the optimistic approach to event processing. The system was designed to run on an MIMD machine and tested on an IBM SP. In order to achieve good performance, new synchronization techniques were formulated. Developed a new algorithm to continuously monitor the progress of all simulation processes. Designed a new approach for rolling back computation in spatially explicit problems. This approach resulted in a speedup close to linear over a single processor run. Load balancing techniques were also investigated.

Thesis Advisor: Prof. Boleslaw Szymanski

Master of Science in Computer Science

1991 State University of New York, New Paltz, NY

Bachelor of Arts in Mathematics

1987 Wells College, Aurora, NY

FELLOWSHIPS HONORS

- IEEE Sidney Fernbach Memorial Award, "For work in workflow-based parallel and distributed computing.", November 2025
- USC Information Sciences Institute Fellow, “For contributions in the automation of scientific computing applications and advancing the role of computation in scientific domains of societal importance.” January 2023
- Euro-Par Achievement Award, “In recognition of her outstanding contribution to parallel computing”, August 2022
- AAAS Fellow, November 2019
- IEEE Fellow, December 2017
- Best paper award, Innovating the Network for Data-Intensive Science at SC’23, Imtiaz Mahmud, George Papadimitriou, Cong Wang, Mariam Kiran, Anirban Mandal, and Ewa Deelman. 2023. Elephants Sharing the Highway: Studying TCP Fairness in Large Transfers over High Throughput Links. In Proceedings of the SC '23 Workshops of The International Conference on High Performance Computing, Network, Storage, and Analysis (SC-W '23). Association for Computing Machinery, New York, NY, USA, 806–818. https://doi.org/10.1145/3624062.3624594
- Best paper award, 22nd IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid), Tanaka, R., Papadimitriou, G., Viswanath, S. C., Wang, C., Lyons, E., Thareja, K., Qu, C., Esquivel, A., Deelman, E., Mandal, A., Calyam, P., & Zink, M. (2022). Automating Edge-to-cloud Workflows for Science: Traversing the Edge-to-cloud Continuum with Pegasus. 826–833. https://doi.org/10.1109/CCGrid54584.2022.00098
- HPCwire Readers’ Choice award for Best HPC Collaboration across Academia, Government, and Industry at the 2021 International Conference for High Performance Computing, Networking, Storage and Analysis (SC21), given the CI CoE Pilot/CI Compass, The NSF Cyberinfrastructure Center of Excellence, November 2021
- Best paper award, 2021 Future Generation Computer Systems Journal for Papadimitriou, G., Wang,

C., Vahi, K., Ferreira da Silva, R., Mandal, A., Zhengchun, L., Mayani, R., Rynge, M., Kiran, M., Lynch, V. E., Kettimuthu, R., Deelman, E., Vetter, J. S., & Foster, I. (2021). End-to-End Online Performance Data Capture and Analysis for Scientific Workflows. *Future Generation Computer Systems*, *117*, 387–400. https://doi.org/10.1016/j.future.2020.11.024

- Best paper award and the Phil Andrews Most Transformative Contribution Award, Practice and Experience in Advanced Research Computing on Rise of the Machines (Learning): M. Rynge, K. Vahi, E. Deelman, A. Mandal, I. Baldin, O. Bhide, R. Heiland, V. Welch, R. Hill, W. L. Poehlman, and A. F. Feltus, "Integrity Protection for Scientific Workflow Data: Motivation and Initial Experiences," in Proceedings of the Practice and Experience in Advanced Research Computing on Rise of the Machines (Learning), New York, NY, USA, 2019, p. 17:1–17:8.
- USC Information Sciences Achievement Award "for technical contributions and leadership in the field of scientific workflow systems for high-performance computing", 2015.
- High-Performance Parallel and Distributed Computing (HPDC) 2015 achievement award, which is presented to an individual who has made long-lasting, influential contributions to the foundations or practice of the field of high-performance parallel and distributed computing, June 2015
- CENIC Star Performer for the ADAMANT project, January 2014
- Corporation for Education Network Initiatives in California's (CENIC) 2013 Innovations in Networking Award for Experimental/Developmental Applications for the ADAMANT (Adaptive Data-Aware Multi-domain Application Network Topologies) Project, March 2013
- Best Paper award, e-Science 2006, Amsterdam, Netherlands: E. Deelman, S. Callaghan, E. Field, H. Francoeur, R. Graves, N. Gupta, V. Gupta, T. H. Jordan, C. Kesselman, P. Maechling, J. Mehringer, G. Mehta, D. Okaya, K. Vahi, and L. Zhao, Managing Large-Scale Workflow Execution from Resource Provisioning to Provenance tracking: The CyberShake Example, Proceedings of e-Science, Amsterdam, The Netherlands, 2006.
- Best Paper award, 15th Workshop on Parallel and Distributed Simulation, Lake Arrowhead, CA, USA; 15-18 May 2001: E. Deelman, R. Bagrodia, R. Sakellariou, V. Adve. Improving Lookahead in Parallel Discrete Event Simulations of Large-Scale Applications Using Compiler Analysis. Proceedings 15th Workshop on Parallel and Distributed Simulation p. 5-13, Lake Arrowhead, CA, USA; 15-18 May 2001.
- General Electric Foundation Fellowship, Rensselaer Polytechnic Institute, 1993-1994.
- Special Distinction in the field of Mathematics, Wells College, 1987.

PROFESSIONAL ACTIVITIES

- Associate Editor, IEEE Science and Engineering Journal 2020 -
- Associate Editor, *IEEE Internet Computing*, 2019 -
- Editorial Board Member, International Journal of High Performance Computing Application, 2015 – 2025
- Editorial Board Member, ACM International Conference Proceeding Series, 2015- 2020
- Editorial Board Member, Journal of Grid Computing, 2013-
- Editorial Board Member, ACM Computing Surveys, 2021 – 2023
- Advisory Committee Membner, IEEE eScience Conference, 2023 -
- Steering Committee Member, IEEE eScience Conference, 2013- 2023
- Steering Committee Member, IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, 2013-
- DISCOVER-US steering committee, 2024-
- Advisory Committee Member, Oak Ridge National Laboratory Computing and Computational Sciences Directorate , 2022- 2025
- Steering Committee Member, Cluster conference 2022 - 2025
- Steering Committee Member, SC Conference 2017 – 2020
- Steering Committee Member, e-Science All Hands Meeting Foundation, 2008- 2012
- Associate Editor responsible for Grid and Cloud Computing for the Scientific Programming

Journal, 2002-2014

- Associate Editor, IEEE Transactions on Parallel and Distributed Systems, 2016 – 2018
- Chair, SC22 Test of Time Award, Dallas, 2022
- Chair, SC21 Exhibitor Forum, St Louis, 2021
- General Co-chair, IEEE/ACM Conference on Utility and Cloud Computing (UCC), 2021
- Technical Program Chair, IEEE Cluster Conference, Virtual, 2021
- SC19 Exhibits Chair, Denver 2019
- Track co-chair, 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2019), Cyprus
- Chair, Birds of a Feather, SC'18, Dallas, November 2018
- Chair, Housing, SC'17, Denver, November 2017
- Vice-Chair of Program Committee, 12th International Conference on Parallel Processing and Applied Mathematics (PPAM), Lublin, Poland, September 2017
- Chair, Workshops, SC'16 Technical Program, Salt Lake City, November 2016
- Deputy Chair, Housing, SC'16, Salt Lake City, November 2016
- Chair, Posters, Cluster 2016, Taipei Taiwan, September 2016
- Co-Chair, Technical Papers, SC'15 Technical Program, Austin, TX, November 2015
- Vice-Chair of Program Committee, 11th International Conference on Parallel Processing and Applied Mathematics (PPAM), Krakow, Poland, September 2015
- Co-chair, Tutorials, 8th IEEE/ACM International Conference on Utility and Cloud Computing, Cyprus, December 2015
- Co-area chair for the SC'14 Technical Program (Clouds and Distributed Computing area), New Orleans, 2014
- Vice Program Chair, International Conference on Parallel Processing and Applied Mathematics. PPAM, Poland, September 2013
- Chair, Global Grid Forum Workflow Management Research Group, 2003-2010
- Co-Chair NSF Workshop SDCI/STCI as the Software Supply Chain of the National Cyberinfrastructure Workshop, January 2010
- Mentor for the CRA-W Distributed Research Experiences for Undergraduates (DREU) program, 2008, 2010
- Co-Chair, Workshop on Workflows in Support of Large-Scale Science, in conjunction with SC 2008, SC 2009, and 2010
- Founder and Chair, Workshop on Workflows in Support of Large-Scale Science, in conjunction with HPDC 2006, and 2007 June 2006 & 2007
- Co-Guest Editor, Scientific Programming Journal, Special issue on Dynamic Computational Workflows: Discovery, Optimization, and Scheduling, 2007
- Co- Guest Editor Journal of Grid Computing, Special Issue dedicated to Workflow Management in Grids, 2006
- Co-Editor, Workflows in e-Science book, Springer 2007
- Workshop Chair Applications and Middleware Grid Workshop, September 2005
- Lecturer, Global Grid Forum Summer School, July 2004
- Organizing Committee Member, GGF Workshop on Workflows in Grids, 2004.
- Co-Editor of the Special Issue of the Scientific Programming Journal devoted to Grid Computing, Volume 10, Number 2, 2002.
- Workshop Chair, Applications Grid Workshop, September 2003, 2005, 2007
- Panel member at the International Conference on Dependable Systems and Network panel on "Dependability and the Grid", June 2002.
- Technical Board member of the Gridlab project, an EU funded project.
- General Co-Chair, of the 15th Workshop on Parallel and Distributed Simulation, PADS2001, Lake Arrowhead, CA, 2001.

- Organizer So-Cal Seminar on Parallel Computing Systems, January 22, 1999.
- Organizing Committee Chair, Third Workshop on Languages, Compilers, and Run-Time Systems for Scalable Computers held at Rensselaer Polytechnic Institute, May 1995.
- Pipelink Project Member, Lectured high-school students about research performed in Computer Science. The goal of this project is to interest and support young women in Computer Science, 1995.

Program Committee Member (selected)

- Platform for Advanced Scientific Computing (PASC) Conference, Posters Committee Member, Brugg-Windisch, Switzerland, 2025
- ACM Conference on Reproducibility and Replicability, Technical Committee Member, Vancouver, Canada, 2025
- SC24 Posters Committee Member, Atlanta, 2024
- ACM Conference on Reproducibility and Replicability, Technical Committee Member, Rennes, France, 2024
- ISC High Performance Conference, Tutorials Committee Member, Hamburg, 2024
- ISC Jack Dongarra Early Career Award Committee Member, Hamburg, 2023, 2024, 2025
- International Conference on Parallel Processing (ICPP), Program Committee Member 2022
- SC21 ACM Graduate Posters Committee Member, St Louis, 2021
- SC20 ACM Graduate Posters Committee Member, Virtual, 2020
- SC20 Tutorials Committee Member, Virtual, 2020
- SC19 Tutorials Committee Member, Denver 2019
- 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2018)The 1st Workshop on Infrastructure for Workflows and Application Composition (IWAC), 2019, Cyprus, co-area chair for Scheduling and Resource Management.
- 16th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2018), Washington, DC
- The 12Th Workshop on Workflows in Support of Large-Scale Science, Denver, November 2017
- SuperComputing'17, Denver, November 2017
- 13th IEEE International Conference on eScience, 2017, Auckland, NZ
- 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, 2017
- AMGCC 2017 (The 5th International Workshop on Autonomic Management of high performance Grid and Cloud Computing), Tucson, AZ, 2017
- ICPP-2017 (46th International Conference on Parallel Processing), Bristol, UK
- The International Supercomputing Conference (ISC), 2016, Germany
- 16th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2016), Columbia
- 30th IEEE International Parallel & Distributed Processing Symposium (IPDPS), 2016, Chicago
- The 11Th Workshop on Workflows in Support of Large-Scale Science, Denver, November 2016
- 11th IEEE International Conference on eScience, 2015, Germany
- The 10Th Workshop on Workflows in Support of Large-Scale Science, Denver, November 2015
- Best Paper Committee Member, SC'14 New Orleans, 2014
- 10th IEEE International Conference on eScience, 2014, Brazil
- 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, 2014
- The 9Th Workshop on Workflows in Support of Large-Scale Science, Denver, November 2014
- 2nd Workshop on Sustainable Software for Science: Practice and Experiences in conjunction with SC'14, 2014
- 9th IEEE International Conference on eScience, 2013
- 13th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing
- The 8Th Workshop on Workflows in Support of Large-Scale Science, Denver, November 2013
- First Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE), Denver, CO 2013

- IEEE Big Data 2013, Santa Clara, CA, October 2013
- The 8th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing, Compiegne, France, October 2013
- International Conference on Cloud and Green Computing, Karlsruhe, Germany, September, 2013
- AMGCC'13 (The 1st International Workshop on Autonomic Management of Grid and Cloud Computing), Miami, Florida, August, 2013
- Grid and Cloud Computing in Biomedicine and Life Sciences, Porto, Portugal, June 2013
- BIGPROV'13: International Workshop on Managing and Querying Provenance Data at Scale, Genoa, March 2013, Italy
- Workshop on Workflows in Support of Large-Scale Science, in conjunction with SC 2012, Salt Lake City, November 2012
- The 5th IEEE/ACM International Conference on Utility and Cloud Computing, Chicago, IL November 2012
- The 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid) 2012, Ottawa, Canada, May 2012
- Scientific and Statistical Database Management Conference 2011, Portland Oregon
- HPDC 2011, San Jose, CA, 2011
- Workshop on Workflows in Support of Large-Scale Science, in conjunction with SC 2011
- Data Intensive Computing in the Clouds (DataCloud2011), San Jose, CA, 2011
- IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2011), Newport Beach, CA, 2011
- IPDPS 2011 PhD forum, Anchorage, Alaska, 2011
- IPDPS 2011, Anchorage Alaska, 2011
- e-Science 2010, Brisbane, Australia, 2010
- SC 2010, New Orleans, 2010
- CCGrid 2010, Australia, May 2010
- Grid 2010, Brussels, Belgium, October 2010
- 4th Int'l Workshop on Workflow systems in e-Science (WSES09), Shanghai, China, 2009
- High Performance Distributed Computing (HPDC 2009), Garching, Germany, June 2009
- SC 2008, Austin Texas, November 2008
- Grid 2008, Tsukuba, Japan, September 2008
- High Performance Distributed Computing (HPDC 2008), Boston, MA, June 2008
- e-Science 2007, Bangalore, India, December 2007
- NSF/Mellon Workshop on Scientific and Scholarly Workflow. Oct 3-5, 2007, Baltimore, MD
- CoreGRID Workshop on Grid Middleware, Dresden, June 18-19, 2007
- High Performance Distributed Computing (HPDC 2007), Monterey Bay California, June 27-29
- IEEE International Conference on Grid Computing (Grid 2007) (Vice Program chair for Scheduling, Resource Management and Runtime Environments), Grid 2006, Grid 2005
- Second International Conference on Grid computing, high-performance and Distributed Applications" (GADA'07)
- Workflow Systems in e-Science 2007, International Conference on Computational Science (ICCS2007)
- The 13th International Conference on Parallel and Distributed Systems, Hsintu, Taiwan, December 2007
- 3rd International Workshop on Grid and Peer-to-Peer based Workflows (GPWW), Brisbane, Australia, 2007
- IEEE International Symposium on Cluster Computing and the Grid, CCGrid 2007, 2006, 2005
- CoreGRID Workshop on Grid Middleware 2006
- First International Multiconference on Computer Science and Information Systems
- The 2006 International Conference on High Performance Computing and Communications, Grid and cluster computing topic. 2006.
- International Workshop on Workflow Systems in Grid Environments (WSGE06), October 21-23,

2006, Changsha, China.
- Challenges of Large Applications in Distributed Environments Workshop, CLADE 2009, 2008, 2007, 2006, 2005, 2004, 2003
- Fourth International Symposium on Parallel and Processing and Applications (ISPA'06), (Software and Applications Track), Sorrento, Italy, December 2006.
- 2nd International Workshop on Grid and Peer-to-peer based Workflows (GPWW 2006) ,Vienna, Austria on September, 2006, and 2005
- Scientific workflow management in e-Science, in conjunction with the International Conference on Computational Science (ICCS2006), May 2006.
- Statistical and Scientific Database Management (SSDBM) , 2006, 2005
- ICIW 2006 Web Service-based Systems and Applications track, February 2006
- International Workshop on Scientific Instruments and Sensors on the Grid, December 2005.
- Semantic Infrastructure for Grid Applications at CCGrid 2005
- European Grid Conference 2005
- Workshop on Web and Grid Services for Scientific Data Analysis (WAGSSDA), to be held in conjunction with the International Conference on Parallel Processing (ICPP-2005)
- IEEE International Conference on Services Computing (SCC 2004)
- International Conference on Semantics for a Networked World 2004
- 2nd European Across Grids Conference, 2004
- SC 2003, November 2003
- Heterogeneous Computing Workshop, 2003, 2004

Post Doctoral Advisor
- Paweł Żuk
- Loïc Pottier, LLNL
- Rafael Ferreira da Silva, ORNL
- Dariusz Krol, Samsung, Poland
- Rubing Duan, AStaR, Singapore

PhD Advisor
- Patrycja Krawczuk
- Tu Mai Anh Do
- George Papadeimitriou
- Gideon Juve, SpaceX
- Weiwei Chen, Google
- Gurmeet Singh, NetApps

- Habilitation Committee Member, Carlos Jaime Barrios Hernandes, ENS Lyon, 2025
- Habilitation Committee Member, Frédéric Suter, ENS Lyon, 2014

PhD Committee Member
- Laurens Versluis, Vrije University, Amsterdam, Netherlands, 2024
- Sara Moukir, Paris Saclay, Paris, France 2024
- Daniel Rosendo, INRIA, Rennes, France, 2023
- Jérôme Gurhem, University of Lille, France, 2020
- Valentin Honoré, Université de Bordeaux, France, 2020
- Carl Witt, Humboldt-Universität zu Berlin, Germany 2020
- Alexey Ilyushkin, Delft University of Technology, Netherlands, 2019
- Alexandru Uta, Vrije Universiteit, Amsterdam, Netherlands, 2017
- Gonzalo Rodrigo, Umea University, Sweden, 2017
- Matthew Brown, USC, Los Angeles, CA 2014
- Ozan Sonmez, Delft University, Netherlands, 2010

- Ivona Brandic, Technische Universität Wien, Austria, 2007
- Paul Roth, University of South Hampton, 2007
- Houda Lamehamedi, Rensselaer Polytechnic Institute, 2002.
- External Examiner for Masters' Candidate, McGill University, 2002.

Reviewer

Reviewer for journals such as the Journal of Grid Computing, Future Generations of Computer Systems, Journal of Parallel and Distributed Computing, IEEE Intelligent Systems, Informatica, IEEE Transactions on Parallel and Distributed Systems, Concurrency and Computation: Practice and Experience, ACM Computing Surveys

Reviewer for DOE, NSF, NIH, University of California Office of the President, INRIA, and European Commission, and other EU funding agencies.

Advisory Committee, Board Member

- Internet2, Board of Trustees, Member 2024 -
- DOE ASCAC Subcommittee Member on DOE User Facilities 2023-2024
- DOE ASCAC Subcommittee Member on U.S. Competitiveness 2022 – 2023
- Advisory Committee Member, Oak Ridge National Laboratory Computing and Computational Sciences Directorate , 2022-
- Advisory Committee Member, SGX3 - A Center of Excellence to Extend Access, Expand the Community, and Exemplify Good Practices for CI Through Science Gateways, 2022 –
- Advisory Committee Member, AI institute for Intelligent Cyberinfrastructure with Computational Learning in the Environment (ICICLE), 2021 –
- External Advisory Board, NSF Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE), 2021-
- EuroHPC eFlows4HPC project, 2022 -
- Workflows Community Initiative, 2021 –
- Trusted CI, an NSF Cybersecurity Center of Excellence, 2019 –
- Subject Matter Expert, NIH Stimulating Peripheral Activity to Relieve Conditions (SPARC) Program 2018- 2026
- DOE ASCAC Subcommittee Member on AI/ML, Data-intensive Science and High-Performance Computing (2019 – 2020)
- Sano – Centre for Computational Personalised Medicine, Krakow, Poland 2019-
- FONDA – Foundations of Workflows for Large-Scale Scientific Data Analysis, Berlin, Germany 2020-
- The Institute of Electronics, Communications and Information Technology (ECIT),
- Queen's University Belfast, 2018 –
- Advisory Committee Member, Lawrence Livermore National Laboratory, Comps Division, 2017
- NanoHub Project, https://nanohub.org/ 2015- 2018
- National Biomedical Computation Resource (NBCR) Project, http://nbcr.ucsd.edu/, 2016 – 2018

KEYNOTES AND INVITED TALKS

- eScience, Osaka Japan, September 2024, Keynote
- Lawrence Livermore National Laboratory Masterworks Series, Invited Talk
- Multicore, Christchurch, NZ, February 2024, Keynote
- HPC Asia, Nagoya, Japan, January 2024, Keynote
- Warsaw University, Warsaw, Poland, December 2023, Invited Talk
- CARLA 2023, The 10th Latin American Conference on High Performance Computing, Cartagena, Columbia, September 2023, Keynote
- Rennes University, June 2023, Invited Talk
- The 23rd International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2023),

Bangalore, India, May 2023, Keynote
- Indian Institute of Science, Bangalore, India, April 2023, Invited Talk
- Barcelona Supercomputing Center, Barcelona, Spain, March 2023, Invited Talk
- Sano – Centre for Computational Personalised Medicine, Krakow, Poland, January 2023, Invited Talk, Jeynote
- Center for High Performance Computing (CHPC) National Conference, Keynote, Pretoria, South Africa, December 2022
- IEEE International Conference on Cloud Engineering (IC2E), Keynote, Pacific Grove, September 2022
- Euro-Par'22, Keynote, Glasgow, UK, August 2022
- International Workshop on Parallel Programming Models and Systems Software for High-End Computing, Keynote, (Virtual), August 2022
- IEEE/ACM International Conference on Utility and Cloud Computing (UCC) (Virtual) 2020
- Euro-Par'20, Keynote, (Virtual), December 2020
- SC'19 invited talk, Denver, CO, November 2019
- Computer Science Department, Manchester University, November 2018, Manchester, UK,
- Cracow Grid Workshop (CGW), October 2018, Krakow, Poland,
- eResearch Australasia Conference, October 2017, Brisbane, Australia
- Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE5.2), October 2017, Auckland, NZ
- Workshop on Clusters, Clouds, and Data for Scientific Computing, October 2016, Lyon, France
- International Workshop on HPC Architecture, Software, and Applications at an Extreme Scale, September 2016, Wuxi, China.
- Smoky Mountains Computational Sciences and Engineering Conference, September 2016, Gatlingburg, TN
- Workshop on Modeling & Simulation of Systems and Applications, August 2016, Seattle, WA.
- CRA-W/CDC Distinguished Lecture event at the Southeast Women in Computing Conference (SEWIC), November, 2015
- Panelist at the White House National Strategic Computing Initiative Workshop, October 2015
- 11th IEEE International Conference on eScience, August 2015, Germany
- 6th Workshop on Scientific Cloud Computing, Portland, OR, June 2015
- 24th International Symposium High Performance and Distributed Computing, Portland, OR, June 2015
- Supercomputing Frontiers 2015, March 2015
- Oak Ridge National Laboratory, Seminar, September 2014
- University of Queensland /Monash University (MURPA/QURPA) Seminar, Summer 2014
- Sonoma State University, CA, Computer Science Colloquium, Spring 2014
- International Conference on Parallel Processing and Applied Mathematics. PPAM, Torun, Poland, September 2013 (keynote)
- Focused Technical Workshop on Network Issue for Life Sciences Research – LLNL, July 2013 (invited talk)
- Laurence Berkeley National Laboratory, "Workflow Technologies for Science Automation", Berkeley, CA, May 2013 (invited talk)
- AGH University of Science and Technology, "Science Platforms: Managing Workloads and Resources", Krakow, Poland, March 2013 (invited talk)
- Panel Member, CENIC 100G and Beyond Workshop, San Diego, CA, March 2013
- Polish-Japanese Institute of Information Technology, "Science Platforms: Research and Technologies to Computational Science in Virtual Environments", Warsaw, Poland, March 2013, (seminar)
- Institute of Fundamental Technological Research, Polish Academy of Sciences, "Science Platforms: Managing Computational Workloads and Resources", Warsaw, Poland, March 2013, (Distinguished Lecture)
- HUBbub'12, "Managing Workflows Within HUBzero: How to Use Pegasus to Execute Computational Pipelines", Indianapolis, Indiana, September 2012 (keynote)
- Clusters, Clouds, and Data for Scientific Computing, 2012, "Hosted Science: How to support complex

scientific applications on the cloud", Lyon Franc, September 2012 (invited talk)
- EuroPar'12, Rhodes, Greece, August 2012, (keynote)
- Invited Lecture Series, AGH University of Science and Technology, Krakow, Poland, March 2012
- The 6th Workshop on Workflows in Support of Large-Scale Science, Seattle, November 2011, (keynote)
- USC Global Conference, Hong Kong, October 2011 (panelist, The Grand Challenges of Engineering)
- International Supercomputing Conference (ISC) Cloud Conference, Mannheim, Germany, September 2011
- International Conference on Parallel Processing and Applied Mathematics. PPAM, Torun, Poland, September 2011 (keynote)
- Cracow Grid Workshop, Cracow, Poland, October 2010. (keynote)
- International Conference on Parallel Processing and Applied Mathematics. PPAM, Wroclaw, Poland , September 2009
- Cracow Grid Workshop, Cracow, Poland, October 2008. (keynote)
- CoreGrid Workshop, Crete, Greece, April 2008.
- AAAI Spring Symposium on Semantic Scientific Knowledge Integration, Stanford University, March 2008.
- The International Workshop on Performance Analysis and Optimization of High-End Computing Systems, in conjunction with SC'07, November 2007
- International Conference on Parallel Processing and Applied Mathematics. PPAM, Gdansk, Poland , September 2007
- Computer Science Department Colloquium, Southampton University, UK April 2007
- Computer Science Department Colloquium , King's College, London, UK, April 2007
- Colloquium, University of Vienna, Austria, June 2007
- Workshop on Scientific Workflows and Business workflow standards in e-Science, in Conjunction with e-Science 2006, Amsterdam, December 2006
- Workflow Optimization in Distributed Environments, Edinburgh, October 2006
- Manchester University, School of Computer Science Seminar, October 2006
- Louisiana State University, Computer Science Department Seminar, September 2006
- Cyberinfrastructure for Ocean Observations Workshop, September 2006
- Partnerships in Innovation: Serving a Networked Nation conference, National Archives and Records Administration, November 2004
- Astronomical Data Analysis Software & Systems (ADASS), October 2004
- SC4DEVO: Service Composition for Data Exploration in the Virtual Observatory, July 2004
- SSDBM 04 panel on Data Management on the Grid, June 2004
- Ground System Architectures Workshop (GSAW 2004), April 2004
- SDSC Computational Science Seminar Series (CSSS)., January 2004
- Rensselaer Polytechnic Institute, *GriPhyN: Data-Intensive Science in Grid Environments*, Troy, NY, January 2002.
- VIRGO Laboratory, GriPhyN (Grid Physics Network) and LIGO: Data-Intensive Science in Grid Environments, Cascina, Italy, September 2001.
- International Conference on Parallel Processing and Applied Mathematics. GriPhyN (Grid Physics Network): Enabling Data Intensive Science in Grid Environments. Naleczow, Poland, September 2001.
- Poznan Supercomputing and Networking Center, GriPhyN: Data-Intensive Science in Grid Environments, Poznan, Poland, September 2001.
- Mardi Gras Conference, GriPhyN (Grid Physics Network): Building a Data Grid Infrastructure for Experimental Physics, Baton Rouge, LA, February 2001.
- University of Texas at El Paso, MPI-Sim, an MPI Simulator in POEMS (Performance Oriented End-to-End Modeling System), El Paso, TX, August 2000.
- USC/ISI, POEMS: Performance Oriented End-to-End Modeling System, Marina Del Rey, CA, July 2000.
- Aerospace Corporation, Optimization in Parallel Discrete Event Simulation, Los Angeles, CA, July 1997.
- Institute of Fundamental Technological Research, Polish Academy of Sciences, Performance

Optimization in Parallel Discrete Event Simulation, Warsaw, Poland, June 1997.

TEACHING ACTIVITIES

- Guest Lecturer at the USC Computer Science Department
- Lecturer at the 2nd Karlsruhe Summer School on Service Research, September 2013
- Guest Lectures at the AGH University of Science and Technology, March 2013
- USC, Computer Science Department, CS 599 Introduction to Grid Computing (Graduate level), Fall 2007
- UCLA, Department of Computer Science, Guest Lecturer
  - CS 133, Parallel and Distributed Programming, an undergraduate level course in parallel programming. It covers architectural and language models of parallelism. The emphasis is learning to write parallel programs. Winter Term 1998, and 1999.
  - CS 233A, Parallel Programming, graduate course in parallel programming that covers in more depth the topics of CS 133. Emphasis is on examining state of the art research and individual research projects. Winter Term 1998, and 1999.
  - CS 239, Parallel Simulation, a follow-up course to CS 233A. Spring Term 1998.

MEDIA CITATIONS

- "USC Researcher Wins Prestigious Computing Award for Scientific Workflow Innovations" November 19, 2025 https://www.isi.edu/news/81015/usc-researcher-wins-prestigious-computing-award-for-scientific-workflow-innovations/
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- Ewa Deelman, 2025 Sidney Fernbach Memorial Award Profile, November 2025 https://www.computer.org/profiles/ewa-deelman
- "Universities Unite to Advance AI-Driven Workflow Management on Modern Cyberinfrastructure", August 12, 2025 https://www.isi.edu/news/79511/universities-unite-to-advance-ai-driven-workflow-management-on-modern-cyberinfrastructure/
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- "Self-learning neural network cracks iconic black holes", June 6, 2025 https://www.isi.edu/news/78584/self-learning-neural-network-cracks-iconic-black-holes/
- "Mapping Volcanic Hazards with Pegasus", March 11, 2025 https://viterbischool.usc.edu/news/2025/03/mapping-volcanic-hazards-with-pegasus/
- "Scientists Call for National Strategy on High-Performance Computing", February 20, 2025 https://www.isi.edu/news/972799/scientists-call-for-national-strategy-on-high-performance-computing/
- "Decoding Science Careers", December 16, 2025 https://www.isi.edu/news/74375/decoding-science-careers/
- "Optimizing Data Flow for Scientific Discovery" https://viterbischool.usc.edu/news/2024/05/optimizing-data-flow-for-scientific-discovery/
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- "Optimizing Data Flow for Scientific Discovery", May 13, 2024 https://viterbischool.usc.edu/news/2024/05/optimizing-data-flow-for-scientific-discovery/
- "The Real 'Deel': Ewa Deelman Sees the Future of High Performance Computing" https://sc23.supercomputing.org/2023/04/the-real-deel-ewa-deelman-sees-the-future-of-hpc/

- "The Magic Behind the Microscope", April 17, 2023, https://viterbischool.usc.edu/news/2023/04/the-magic-behind-the-microscope/
- "ISI Names Two New Fellows", February 27, 2023 https://viterbischool.usc.edu/news/2023/02/isi-names-two-new-fellows/
- "A Prescription for the Future of Healthcare: AI, Databases and Video Games", September 14, 2022 https://viterbischool.usc.edu/news/2022/09/a-prescription-for-the-future-of-healthcare-ai-databases-and-video-games/
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- "ISI talented early career researchers recognized again by NSF", April 14, 2022, https://viterbischool.usc.edu/news/2022/04/isi-talented-researchers-recognized-again-by-nsf/
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- "The Arecibo Observatory, UCF, TACC, the University of Puerto Rico, EPOC, Globus, CICoE Pilot partner to move telescope data to Ranch system", April 2021, https://www.tacc.utexas.edu/-/continuing-arecibo-s-legacy
- "George Papadimitriou Wins PEARC20 Award for Creating System for Facilitating Efficiency of Research", https://www.isi.edu/cst/news/40213/george-papadimitriou-wins-pearc20-award-for-creating-system-for-facilitating-efficiency-of-research, December 2020
- Celebrating Women in NITRD, August 2020 , https://www.nitrd.gov/about/women-in-nitrd/
- "Researchers Develop Platform to Improve Weather Forecasting", https://www.isi.edu/cst/news/28256/researchers-develop-platform-to-improve-weather-forecasting, March 2020
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- "Ewa Deelman Named AAAS Fellow" https://viterbischool.usc.edu/news/2019/11/ewa-deelman-named-aaas-fellow/, November 2019
- "Four USC professors selected as fellows of renowned scientific society AAAS", https://news.usc.edu/163211/four-usc-professors-aaas-fellows-scientific-society/, November 2019
- USC professors recognized for work in a variety of scientific fields, http://www.uscannenbergmedia.com/2019/12/05/usc-professors-recognized-for-work-in-a-variety-of-scientific-fields/ , December 2019
- "USC ISI To Pilot Cyberinfrastructure Center of Excellence for NSF's Largest Scientific Facilities",

https://viterbischool.usc.edu/news/2018/10/usc-isi-to-pilot-cyberinfrastructure-center-of-excellence-for-nsfs-largest-scientific-facilities/, October 2018

- "ISI Researchers to "Model the World" with New DARPA Award", March 22, 2018, https://viterbischool.usc.edu/news/2018/03/modeling-impact-climate-human-activities-water-food/
- "ISI Research Director Ewa Deelman Named IEEE Fellow", https://www.isi.edu/news/story/334, USC/ISI Jan 2018
- "Nobel Prize-winning discovery on gravitational waves came about with contributions from USC scientists", USC https://news.usc.edu/129550/nobel-prize-winning-discovery-on-gravitational-waves-came-about-with-contributions-from-usc-scientists/, USC, Oct. 2017
- "ISI's Pegasus Program Contributed to New Gravitational-Wave Detector Discovery", https://www.isi.edu/news/story/323, USC/ISI, October 2017
- "Super-Efficient Workflows, Deelman is impacting science applications", IEEE Women in Engineering Magazine, June 2017
- "Recipients of ISI's Institute Achievement Award Announced", https://www.isi.edu/news/year/2017 USC/ISI, Jan 2017
- "Ewa Deelman and Yolanda Gil co-author Science Article on Reproducibility", http://www.isi.edu/news/story/278, USC/ISI, December 2016
- "How ISI's Pegasus helped scientists make the discovery of the century" , USC Viterbi School of Engineering, http://viterbi.usc.edu/news/news/2016/isi-gravitational-waves-software-pegasus.htm, Feb 2016
- "Caltech wasn't the only SoCal school helping discover gravitational waves", mentions the use of Pegasus for managing workflows used to discover gravitational waves, Southern California NPR Station: KPCC, February 11, 2016 http://www.scpr.org/news/2016/02/11/57446/caltech-wasn-t-the-only-socal-school-helping-disco/
- Ewa Deelman Awarded Prestigious HPDC Honor, September 2015, http://www.isi.edu/news/story/251
- CENIC Star Performer: Ewa Deelman, USC, January 2014, http://www.cenic.org/p=1554/
- Project ADAMANT Wins Innovations in Networking Award for XD Apps, March 13, 2013, http://www.cenic.org/p=356/
- How can we use HPC platforms to help dig out new exoplanets?, iSGTW, April 3, 2013, http://www.isgtw.org/feature/how-can-we-use-hpc-platforms-help-dig-out-new-exoplanets
- Pegasus project leader, White House advanced manufacturing adviser to speak at HUBzero conference, iTap Newsroom (Purdue IT News), July 2012 https://hubzero.org/news/hubbub2012-speakers
- $27 million award bolsters research computing grid, R&D Magazine, June 2012 http://www.rdmag.com/news/2012/06/27-million-award-bolsters-research-computing-grid
- NHGRI broadens sequencing program focus on inherited diseases, medical applications, NIH News, July 2012 https://www.genome.gov/27546261
- Grants to USC Faculty Top $100 Million, USC News, November 11, 2009, http://uscnews.usc.edu/university/grants_to_usc_faculty_top_100_million.html
- ISI Researchers Will Support New Brain Gene Expression Project, ISI News, November 2, 2009 http://www3.isi.edu/about-news_story.htm?s=220
- USC Neuroscientists to Map Gene Expression, USC News, October 5, 2009 http://uscnews.usc.edu/science_technology/usc_neuroscientists_to_map_gene_expression.html
- Viterbi School's ISI Part of FutureGrid Test Bed, USC Viterbi News, September 2009 http://viterbi.usc.edu/news/news/2009/viterbi-school-s213206.htm
- ISI Part of FutureGrid Test Bed, ISI News, September 11, 2009 http://www3.isi.edu/about-news_story.htm?s=216
- Image of the week - Earth-quaking science in Hollywood, international Science Grid this Week, iSGTW online, January 2008, http://www.isgtw.org/?pid=1000848

- Feature - Montage a rising star in grid-enabled sky mosaics, international Science Grid this Week, iSGTW online, December 2007, http://www.isgtw.org/?pid=1000731
- Feature - Pegasus invites new communities to saddle up, international Science Grid this Week, iSGTW online, September 2007, http://www.isgtw.org/?pid=1000664
- ISI Leads $13.8 Million E-Science Effort to Tame Terabyte Torrents, ISI News, http://www.isi.edu/news/news.php?story=165
- Rensselaer Supercomputers Battle Lyme Disease, Rensselaer Polytechnic Institute Review Vol. 17 No. 18, June 14, 1996

GRANTS

- PI, CSSI: Frameworks: Applying Artificial Intelligence Advances to the Next Generation of Workflow Management on Modern Cyberinfrastructure, 6/15/2025 – 5/31/2030, $5,000,000, NSF.
- Co-PI, CICI:TCR:SAFARI: Scientific Analytics, Forensics, and Reproducibility for Workflows in CI, 10/1/2025 – 9/30/2028, $580,000, NSF.
- PI, Collaborative Research: Cross-Cutting Improvements: Open Science Roadmap for Research Infrastructures, 10/1/2025 – 9/30/2028, $141,000, NSF.
- PI, Collaborative Research: CyberTraining: Implementation: Medium: Cyberinfrastructure Training and Education for Leveraging Advanced Electron Microscopy in Materials Science, 7/1/2025 – 6/30/2028, $310,000, NSF.
- PI, CI CoE: CI Compass: An NSF Cyberinfrastructure Center of Excellence for Navigating the Major Facilities Data Lifecycle, 07/15/2021-06/30/2026, $9,000,000, NSF
- PI, OAC Core: Edge to Cloud Workflows: Advancing Workflow Management in the Computing Continuum, 10/1/2024 – 9/30/2027, $600,000, NSF.
- PI, Exploring the Power of Distributed Intelligence for Resilient Scientific Workflows, 06/1/2023 – 5/31/2028, $8,750,000, DOE
- Sr. Personnel, “Partnership to Advance Throughput Computing (PATh)”, 10/01/2020 – 9/31/2026, $1,296,000, NSF
- Co-PI, Collaborative Research: CyberTraining: Implementation: Medium: CyberInfrastructure Training and Education for Synchrotron X-Ray Science (X-CITE), 07/01/2023 – 6/30/2026, $318,000, NSF
- Co-PI, Collaborative Research: SHF: Small: Model-driven Design and Optimization of Dataflows for Scientific Applications, 10/1/2023 – 9/1/2025, $200,000, NSF
- Co-PI ,“Track 2: Customized Multi-tier Assistance, Training, and Computational Help (MATCH) for End User ACCESS to CI, 5/1/2022- 4/30/2027, $10,491,277, NSF
- PI, “Collaborative Research: OAC Core: Simulation-driven runtime resource management for distributed workflow applications, 10/1/2021 – 9/30/2024, $220,000, NSF
- PI, Collaborative Research: Elements: Simulation-driven Evaluation of Cyberinfrastructure Systems, 01/01/2021 - 07/31/2024, $315,027, NSF
- PI, “PosEiDon: Platform for Explainable Distributed Infrastructure 10/1/2021- 09/30/2024, $3,750,000, DOE
- PI, Collaborative Research: EAGER: VisDict - Visual Dictionaries for Enhancing the Communication between Domain Scientists and Scientific Workflow Providers, 5/15/2021 – 4/14/2023, $100,000, NSF
- Co-PI, “PPoSS: Planning: Performance Scalability, Trust, and Reproducibility: A Community Roadmap to Robust Science in High-throughput Applications”, 10/01/2020- 09/30/2021, $70,000, NSF
- Co-PI, “CC* Integration-Large: An 'On-the-fly' Deeply Programmable End-to end Network-Centric Platform for Edge-to-Core Workflows”, 10/01/2020 – 9/30/2022, $199,999, NSF
- PI, “Collaborative Research: EAGER: Leveraging Advanced Cyberinfrastructure and Developing Organizational Resilience for NSF Large Facilities in the Pandemic Era”, 9/1/2020 – 8/31/2022, $130,000, NSF
- PI, “Collaborative Research: EAGER: Advancing Reproducibility in Multi-Messenger Astrophysics”, 8/1/2020 – 7/31/2021, $100,000, NSF
- PI, “Connecting Large NSF Facilities Cyberinfrastructure Workshop”, 6/1/2019 - 5/31/2020,

$96,402, NSF

- PI, “Cyberinfrastructure Center of Excellence Pilot Study”, 10/01/2018 – 09/30/2020, $3,000,000, NSF
- Co-PI, “CC* Integration: Delivering a Dynamic Network-Centric Platform for Data-Driven Science (DyNamo), 08/01/2018- 7/31/2020 , $330,000, NSF
- Sr. Personnel, Center for Genomic Studies on Mental Disorders, 3/01/2018 – 2/28/2023, $1,605,134, NIH
- Co-PI, “CICI: SSC: Integrity Introspection for Scientific Workflows (IRIS)”, 09/01/2018 – 8/31/2021, $350,000, NSF
- PI, Collaborative Research: EAGER: Exploring and Advancing the State of the Art in Robust Science in Gravitational Wave Physics, 05/01/2018 – 4/30/2020; $75,000.00; NSF
- PI, “ Panorama 360: Predictive Modeling and Diagnostic Monitoring of Extreme Science Workflows, 9/2017 – 8/2021, $1,275,000, DOE.
- PI, “SI2-SSI: Pegasus: Automating compute and data intensive science”, 4/1/17 – 3/31/23, $2,500,00, NSF
- Co-PI, BIGDATA: IA: Collaborative Research: In Situ Data Analytics for Next Generation Molecular Dynamics Workflows, 10/1/2017-9/30/2021, $516,000, NSF
- Co-PI, “MINT: Model INTegration through Knowledge-Rich Data and Process Composition”, 12/01/2017 – 11/30/2021, $12,979,881, DARPA
- PI, “Repository and Workflows for Accelerating Circuit Realization (RACE)”, 4/2016- 7/2019, $3,793,062, DARPA
- PI, “Big Data Meets HPC” 12/2016 – 08/2017, $50,000, LLNL LDRD
- Co-PI, Collaborative Research: CICI: Secure and Resilient Architecture: Scientific Workflow Integrity with Pegasus, 09/2016- 8/2019; $290,000, NSF
- Sr. Personnel, XSEDE 2.0: Integrating, Enabling and Enhancing National Cyberinfrastructure with Expanding Community Involvement, 9/2016-8/2021, $480,000, NSF
- Sr. Personnel, Natural Hazards Engineering Research Infrastructure: Computational Modeling and Simulation Center, 10/2016-9/2021, $433,340, NSF
- PI, “A Data Analytics Approach to Improving Simulation Workflow”, 11/2015 - 05/2016, LLNL LDRD
- PI, Predictive Modeling and Diagnostic Monitoring of Extreme Science Workflows, DOE, 9/2014-8/2017, $3,824,927
- Co-PI, CIF21 DIBBs: Domain-aware management of heterogeneous workflows: Active data management for gravitational-wave science workflows, NSF, 10/2014-9/2017, $444,850
- PI, XSEDE Scientific Workflow Application Support Specialist, (XSEDE), 9/2013 – 06/2015, NSF, $220,000
- Co_PI, The Center for Genomic Studies of Mental Disorders, 06/2013 – 05/2018, NIMH, $1,879,412
- Co-PI, PAGE II Coordinating Center, 06/13 – 05/17, NHGRI, $435,999
- PI, Collaborative Research: CC-NIE Integration: Transforming Computational Science with ADAMANT (Adaptive Data-Aware Multi-domain Application Network Topologies), January 2013-December 2014, NSF, $204,070

  Integrating resource provisioning and workflow execution on Clouds.
- Sr. Personnel, The Open Science Grid The Next Five Years: Distributed High Throughput Computing for the Nation’s Scientists, Researchers, Educators, and Students, August 2012-July 2017, NSF, $913,748

  Supporting computations on the Open Science Grid.
- Co-PI dV/dt – Accelerating the rate of progress towards extreme scale collaborative Science, September 2012-August 2015, DOE, $744,606

  Conducting research in resource planning on dynamic resources for complex applications.
- PI, SI2-SSI: Distributed Workflow Management Research and Software in Support of Science, April 2012-March 2016, NSF, $2,153,597

  Continued development and support of the Pegasus Workflow Management System.
- Co-PI rSeq: Robust and Portable Workflow-based tools for mRNA and Genome re-sequencing,

February 2012-December 2014, NIH, $338,330

Developing and supporting RNA_Seq workflows.

- Co-PI, EarthCube Community Workshop: Designing A Roadmap for Workflows in Geosciences, April 2012-March 2013, NSF, $15,432

  Organizing and participating in discussion on the future of the Geosciences cyberinfrastructure.
- PI, The Role of Software and Software Institutes in Computational Science Over Time, October 2012-September 2013, NSF $74,430

  Organizing a workshop regarding the future of Cyberinfrastructure.
- Sr. Personnel, Geoinformatics: A Petascale Cyberfacility for Physics-Based Seismic Hazard Analysis (SCEC PetaSHA3 Project), NSF, July 2010-June 2012, $174,000

  Supporting the earthquake science workflows.
- Sr. Personnel, Sustaining and Extending the Open Science Grid: Science Innovation on a PetaScale Nationwide Facility, NSF December 2009-August 2011, $128,000

  Providing user support for the project
- PI, SDCI/STCI as the Software Supply Chain of the National Cyberinfrastructure Workshop, NSF, 2/1/2010- 1/31/2011, $89,968

  Organizing a workshop for the PI meeting for the NSF Office of Cyberinfrastructure SDCI and STCI programs
- Co-PI, Transcriptional Atlas of Human Brain Development, NIH, 9/1/2009-8/31/2011, $492,900

  Developing workflows for gene expression studies
- Sr. Personnel, FutureGrid: An Experimental, High-Performance Grid Test-bed, NSF, 10/1/2009-9/30/2013, $725,000

  Developing workflow technologies for virtual execution environments
- PI, STCI: Middleware for Monitoring and Troubleshooting of Large-Scale Applications on National Cyberinfrastructure, NSF, 9/1/2009-8/31/2012, $1,875,830

  Developing efficient, online workflow monitoring and troubleshooting capabilities.
- PI, STCI: Integrated Resource Provisioning Across the National Cyberinfrastructure in Support of Scientific Workloads, NSF, 9/1/09-8/31/2012, $1,611,038

  Developing tools that can provision computational resources in static and dynamics manner.
- Co-PI DC: Medium: Intelligent Data Placement in Support of Scientific Workflows, NSF, 09/01/2009-08/31/2012, $405,000

  Developing algorithms for coupling workflow and data management systems.
- Co-PI, Center for Genomic Studies of Mental Disorders, National Institutes of Health, 10/01/08 - 9/30/2013, $2,250,000

  Development of the Cyberinfrastructure and workflow technologies for the coordinating center.
- Sr. Personnel, Genomic Psychiatry Cohort, National Institutes of Health, 10/2008-9/2013, $300,000

  Development of the Cyberinfrastructure for a psychiatric study.
- Co-PI, NHGRI EpiGenVar Coordinating Center, National Institutes of Health, 7/1/2008-6/30/2012, $500,000

  Development of the Cyberinfrastructure and workflow technologies for the coordinating center.
- PI, Supporting Ocean Modeling With Workflow Technologies, Jet Propulsion Laboratory, 6/1/2008-5/31/2009, $70,000

  Development of workflows for and ocean forecasting system.
- PI, SDCI NMI Improvement: Pegasus: From Concept to Execution- - -Mapping Scientific Workflows onto the National Cyberinfrastructure, National Science Foundation, 09/01/2007 - 08/31/2012, $1,700,000

  Hardening of the Pegasus workflow software that manages execution of complex scientific workflows on distributed resources.
- PI, Designing Scientific Software one Workflow at a Time, National Science Foundation, 10/1/2007-9/30/2010, $313,556.

  Exploring the use of the workflow paradigm in the context of large-scale software design.

- Sr. Personnel, Cyberinfrastructure in Support of Research: A New Imperative, National Science Foundation, 10/01/2004 - 09/30/2008, $250,000

  This project, lead by NCSA developed technologies necessary to support a wide range of NSF applications.
- Co-PI, Scalable Cross-Organization Threat and Event Discovery through Grid Workflows, Air Force Research Lab, 10/1/2006 - 9/30/2010, $2,104,000

  This project, lead by ISI develops new techniques to optimize workflows representing large-scale data mining applications and to provide seamless access to distributed data sources.
- Co-PI, CSR-AES: Collaborative Research: Intelligent Optimization of Parallel and Distributed Applications, National Science Foundation, 08/01/2006 – 07/31/2009, $215,452.

  This project, lead by ISI develops new techniques to optimize workflows in distributed Systems.
- Sr. Personnel, Enabling Earthquake System Science Through Petascale Calculations (PetaShake), National Science Foundation, 10/01/2007-9/30/2009, $200, 000.

  Providing a cyberinfrastructure and workflow technologies for earthquake science applications.
- PI, Pegasus: Supporting LIGO Workflows on the Open Science Grid, National Science Foundation, 11/1/2006 – 10/31/2007, $102,000

  This project, lead by ISI will enable efficient execution of gravitational-wave physics applications on large grid deployments in conjunction with the efficient data management.
- Co-PI, Neuroscience: Collaborative Research (CRCNS): Assembling Visible Neurons for Simulations: Merging of High-throughput 3D Microscopies with Advanced Computational Tools, National Institute of Health (NIH), 10/01/2002 – 09/30/2006, $45,000

  This project, lead by SDSC, developed workflow software necessary to support complex tomographic image reconstruction on distributed resources.
- PI, Towards Cognitive Grids: Knowledge-Rich Services for Autonomous Workflow refinement and Robust Execution, National Science Foundation, 12/15/2004 – 11/30/2006 ,$200,000

  This project examined the use of semantic technologies to describe resources and services on the grid.
- Co-PI, WSW-06: 2006 Workshop on Challenges of Scientific Workflows, National Science Foundation, 05/01/2006 to 10/31/2007, $44,000

  Funding for the Workshop on the Challenges of Scientific Workflows

PUBLICATIONS

BOOK EDITOR

1. Workflows for e-Science: Scientific Workflows for Grids, Ian J. Taylor, Ewa Deelman, Dennis B. Gannon, Matthew Shields (Editors), Springer, January 2007

JOURNALS

1. Suter, F., Coleman, T., Altintaş, İ., Badia, R. M., Balis, B., Chard, K., Colonnelli, I., Deelman, E., Di Tommaso, P., Fahringer, T., Goble, C., Jha, S., Katz, D. S., Köster, J., Leser, U., Mehta, K., Oliver, H., Peterson, J.-L., Pizzi, G., Pottier, L., Sirvent, R., Suchyta, E., Thain, D., Wilkinson, S. R., Wozniak, J. M., Ferreira da Silva, R. (2026). A terminology for scientific workflow systems. *Future Generation Computer Systems*, 174, 107974. https://doi.org/10.1016/j.future.2025.107974
2. Balaprakash, P., Raghavan, K., Cappello, F., Deelman, E., Mandal, A., Jin, H., Mahmud, I., Thareja, K., Wu, S., Zuk, P., Kiran, M., Chen, Z., Di, S., & Wu, K., SWARM: Reimagining scientific workflow management systems in a distributed world. *The International Journal of High Performance Computing Applications*. 2025; 39(5):692-712. doi:10.1177/10943420251339317
3. Poczekajlo, P., Moroz, L., Deelman, E., & Gepner, P. (2025). Evaluation of new CORDIC algorithms implemented on FPGA for the Givens rotator. *Journal of Computational Science*, 87, 102567. https://doi.org/10.1016/j.jocs.2025.102567
4. Raghavan, K., Papadimitriou, G., Jin, J., Mandal, A., Kiran, M., Balaprakash, P., Deelman, E. Advancing anomaly detection in computational workflows with active learning, *Future Generation Computer Systems*, 166, 2025, https://doi.org/10.1016/j.future.2024.107608
5. Deelman, E., Dongarra, J., Hendrickson, B., Randles, A., Reed, D., Seidel, E., & Yelick, K. (2025).

High-performance computing at a crossroads. *Science*, 387(6736), 829–831. https://doi.org/10.1126/science.adu0801

6. Marquez, J., Cuendet, M. A., Caino-Lores, S., Estrada, T., Deelman, E., Weinstein, H., & Taufer, M. (2025). Increasing the efficiency of ensemble molecular dynamics simulations with termination of unproductive trajectories identified at runtime. *The Journal of Physical Chemistry A*, 129(9).
7. Cranganore, S. S., De Maio, V., Brandic, I., & Deelman, E. Paving the way to hybrid quantum–classical scientific workflows. *Future Generation Computer Systems*, *158*, 346–366. 2024 https://doi.org/https://doi.org/10.1016/j.future.2024.04.030
8. Afle, C., Miles, P. R., Caino-Lores, S., Capano, C. D., Tews, I., Vahi, K., Deelman, E., Taufer, M., & Brown, D. A. . *Reproducing the results for NICER observation of PSR J0030+0451, in Computing in Science & Engineering, vol. 25, no. 6, pp. 16-26, 2024 doi:10.1109/MCSE.2024.3381080 .*
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