

**John Towns**  
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**EDUCATION**

<i>University of Illinois, Urbana, IL</i>	
<b>M.S. in Astronomy</b>	<b>1991</b>
<i>University of Illinois, Urbana, IL</i>	
<b>M.S. in Physics</b>	<b>1990</b>
<i>University of Missouri – Rolla, Rolla, MO</i>	
<b>B.S. in Physics</b>	<b>1987</b>
Minor: Computer Science	

**FUNDED PROJECTS & RELATED EXPERIENCE**

<ul style="list-style-type: none"> <li>• <b>PI and Project Director, XSEDE (the Extreme Science and Engineering Discovery Environment)</b>            This position is responsible for providing leadership, strategic planning, and coordination for the XSEDE project (<a href="http://www.XSEDE.org">www.XSEDE.org</a>, \$126M / 5 years in initial award, \$110M / 5 year in second award). This involves providing leadership for the project and acting as an ambassador to other projects and activities. In addition, the role involves leading the annual processes to determine strategic objectives, development projects and operational activities. The role also represents the project to NSF and acts as the primary communication contact.</li> </ul>	<b>2011 – present</b>
<ul style="list-style-type: none"> <li>• <b>Co-Founder and Director, Illinois Campus Cluster Program</b>            In collaboration with the UIUC CIO and the Computational Science and Engineering (CSE) Director, initiated the Illinois Campus Cluster Program (<a href="http://campuscluster.illinois.edu">campuscluster.illinois.edu</a>) to provide research computing resources for faculty on the campus through a shared investment model. To date, this program has secured \$1.8M in support from the campus and \$1.4M in co-investment from faculty.</li> </ul>	<b>2010 – present</b>
<ul style="list-style-type: none"> <li>• <b>Chair, National Data Service Executive Committee</b></li> <li>• <b>Interim Director, the National Data Service</b>            This position is responsible for providing leadership, strategic planning, and coordination for the National Data Service (<a href="http://www.nationaldataservice.org">www.nationaldataservice.org</a>). National Data Service advances the frontiers of discovery and innovation by enabling open sharing of data and increased collaboration within and across fields, disciplines, and institutions by developing an open environment of federated, interoperable, and integrated national-scale services.</li> </ul>	<b>2016 - 2018</b> <b>2014 - 2018</b>
<ul style="list-style-type: none"> <li>• <b>Member, Board of Directors, Compute Canada – Calcul Canada</b></li> </ul>	<b>2012 – 2017</b>
<ul style="list-style-type: none"> <li>• <b>Chair, TeraGrid Forum</b></li> <li>• <b>Interim co-Chair, TeraGrid Forum</b>            This elected position is responsible for providing leadership, strategic planning, and coordination for the TeraGrid Forum, the leadership and management body for the TeraGrid Project (~\$65M/year).</li> </ul>	<b>2008 – 2011</b> <b>2007 – 2008</b>

<ul style="list-style-type: none"> <li>• <b>PI, NCSA TeraGrid Resource Provider, HPCOPS and co-PI, CORE Services.</b> Responsible for executing on the NCSA TeraGrid Resource provider award (\$14.9M, 5 year award), the HPCOPS supplement to that award (\$17.8M, 2 year award) and the NCSA portion of the CORE Services award (\$2.4M, 2 year award) supporting NCSA's production cyberinfrastructure resources as part of the TeraGrid.</li> </ul>	<p><b>2009 – 2012</b></p>
<ul style="list-style-type: none"> <li>• <b>PI, Computational Chemistry Grid: Production Cyberinfrastructure for Computational Chemistry</b> Responsible for executing on the NCSA portion of a three year, \$2.7M grant to deploying and supporting production cyberinfrastructure to support computational chemistry research.</li> </ul>	<p><b>2004 – 2007</b></p>
<ul style="list-style-type: none"> <li>• <b>Principal Investigator, National Laboratory for Applied Network Research (NLNR) – Distributed Applications Support Team</b> Responsible for executing on an initial \$2.8M, three year grant followed by a \$2.5M, three year grant, both funded by the National Science foundation involving all aspects of development, planning, budgeting, staffing and reporting. The Distributed Applications Support Team offers support for researchers working with high-performance network applications and assists in the development of distributed applications and tools.</li> </ul>	<p><b>1997 - 2006</b></p>
<p><b>Additional Funded Projects:</b></p> <ul style="list-style-type: none"> <li>• Co-PI on <b>BIGDATA: IA: Collaborative Research: Understanding the Financial Market Ecosystem:</b> PI: Mao Ye (Illinois), Source: NSF, \$407,585, 11/2018-10/2022</li> <li>• Co-PI on <b>ACCESS to Terra Data Fusion Products:</b> PI: Larry Di Girolamo (Illinois), Source: NASA, \$999,701, 7/2016-6/2018.</li> <li>• Co-PI on <b>Accelerating Access to Large Materials Datasets: Building, Deploying and Operating a Materials Data Facility:</b> PI: Ian Foster (Univ of Chicago), Source: NIST, \$150,000, 05/2015-04/2018.</li> <li>• Co-PI on <b>GECAT - Global Initiative to Enhance @Scale and Distributed Computing and Analysis Technologies to Address Grand Challenge Problems Around the World (Blue Waters):</b> PI: William Kramer (Illinois), Source: NSF, \$2M, 9/2013-8/2018</li> <li>• PI on <b>Planning for XSEDE: the eXtreme Science and Engineering Discovery Environment:</b> Source: NSF, \$1.6M, 04/2009-07/2010.</li> </ul>	<p><b>1997 - 2006</b></p>
<p>EMPLOYMENT</p>	
<p><i>Office of the CIO/Technology Services, University of Illinois, Urbana, IL</i></p> <p><b>Deputy CIO, Research IT</b> NCSA, Technology Services, and the Vice Chancellor for Research collaborated to create the position of Deputy CIO for Research IT. This position is focused on a crucial goal of the campus strategic plan: to foster scholarship, discovery, and innovation by supporting our faculty's needs for information technology. The Deputy CIO for Research IT works to enhance technologies and services used in research with particular attention on high-performance computing, high-speed networking, big data, and visualization. In addition, the Deputy CIO for Research IT collaborates with members of the campus research community to develop new initiatives, conduct ongoing needs assessments, and coordinate research IT activities across campus units.</p>	<p><b>2015 - Present</b></p>

<i>National Center for Supercomputing Applications (NCSA), University of Illinois, Urbana, IL</i>	
<p><b>Executive Director, Science &amp; Technology</b>  Further evolution of the NCSA organization has induced the creation of this new role to address the needs for leadership in several major areas of NCSA: (a) the creation of a new Research &amp; Education division to support engagement with campus researchers in computing and data intensive science and engineering research, (b) the @scale Program Office with a focus on the Blue Waters Project, (c) the Collaborative eScience Program Office (see below), and (d) the Cyber Security Directorate enable security solutions for the cyberinfrastructure of our national science and engineering research communities.</p>	<b>2014 - Present</b>
<p><b>Director, XSEDE Program Office</b>  <b>Director, Collaborative eScience Program Office</b>  Reorganization of NCSA to create an internal service organization focusing on the operational support needs of all NCSA projects produced the need for this role focusing on the administrative management of existing programs and the development of new programs. The scope of the programs range from local and regional (e.g. Illinois Campus Cluster Program, development of the campus Research Data Service) to national and international (e.g. the XSEDE program, development of proposals for national resources, development of international collaborations such as with the Cyprus Institute).</p>	<b>2014 - Present</b> <b>2011 - 2014</b>
<p><b>Director, Persistent Infrastructure Directorate</b>  <b>Division Director, Scientific Computing</b>  <b>Senior Associate Director, Scientific Computing and Visualization</b>  Responsible for strategic planning, architecture, scientific application support, visualization and virtual environments, hardware acquisition planning, networking, security, resource allocation, distributed applications support and services, and management of a national supercomputing facility and high performance computing environment. During 1998-1999, responsible for the programmatic development and administrative management of the Alliance Center for Collaboration, Education, Software and Science located in Washington, DC (ACCESS-DC). During 1997-2004, served on National Computational Science Alliance Executive Committee and as technical and administrative liaison to the Alliance Partners for Advanced Computational Services (PACS). Starting in 2004 through 2008, responsible for co-leading the activities of the Cyberinfrastructure Partnership, a collaboration with the San Diego Supercomputer Center to provide key experience with the coordination critical to the creation of a linked cyberinfrastructure environment</p>	<b>2004 – 2011</b> <b>1999 – 2004</b> <b>1998 – 1999</b>
<p><b>Associate Director, Scientific Computing</b>  Responsible for strategic planning, scientific application support, visualization production, resource allocation and management of a national supercomputing facility and local high performance computing environment. In 1997 directing the integration of all high-end user support, visualization production, applications performance and algorithmic application, resource management, and many scientific disciplinary specific support groups to form the 50-FTE Scientific Computing division. Led efforts in integrating all these efforts to span the 100+ institution collaboration of the National Computational Science Alliance.</p>	<b>1997 – 1998</b>
<p><b>Coordinator, NCSA Alliance Programs</b>  Coordinate the formation of two international coalitions of corporate, government and academic sites which have scalable, superscalar microprocessor based systems similar to those at the NCSA.</p>	<b>1995 – 1997</b>

<p><b>Manager, SDG Software Technical Support Team</b> Responsible for bringing together technical support personnel in order to provide technical assistance to users of NCSA Mosaic, NCSA HTTPd and Habanero world-wide.</p>	<p><b>1995 – 1997</b></p>
<p><b>Team Leader, NCSA High-Performance Computing Consulting Services</b> Responsible for the management of user support functions of a national supercomputing facility and local high performance computing environment.</p>	<p><b>1993 – 1997</b></p>
<p><b>Research Programmer, Numerical Relativity Group</b> Numerical modeling of the Einstein equations for the case of black hole space-times (General Relativity). Emphasis on porting codes across architectures (Cray, Connection Machine and Convex), and development of efficient linear system solvers for elliptic partial differential equations</p>	<p><b>1992 - 1993</b></p>

PUBLICATIONS

- **Towns, John**, "Toward an Open, Sustainable National Advanced Computing Ecosystem," in *Computing in Science & Engineering*, vol. 20, no. 5, pp. 39-46, Sep./Oct. 2018. doi: 10.1109/MCSE.2018.05329814
- **Towns, John**; Gerstenecker, David; Herriott, Laura; Hetrick, Ashley; Imker, Heidi J.; Larrison, Chris; Poole, Marshall Scott; Shaffer, Eric Gene; Smith, Tracy; Thompson, Chuck; Watson, Rob, "University of Illinois Year of Cyberinfrastructure Final Report," University of Illinois at Urbana-Champaign, December 2, 2015. <http://hdl.handle.net/2142/88444>
- **John Towns**, Timothy Cockerill, Maytal Dahan, Ian Foster, Kelly Gaither, Andrew Grimshaw, Victor Hazlewood, Scott Lathrop, Dave Lifka, Gregory D. Peterson, Ralph Roskies, J. Ray Scott, Nancy Wilkins-Diehr, "XSEDE: Accelerating Scientific Discovery", *Computing in Science & Engineering*, vol.16, no. 5, pp. 62-74, Sept.-Oct. 2014, doi:10.1109/MCSE.2014.80
- Thomas R Furlani, Barry L Schneider, Matthew D Jones, **John Towns**, David L Hart, Steven M Gallo, Robert L DeLeon, Charng-Da Lu, Amin Ghadersohi and Ryan J Gentner. "Using XDMoD to facilitate XSEDE operations, planning and analysis." *Proceedings of the Conference on Extreme Science and Engineering Discovery Environment: Gateway to Discovery*. San Diego, California: ACM, 2013. 46.
- Katz, Daniel S., David Hart, Chris Jordan, Amit Majumdar, J. P. Navarro, Warren Smith, **John Towns**, Von Welch, and Nancy Wilkins-Diehr. "Cyberinfrastructure usage modalities on the TeraGrid." In *Parallel and Distributed Processing Workshops and Phd Forum (IPDPSW), 2011 IEEE International Symposium on*, pp. 932-939. IEEE, 2011
- Katz, Daniel S., Callaghan, Scott, Harkness, Robert, Jha, Shantenu, Kurowski, Krzysztof, Manos, Steven, Pamidighantam, Sudhakar, Pierce, Marlon, Plale, Beth, Song, Carol, **Towns, John**. "Science on the TeraGrid." *Computational Methods in Science and Technology, Special*, pp. 81-97, 2010.
- Catlett, C., W.E. Allcock, P. Andrews, R. Aydt, R. Bair, N. Balac, B. Banister, T. Barker, M. Bartelt, P. Beckman, F. Berman, G. GBertoline, A. Blatecky, J. Boisseau, J. Bottum, S. Brunett, J. Bunn, M. Butler, D. Carver, J. Cobb, T. Cockerill, P.F. Couvares, M. Dahan, D. Diehl, T. Dunning, I. Foster, K. Gaither, D. Gannon, S. Goasguen, M. BGrobe, D. Hart, M. Heinzl, C. Hempel, W. Huntoon, J. Insley, C. Jordan, I. Judson, A. Kamrath, N. Karonis, C. Kesselman, P. Kovatch, L. Lane, S.L. Lathrop, M., D. Lifka, L. Liming, M. Livny, R. Loft, D. Marcusiu, J. Marsteller, S. Martin, D.S. McCaulay, J. McGee, L. McGinnis, M.A. McRobbie, P. Messina, R. Moore, J.P. MNavarro, J. Nichols, M.e. Papka, R. Pennington, G. Pike, J. Pool, R. Reddy, D. Reed, T. TRimovsky, E. Roberts, R. Roskies, S. Sanielevici, J.R. Scott, A. Shankar, M. Sheddon, M. Showerman, D. Simmel, A. Singer, D. Skow, S. Smallen, W.S. Smith, C., R. Stevens, C.A. Stewart, R.B. Stock, N. Stone, **J. Towns**, T. Urban, M. Vildibill, E. Walker, V. Welch, N. Wilkins-Diehr, R. Williams, L. Winkler, L. Zhao and A. Zimmerman. "TeraGrid: Analysis of Organization, System Architecture, and Middleware Enabling New Types of

Applications." In: *Advances in Parallel Computing Volume 16, 2008: High Performance Computing and Grids in Action*. L. Grandinetti, ed. IOS Press, Amsterdam, 2008.

- Ganguly, Bishwaroop, Gagan Hasteer, and **John Towns**. "HPFStab: An HPF Conjugate Gradient Library." (2007).
- Andrews, Phil, Martin Margo, Amit Chourasia, and **John Towns**. "Enabling HPC E-Science via Integrated Grid Infrastructure." In *e-Science and Grid Computing, 2006. e-Science'06. Second IEEE International Conference on*, pp. 156-156. IEEE, 2006.
- Litvin, V., H. Newman, S. Shevchenko, S. Koranda, B. Loftis, **J. Towns**, M. Livny, P. Couvares, T. Tannenbaum, and J. Frey. "Prototype of GRID infrastructure for  $H \rightarrow \gamma\gamma$  study with full QCD background simulation and reconstruction for CMS at LHC." *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 502, no. 2 (2003): 453-455.
- Litvin, V. A., H. Newman, S. Koranda, B. Loftis, **J. Towns**, M. Livny, P. Couvares, T. Tannenbaum, and J. Frey. "Grid infrastructure for Caltech CMS production on Alliance resources." (2001).
- Ferguson, James W., and **John Towns**. "The Alliance Grid." *Advances in Engineering Software*, 32, no. 5 (2001): 417-422.
- Koranda, Scott, Loftis, Bruce, and **Towns, John**, "User Support and the Virtual Machine Room" In *Proceeding of the CUG Summit 2000*, 2000.
- Seidel, Edward, Anninos, Peter, Camarda, Karen, Massó, Joan, Suen, Wai-Mo, Tobias, Malcolm, **Towns, John**, "3-D Numerical Relativity at NCSA" In *Proceedings of the Seventh Marcel Grossman Meeting on recent developments in theoretical and experimental general relativity, gravitation, and relativistic field theories*, p644, 1996
- Anninos, Peter, Joan Massó, Edward Seidel, Wai-Mo Suen, and **John Towns**. "Three-dimensional numerical relativity: The evolution of black holes." *Physical Review D* 52, no. 4 (1995): 2059.
- Bernstein, David, David Hobill, Edward Seidel, Larry Smarr, and **John Towns**. "Numerically generated axisymmetric black hole spacetimes: Numerical methods and code tests." *Physical Review D* 50, no. 8 (1994): 5000.
- Bernstein, David, Hobill, David, Seidel, Edward, **Towns, John**, "Gravitational Waves from Dynamic Black Hole Spacetimes" In *Proceedings of the 5th Canadian Conference on General Relativity and Relativistic Astrophysics*, p312, 1994.
- Anninos, P., D. Bernstein, D. Hobill, E. Seidel, L. Smarr, and **J. Towns**. "Computational Astrophysics: Gas Dynamics and Particle Methods." (1994).
- **Towns, John**, and Edward Seidel. "A review of five linear system solvers used for elliptic partial differential equations." *NCSA data link* (1992).

#### INVITED TALKS (PAST 4 YEARS ONLY)

- Invited Talk: "Machine Learning: resources and trends from an XSEDE perspective" Deep Learning for MMA: Real-time Discovery at Scale, Urbana, Illinois, October 2018.
- Invited Talk: "Supporting Research Communities with XSEDE" Iowa Informatics Initiative Symposium, Iowa City, Iowa, March 2018
- Invited Talk: "Overview of XSEDE Systems Engineering" MAGIC Meeting, Washington, DC, 3 June 2015, <http://www.slideshare.net/jtownsil/overview-of-xsede-and-introduction-to-xsede-20-and-beyond>.
- Invited Talk: "Supporting Research Communities with XSEDE" The Swedish National Infrastructure for Computing (SNIC) User Forum 2014, Linköping, Sweden, 15-16 December 2014, <http://www.slideshare.net/jtownsil/supporting-research-communities-with-xsede>.
- Invited Talk: "XSEDE: A Digital Ecosystem Enhancing Productivity for All Science & Engineering"

High-Performance & Distributed Computing for Polar Sciences, 4-5 December 2014, New Brunswick, New Jersey, [http://geography.rutgers.edu/keepconnected/events-page/icalrepeat\\_detail/2014/12/04/85/-/](http://geography.rutgers.edu/keepconnected/events-page/icalrepeat_detail/2014/12/04/85/-/).

- Invited Colloquium: "XSEDE: A Digital Ecosystem Enhancing Productivity for All Science & Engineering"

National Institute of Standards and Technology, 19 September 2014, Washington, DC, <http://www.slideshare.net/jtownsil/xsedecosystemsept2014>.

- Keynote Address: "XSEDE and Building a National/International Cyberinfrastructure" Advanced Computing – Transforming Research: A Planning Workshop, 13 Feb 2014, Toronto, Ontario, Canada, <http://www.slideshare.net/jtownsil/xsede-at-orionworkshopfeb2014>.

## PUBLIC SERVICE

- Member, Women in HPC Steering Committee, 2018 – present
- Member, XD Metrics Service (XMS) Advisory Committee, 2017 – present
- Member, Aristotle Cloud Federation External Advisory Board, 2015 – present
- Chair, Advanced Computing Innovation Partnership (ACIP), 2014- present
- Member, HathiTrust Research Center Advisory Board, 2011 – present
- Co-Founder, LCI (the Linux Clusters Institute), 1999 – present  
Provide education and advanced technical training on the deployment and use of computing clusters to the high performance computing community worldwide.
- Member, Advanced Cyberinfrastructure - Research and Education Facilitators (ACI-REF) Advisory Board, 2014 – 2018
- Member, Internet2 High Performance & Research Computing Program Advisory Group, 2014 – 2017
- Member, EarthCube Test Enterprise Governance Advisory Committee, 2013 – 2016
- Member, Swedish National Infrastructure for Computing Scientific Advisory Committee, 2013 – 2017
- Member, Blue Ribbon Committee for the University of Oklahoma, Review of the University's Existing and Planned Information Technology Support of Research and Related Education Activities, Fall 2012
- Member, User Advisory Board, FutureGrid Project, 2010 – 2014
- University of Illinois Committees:
  - IT Council/Council of Academic CIOs, 2012 – present
  - Executive Governance Committee for Data Center Consolidation, 2010 – present
  - Past Committees:
    - Illinois Data Sciences Initiative Steering Committee, 2017-2018
    - IT Governance Research Committee, 2012 – 2016
    - Data Stewardship Committee, 2010 – 2013
    - Stewarding Excellent at Illinois: IT @ Illinois Project Team, 2010 – 2011
    - IT @ Illinois Initiative, 2008 – 2010
- Conferences and Workshops
  - Founding Chair, PEARC (<http://www.pearc.org/>) Steering Committee, 2016-present
  - *General Chair*, TeraGrid'11, July 2011
  - Finance Chair, 11<sup>th</sup> LCI International Conference on High Performance Clustered Computing, March 2010
  - *General Chair*, TeraGrid'09, July 2009
  - Finance and Logistics Chair, 10th LCI International Conference on High Performance Clustered Computing, March 2009

	<ul style="list-style-type: none"> <li>○ <i>Conference Chair</i>, 9th LCI International Conference on High Performance Clustered Computing, April 2008</li> <li>○ Finance and Logistics Chair, 8th LCI International Conference on High Performance Clustered Computing, May 2007</li> <li>○ Logistics and Finance Chair, 7th LCI International Conference on High Performance Clustered Computing, May 2006</li> <li>○ Logistics and Finance Chair, 6th LCI International Conference on High Performance Clustered Computing, April 2005</li> <li>○ <i>Conference Chair</i>, Linux Clusters: the HPC Revolution 2004, May 2004</li> <li>○ Steering Committee Member, The ClusterWorld Conference and Expo, June 2003</li> <li>○ Program co-Chair: Software, Linux Clusters: the HPC Revolution 2002, October 2002</li> <li>○ <i>Conference Chair</i>, Linux Clusters: the HPC Revolution 2001, June 2001</li> <li>○ Steering Committee Member and Instructor, LCI Workshops on High Performance Clustered Computing, 19 workshops held <ul style="list-style-type: none"> <li>▪ October 2008, February 2007, December 2006, February 2006, September 2005, June 2005, March 2005, September 2004, April 2004, February 2004, October 2003, August 2003, March 2003, January 2003, September 2002, June 2002, March 2002, January 2002, October 2001</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>• Frequent NSF reviewer</li> <li>• Occasional reviewer for DOE</li> <li>• Occasional international reviewer for European Union and national agencies in Europe and North America</li> </ul>
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MEMBERSHIPS	
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	<ul style="list-style-type: none"> <li>• American Physical Society (APS), since 1993</li> <li>• American Association for the Advancement of Science (AAAS), since 1993</li> <li>• IEEE Computer Society, since 1998</li> <li>• Association for Computing Machinery (ACM), since 1998</li> </ul>
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