

# James (Jim) Basney

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## Education

Doctor of Philosophy in Computer Sciences, University of Wisconsin-Madison. August 2001.

Dissertation Topic: Network and CPU Co-allocation in High Throughput Computing Environments

Advisor: Professor Miron Livny

Master of Science in Computer Sciences, University of Wisconsin-Madison. May 1997.

Bachelor of Arts in Computer Science and English, Oberlin College. May 1995.

## Professional Experience

Principal Research Scientist, National Center for Supercomputing Applications. July 2001 to Present.

Research Assistant, Condor Project, Department of Computer Sciences, University of Wisconsin-Madison. January 1996 to June 2001.

Teaching Assistant (Instructor), CS 302: Algebraic Language Programming in C++, Department of Computer Sciences, University of Wisconsin-Madison. Fall 1995.

## Research Grants and Contracts

PI: Sean Peisert, Co-PIs: Kelli Shute, Carolyn Ellis, James Marsteller, James Basney. Title: Trusted CI, The NSF Cybersecurity Center of Excellence. Duration: October 2024 to September 2029. Amount: \$29,920,722. Source: National Science Foundation Interagency Agreement #A2407-049-089-064206.0.

PI: Phuong Cao, Co-PIs: Ravishankar Iyer, James Basney, Alexander Withers. Title: FMitF: Track II: Bringing Verification-Aware Languages and Federated Authentication to Enable Secure Computing for Scientific Communities. Duration: August 2023 to January 2025. Amount: \$99,999. Source: National Science Foundation award number 2319190.

PI: James Basney, Co-PIs: Barton Miller, Sean Peisert, Kelli Shute. Title: CICI: CCoE: Trusted CI: Advancing Trustworthy Science. Duration: September 2022 to December 2024. Amount: \$6,498,601. Source: National Science Foundation award number 2241313.

PI: Emad Tajkhorshid, Co-PIs: James Basney, Seid Koric. Title: Collaborative Research: Frameworks: Cybershuttle: An end-to-end Cyberinfrastructure Continuum to accelerate Discovery in Science and Engineering. Duration: September 2022 to August 2027. Amount: \$1,600,001. Source: National Science Foundation award number 2209875.

PI: James Basney, Co-PIs: Brian Bockelman, Derek Weitzel. Title: CICI: UCSS: SciAuth: Deploying Interoperable and Usable Authorization Tokens to Enable Scientific Collaborations. Duration: July 2021 to June 2024. Amount: \$499,959. Source: National Science Foundation award number 2114989.

PI: Von Welch, Co-PIs: Barton Miller, James Basney, Sean Peisert, Kelli Shute. Title: CICI: CCoE: Trusted CI: Advancing Trustworthy Science. Duration: October 2019 to September 2024. Amount: \$12,486,560. Source: National Science Foundation award number 1920430.

PI: Marlon Pierce, Co-PIs: James Basney, Suresh Marru, Enis Afgan. Title: CICI: SSC: Securing Science Gateway Cyberinfrastructure with Custos. Duration: August 2018 to July 2023. Amount: \$997,672. Source: National Science Foundation award number 1840003.

PI: James Basney. Co-PIs: Alexander Withers, Brian Bockelman, Duncan Brown, and Todd Tannenbaum. Title: CICI: CE: SciTokens: Capability-Based Secure Access to Remote Scientific Data. Duration: July 2017 to June 2021. Amount: \$1,000,000. Source: National Science Foundation award number 1738962.

PI: Von Welch, Co-PIs: Randal Butler, James Basney, James Marsteller, Craig Jackson. Title: CICI: Center of Excellence: Center for Trustworthy Scientific Cyberinfrastructure. Duration: January 2016 through December 2018. Amount: \$4,999,709. Source: National Science Foundation award number 1547272.

PI: James Basney. Co-PI: Scott Koranda. Title: CICI: Secure Data Architecture: CILogon 2.0 - An Integrated Identity and Access Management Platform for Science. Duration: January 2016 through December 2018. Amount: \$499,973. Source: National Science Foundation award number 1547268.

PI: Jill Gemmill, Co-PIs: James Basney, James Bottum, Kuang-Ching Wang, Steven Corbato. Title: CC\*IIIE IAM: FeduShare: Bridging Campus and Research Identity and Access Management for Self-Managed Collaboration. Duration: October 2014 through September 2016. Amount: \$291,040. Source: National Science Foundation award number 1440609.

PI: Miron Livny, Co-PIs: Jim Basney, Barton Miller, Von Welch. Title: Continuous Software Assurance through a National Marketplace. Duration: September 2012 through September 2017. Amount: \$23,553,163. Source: Department of Homeland Security (DHS) Science and Technology Directorate, Homeland Security Advanced Research Projects Agency, Cyber Security Division (DHS S&T/HSARPA/CSD), BAA 11-02 and Air Force Research Laboratory, Information Directorate under agreement number FA8750-12-2-0289.

PI: Von Welch, Co-PIs: Randal Butler, Scott Koranda, James Basney. Title: Center for Trustworthy Scientific Cyberinfrastructure. Duration: October 2012 through September 2015. Amount: \$4,297,212. Source: National Science Foundation award number 1234408.

PI: James Basney. Title: CILogon-HA: Higher Assurance Federated Identities for DOE Science. Duration: September 2012 through August 2015. Amount: \$450,000. Source: Department of Energy award number DE-SC0008597.

PI: James Basney. Title: SAML Enhanced Client GSS-API Implementation. Date: December 2011. Amount: \$75,000. Source: Internet Society (gift).

PI: James Basney, Co-PIs: Marlon Pierce and Rion Dooley. Title: SDCI Sec: Distributed Web Security for Science Gateways. Duration: August 2011 through July 2015. Amount: \$948,821. Source: National Science Foundation award number 1127210.

PI: Randal Butler, Co-PIs: Douglas Pearson, James Basney, William Barnett. Title: Scientific Software Security Innovation Institute (S3I2). Duration: August 2010 through July 2012. Amount: \$49,862. Source: National Science Foundation award number 1043843.

PI: Von Welch, Co-PIs: Randal Butler and James Basney. Title: A Cyber Identity Infrastructure for National Science. Duration: September 2009 through August 2013. Amount: \$1,757,640. Source: National Science Foundation award number 0943633.

PI: James Basney, Co-PIs: Randal Butler and Von Welch. Title: CILogon: Secure Access to National-Scale CyberInfrastructure. Duration: June 2009 through May 2011. Amount: \$399,837. Source: National Science Foundation award number 0850557.

PI: James Basney, Co-PI: Marty Humphrey. Title: Integration of the MyProxy Online Credential Repository into the NSF Middleware Initiative Software Infrastructure. Duration: July 2002 through June 2005. Amount: \$598,343. Source: National Science Foundation award number 0222571.

## Publications

M. J. H. Faruk, J. Basney and J. Q. Cheng, “Blockchain-Based Decentralized Verifiable Credentials: Leveraging Smart Contracts for Privacy-Preserving Authentication Mechanisms to Enhance Data Security in Scientific Data Access,” 2023 IEEE International Conference on Big Data (BigData), Sorrento, Italy, 2023, pp. 5493-5502, doi: 10.1109/BigData59044.2023.10386360. <https://doi.org/mdnq>

Md Jobair Hossain Faruk, Bilash Saha, and Jim Basney. 2023. A Comparative Analysis Between SciTokens, Verifiable Credentials, and Smart Contracts: Novel Approaches for Authentication and Secure Access to Scientific Data. In Practice and Experience in Advanced Research Computing (PEARC '23), July 23–27, 2023, Portland, OR, USA. ACM, New York, NY, USA, 302–305. <https://doi.org/ksxt>

Suresh Maru, Marlon Pierce, Beth Plale, Sudhakar Pamidighantam, Dimuthu Wannipurage, Marcus Christie, Isuru Ranawaka, Eroma Abeysinghe, Rob Quick, Emad Tajkhorshid, Seid Koric, Jim Basney, Mariano Spivak, Barry Isralewitz, Rafael Bernardi, Diego Gomes, Giri Krishnan, Maxim Bazhenov, Shava Smallen, Amit Majumdar, Anton Arkhipov, Kael Dai and Xiao-Ping Liu. 2023. Cybershuttle: An end-to-end Cyberinfrastructure Continuum to accelerate Discovery in Science and Engineering. In Practice and Experience in Advanced Research Computing (PEARC '23), July 23–27, 2023, Portland, OR, USA. ACM, New York, NY, USA, 26–34. <https://doi.org/ksxw>

Md Arifuzzaman, Brian Bockelman, Jim Basney, and Engin Arslan. Falcon: Fair and Efficient Online File Transfer Optimization. IEEE Transactions on Parallel and Distributed Systems (TPDS), vol. 34, no. 8, pp. 2265-2278, August 2023. <https://doi.org/kdps>

Brian Aydemir, Jim Basney, Brian Bockelman, Jeff Gaynor and Derek Weitzel. 2022. SciAuth: A Lightweight End-to-End Capability-Based Authorization Environment for Scientific Computing. In Practice and Experience in Advanced Research Computing (PEARC '22), July 10–14, 2022, Boston, MA, USA. ACM, New York, NY, USA. <https://doi.org/10.1145/3491418.3535160>

Isuru Ranawaka, Nuwan Goonasekara, Enis Afgan, Jim Basney, Suresh Maru and Marlon Pierce. 2022. Custos Secrets: a Service for Managing User-Provided Resource Credential Secrets for Science Gateways. In Practice and Experience in Advanced Research Computing (PEARC '22), July 10–14, 2022, Boston, MA, USA. ACM, New York, NY, USA. <https://doi.org/10.1145/3491418.3535177>

Isuru Ranawaka, Samitha Liyanage, Dannon Baker, Alexandru Mahmoud, Juleen Graham, Terry Fleury, Dimuthu Wannipurage, Yu Ma, Enis Afgan, Jim Basney, Suresh Maru, and Marlon Pierce. 2021. Science Gateway Integration Examples with the Custos Security Service. 8th International Workshop on HPC User Support Tools (HUST), November 2021. <https://doi.org/10.5281/zenodo.5749727>

Jim Basney, Phuong Cao, and Terry Fleury, “Investigating Root Causes of Authentication Failures Using a SAML and OIDC Observatory,” IEEE 6th International Conference on Dependability in Sensor, Cloud and Big Data Systems and Applications (DependSys), December 2020. <https://doi.org/10.1109/DependSys51298.2020.00026>

Isuru Ranawaka, Suresh Maru, Juleen Graham, Aarushi Bisht, Jim Basney, Terry Fleury, Jeff Gaynor, Dimuthu Wannipurage, Marcus Christie, Alexandru Mahmoud, Enis Afgan, and Marlon Pierce. 2020. Custos: Security Middleware for Science Gateways. In Practice and Experience in Advanced Research Computing (PEARC '20), July 26–30, 2020, Portland, OR, USA. ACM, New York, NY, USA, 13 pages. <https://doi.org/10.1145/3311790.3396635>

You Alex Gao, Jim Basney, and Alex Withers. 2020. SciTokens SSH: Token-based Authentication for Remote Login to Scientific Computing Environments. In Practice and Experience in Advanced Research Computing (PEARC '20), July 26-30, 2020, Portland, OR, USA. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3311790.3399613>

Lee Liming, Jim Basney, John Paul Navarro, and Shava Smallen. 2020. Use Case Methodology in XSEDE System Integration. In Practice and Experience in Advanced Research Computing (PEARC '20), July 26-30, 2020, Portland, OR, USA. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3311790.3399622>

Jim Basney, Heather Flanagan, Terry Fleury, Jeff Gaynor, Scott Koranda, and Benn Oshrin. CILogon: Enabling Federated Identity and Access Management for Scientific Collaborations. In Proceedings of the International Symposium on Grids and Clouds (ISGC), PoS(ISGC2019)031, 2019. <https://doi.org/10.22323/1.351.0031>

Andrew Adams, Kay Avila, Jim Basney, Dana Brunson, Robert Cowles, Jeannette Dopheide, Terry Fleury, Elisa Heymann, Florence Hudson, Craig Jackson, Ryan Kiser, Mark Krenz, Jim Marsteller, Barton P. Miller, Sean Piesert, Scott Russell, Susan Sons, Von Welch, and John Zage. 2019. Trusted CI Experiences in Cybersecurity and Service to Open Science. In PEARC'19: Practice and Experience in Advanced Research Computing, July 28-August 1, 2019, Chicago, IL, USA. ACM, New York, NY, USA, 8 pages. <https://doi.org/10.1145/3332186.3340601>

Alex Withers, Brian Bockelman, Derek Weitzel, Duncan Brown, Jason Patton, Jeff Gaynor, Jim Basney, Todd Tannenbaum, You Alex Gao, and Zach Miller. 2019. SciTokens: Demonstrating Capability-Based Access to Remote Scientific Data using HTCondor. In Practice and Experience in Advanced Research Computing (PEARC '19), July 28-August 1, 2019, Chicago, IL, USA. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3332186.3333258>

Derek Weitzel, Brian Bockelman, Jim Basney, Todd Tannenbaum, Zach Miller, and Jeff Gaynor. Capability-Based Authorization for HEP. In 23rd International Conference on Computing in High Energy and Nuclear Physics (CHEP 2018), July 9-13, 2018, Sofia, Bulgaria. <https://doi.org/10.1051/epjconf/201921404014>

Alex Withers, Brian Bockelman, Derek Weitzel, Duncan A. Brown, Jeff Gaynor, Jim Basney, Todd Tannenbaum, Zach Miller, "SciTokens: Capability-Based Secure Access to Remote Scientific Data", PEARC '18: Practice and Experience in Advanced Research Computing, July 2018, Pittsburgh, PA, USA. <https://doi.org/10.1145/3219104.3219135>

Jim Basney, Terry Fleury, and Jeff Gaynor, "CILogon: A Federated X.509 Certification Authority for CyberInfrastructure Logon," Concurrency and Computation: Practice and Experience, Volume 26, Issue 13, pages 2225-2239, September 2014. <https://doi.org/10.1002/cpe.3265>

Jim Basney, Rion Dooley, Jeff Gaynor, Thejaka Amila Kanewala, Suresh Marru, Marlon Pierce, and Joe Stubbs, "Integrating Science Gateways with XSEDE Security: A Survey of Credential Management Approaches," XSEDE Conference, July 2014, Atlanta, GA. <https://doi.org/10.1145/2616498.2616559>

Rion Dooley, Joe Stubbs, and Jim Basney, "The MyProxy Gateway," International Workshop on Science Gateways, June 2014, Dublin, Ireland. <https://doi.org/10.1109/IWSG.2014.8>

Thejaka Amila Kanewala, Suresh Marru, Jim Basney, and Marlon Pierce, "A Credential Store for Multi-Tenant Science Gateways," International Symposium on Cluster, Cloud and Grid Computing (CCGrid), May 2014, Chicago, IL. <https://doi.org/10.1109/CCGrid.2014.95>  
<https://hdl.handle.net/2022/17379>

Jim Basney and Von Welch, "Science Gateway Security Recommendations," Science Gateway Institute Workshop, September 2013, Indianapolis, IN. <https://doi.org/10.1109/CLUSTER.2013.6702697>

Jim Basney, Terry Fleury, and Jeff Gaynor, "CILogon: A Federated X.509 Certification Authority for CyberInfrastructure Logon," XSEDE Conference, July 2013, San Diego, CA. <https://doi.org/10.1145/2484762.2484791> (Best Technology Paper)

Jim Basney, Rion Dooley, Jeff Gaynor, Suresh Marru, and Marlon Pierce, "Distributed Web Security for Science Gateways," Gateway Computing Environments Workshop (GCE11), November 17, 2011, Seattle, WA. <https://doi.org/10.1145/2110486.2110489>

Jim Basney and Jeff Gaynor, "An OAuth Service for Issuing Certificates to Science Gateways for TeraGrid Users," TeraGrid Conference, July 18-21, 2011, Salt Lake City, UT. <https://doi.org/10.1145/2016741.2016776>

Jim Basney, Von Welch, and Nancy Wilkins-Diehr, "TeraGrid Science Gateway AAAA Model: Implementation and Lessons Learned," TeraGrid Conference, August 2-5, 2010, Pittsburgh, PA. <https://doi.org/10.1145/1838574.1838576> (Best Paper: Gateways Track)

Jim Basney, Terry Fleury, and Von Welch, "Federated Login to TeraGrid," 9th Symposium on Identity and Trust on the Internet (IDtrust 2010), Gaithersburg, MD, April 2010. <https://doi.org/10.1145/1750389.1750391>

Mehran Ahsant and Jim Basney, "Workflows in Dynamic and Restricted Delegation," Journal of Information System Security (JISSec), Volume 5, Number 4 (2009), Pages 3-26, ISSN 1551-0123. Note: This is an extended version of an ARES/CISIS 2009 paper.

Bobba, R., Muggli, J., Pant, M., Basney, J., and Khurana, H. Usable secure mailing lists with untrusted servers. In Proceedings of the 8th Symposium on Identity and Trust on the Internet (Gaithersburg, Maryland, April 14 - 16, 2009). K. Seamons, N. McBurnett, and T. Polk, Eds. IDtrust '09, vol. 373. ACM, New York, NY, 103-116. <https://doi.org/10.1145/1527017.1527032>

Khurana, H., Basney, J., Bakht, M., Freemon, M., Welch, V., and Butler, R. Palantir: a framework for collaborative incident response and investigation. In Proceedings of the 8th Symposium on Identity and Trust on the Internet (Gaithersburg, Maryland, April 14 -16, 2009). K. Seamons, N. McBurnett, and T. Polk, Eds. IDtrust '09, vol. 373. ACM, New York, NY, 38-51. <https://doi.org/10.1145/1527017.1527023>

Mehran Ahsant and Jim Basney, "Workflows in Dynamic and Restricted Delegation," Proceedings of the 4th International Conference on Availability, Reliability and Security (ARES/CISIS 2009), Fukuoka, Japan, March 2009. <https://doi.org/10.1109/ARES.2009.92>

Mehran Ahsant, Esteban Tavalera Gonzalez and Jim Basney, "Security Credential Mapping in Grids," Proceedings of the 4th International Conference on Availability, Reliability and Security (ARES/CISIS 2009), Fukuoka, Japan, March 2009. <https://doi.org/10.1109/ARES.2009.93>

Jim Basney, Stuart Martin, JP Navarro, Marlon Pierce, Tom Scavo, Leif Strand, Tom Uram, Nancy Wilkins-Diehr, Wenjun Wu, and Choonhan Youn, "The Problem Solving Environments of TeraGrid, Science Gateways, and the Intersection of the Two," Fourth IEEE International Conference on eScience, December 2008, pages 725-734. <https://doi.org/10.1016/j.ijhcs.2005.04.017>

Lee, A., Winslett, M., Basney, J., and Welch, V. The Traust Authorization Service. ACM Trans. Inf. Syst. Secur. 11, 1 (Feb. 2008), 1-33. <https://doi.org/10.1109/ARES.2009.93>

Himanshu Khurana, Radostina Koleva, Jim Basney, "Performance of Cryptographic Protocols for High-Performance, High-Bandwidth, High-Latency Grid Systems," 3rd IEEE International Conference on e-Science and Grid Computing, Bangalore, India, December 2007. <https://doi.org/10.1109/ARES.2009.93>

J. Rowanhill, G. Wasson, Z. Hill, J. Basney, Y. Kiryakov, J. Knight, A. Nguyen-Tuong, A. Grimshaw and M. Humphrey, "Dynamic System-wide Reconfiguration of Grid Deployments in Response to Intrusion Detections," High Performance Computation Conference (HPCC 2007), Sept 26-28, 2007. Houston, TX. [https://doi.org/10.1007/978-3-540-75444-2\\_29](https://doi.org/10.1007/978-3-540-75444-2_29)

Z. Hill, J. Rowanhill, A. Nguyen-Tuong, J. Basney, G. Wasson, J. Knight and M. Humphrey, "Meeting Virtual Organization Performance Goals through Adaptive Grid Reconfiguration," 8th IEEE/ACM International Conference on Grid Computing (Grid 2007), Austin, TX, Sept 19-21, 2007. <https://doi.org/10.1109/ARES.2009.93>

Mehran Ahsant, Jim Basney, and Lennart Johnsson, "Dynamic, Context-Aware, Least-Privilege Grid Delegation," 8th IEEE/ACM International Conference on Grid Computing (Grid 2007), Austin, TX, Sept 19-21, 2007. <https://doi.org/10.1109/ARES.2009.93>

Jim Basney and Patrick Duda, "Clustering the Reliable File Transfer Service," TeraGrid Conference, Madison, WI, June 4-8, 2007. Von Welch, Jim Barlow, James Basney, Doru Marcusiu, Nancy Wilkins-Diehr, "A AAAA model to support science gateways with community accounts," Concurrency and Computation: Practice and Experience, Volume 19, Issue 6, March 2007. <https://doi.org/10.1002/cpe.1081>

Himanshu Khurana and Jim Basney, "On the Risks of IBE," Proceedings of the International Workshop on Applied PKC, Dalian, China, November 2006.

Himanshu Khurana, Jim Basney, Von Welch and Roy Campbell, "Operational Security Requirements for Large Collaborative Compute Infrastructures," International Workshop on Trusted Collaboration, in conjunction with CollaborateCom, Atlanta, November 2006. <https://doi.org/10.1109/COLCOM.2006.361884>

Terry Fleury, Jim Basney, and Von Welch, "Single Sign-On for Java Web Start Applications Using MyProxy," Proceedings of the ACM Workshop on Secure Web Services (associated with the 13th ACM Conference on Computer and Communications Security), November 3, 2006. <https://doi.org/10.1145/1180367.1180384>

Mehran Ahsant, Jim Basney, Olle Mulmo, Adam Lee and Lennart Johnsson, "Toward An On-demand Restricted Delegation Mechanism for Grids," Proceedings of the 7th IEEE/ACM International Conference on Grid Computing, Barcelona, September 28th-29th 2006. <https://doi.org/10.1109/ICGRID.2006.311010>

Jim Basney, Patrick Flanagan, Jin Heo, Himanshu Khurana, Joe Muggli, Meenal Pant, Adam Slagell and Von Welch, "Mithril: Adaptable Security for Survivability in Collaborative Computing Sites," Workshop on Enterprise Network Security (WENS), in conjunction with SecureComm, September 2006. <https://doi.org/10.1109/SECCOMW.2006.359560>

R. Butler, M. Servilla, S. Gage, J. Basney, V. Welch, B. Baker, T. Fleury, P. Duda, D. Gehrig, M. Bletzinger, J. Tao, D. M. Freemon, "CyberInfrastructure for the Analysis of Ecological Acoustic Sensor Data: A Use Case Study in Grid Deployment," Challenges of Large Applications in Distributed Environments (CLADE 2006) Workshop (associated with the 15th International Symposium on High Performance Distributed Computing), Paris, France, June 19, 2006. <https://doi.org/10.1007/s10586-007-0033-8>

Adam J. Lee, Marianne Winslett, Jim Basney, and Von Welch, "Traust: A Trust Negotiation-Based Authorization Service for Open Systems," The Eleventh ACM Symposium on Access Control Models and Technologies (SACMAT), June 2006. <https://doi.org/10.1145/1133058.1133066>

A. J. Lee, M. Winslett, J. Basney, and V. Welch, "Traust: A Trust Negotiation Based Authorization Service," Demonstration Short Paper, Fourth International Conference on Trust Management (iTrust 2006), May 2006.

Tom Barton, Jim Basney, Tim Freeman, Tom Scavo, Frank Siebenlist, Von Welch, Rachana Ananthakrishnan, Bill Baker, Monte Goode, and Kate Keahey, "Identity Federation and Attribute-based Authorization through the Globus Toolkit, Shibboleth, Gridshib, and MyProxy," 5th Annual PKI R&D Workshop, April 2006.

Jim Basney, "MyProxy Protocol," Global Grid Forum Experimental Document GFD-E.54, November 26, 2005.

Daniel Kouril and Jim Basney, "A Credential Renewal Service for Long-Running Jobs," 6th IEEE/ACM International Workshop on Grid Computing (Grid 2005), Seattle, WA, November 13-14, 2005.

Bruce Beckles, Von Welch, and Jim Basney, "Mechanisms for Increasing the Usability of Grid Security," International Journal of Human Computer Studies, Special Issue on HCI Research in Privacy and Security, Volume 63, Issues 1-2, July 2005, pages 74-101. <https://doi.org/10.1016/j.ijhcs.2005.04.017>

Jim Basney, Marty Humphrey, and Von Welch, "The MyProxy Online Credential Repository," Software: Practice and Experience, Volume 35, Issue 9, July 2005, pages 801-816. <https://doi.org/10.1002/spe.688>

Marty Humphrey, Jim Basney, and Jim Jokl, "The case for using Bridge Certificate Authorities for Grid Computing," Software: Practice and Experience, Volume 35, Issue 9, July 2005, pages 817-826. <https://doi.org/10.1002/spe.689>

D. Del Vecchio, J. Basney, N. Nagaratnam, and M. Humphrey, "CredEx: User-Centric Credential Selection and Management for Grid and Web Services," Proceedings of the 2005 IEEE International Conference on Web Services (ICWS 2005), Orlando, FL, July 12-15, 2005. <https://doi.org/10.1109/ICWS.2005.43>

Jonathan Martin, Jim Basney, and Marty Humphrey, "Extending Existing Campus Trust Relationships to the Grid through the Integration of Pubcookie and MyProxy," 2005 International Conference on Computational Science (ICCS 2005), Emory University, Atlanta, GA, May 22-25, 2005. [https://doi.org/10.1007/11428831\\_62](https://doi.org/10.1007/11428831_62)

A. Grimshaw, M. Humphrey, J.C. Knight, A. Nguyen-Tuong, J. Rowanhill, G. Wasson, and J. Basney, "The Development of Dependable and Survivable Grids," 2005 Workshop on Dynamic Data Driven Applications (associated with the 2005 International Conference on Computational Science). Emory University, Atlanta, GA, May 22-25, 2005. [https://doi.org/10.1007/11428848\\_94](https://doi.org/10.1007/11428848_94)

Himanshu Khurana, Rafael Bonilla, Adam Slagell, Raja Afandi, Hyung-Seok Hahm, and Jim Basney, "Scalable Group Key Management with Partially Trusted Controllers," International Conference on Networking, Reunion Island, April 2005. [https://doi.org/10.1007/978-3-540-31957-3\\_75](https://doi.org/10.1007/978-3-540-31957-3_75)

Jim Basney, Shiva Shankar Chetan, Feng Qin, Sumin Song, Xiao Tu, and Marty Humphrey, "An OGSi CredentialManager Service," Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force), Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

Mehran Ahsant, Jim Basney, and Olle Mulmo, "Grid Delegation Protocol," Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force), Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

Jim Jokl, Jim Basney, and Marty Humphrey, "Experiences using Bridge CAs for Grids," Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force), Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

Jim Basney, Wolfgang Nejdl, Daniel Olmedilla, Von Welch, and Marianne Winslett, "Negotiating Trust on the Grid," 2nd Workshop on Semantics in P2P and Grid Computing at the Thirteenth International World Wide Web Conference, New York, May 2004.

Markus Lorch, Jim Basney, and Dennis Kafura, “A Hardware-secured Credential Repository for Grid PKIs,” 4th IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid2004), Chicago, Illinois, April 19-22, 2004. <https://doi.ieeecomputersociety.org/10.1109/CCGrid.2004.1336679>

Jim Basney, William Yurcik, Rafael Bonilla, and Adam Slagell, “The Credential Wallet: A Classification of Credential Repositories Highlighting MyProxy,” 31st Research Conference on Communication, Information and Internet Policy (TPRC 2003), Arlington, Virginia, September 19-21, 2003.

D. Thain, J. Basney, S. Son, and M. Livny. The Kangaroo Approach to Data Movement on the Grid. *Proceedings of the Tenth IEEE Symposium on High Performance Distributed Computing*, San Francisco, California, August 7-9, 2001.

J. Basney, M. Livny, and P. Mazzanti. Utilizing Widely Distributed Computational Resources Efficiently with Execution Domains. *Computer Physics Communications*, Volume 140, 2001.

J. Basney and M. Livny. Managing Network Resources in Condor. *Proceedings of the Ninth IEEE International Symposium on High Performance Distributed Computing*, August 2000.

J. Basney, M. Livny, and P. Mazzanti. Harnessing the Capacity of Computational Grids for High Energy Physics. *Proceedings of the International Conference on Computing in High Energy and Nuclear Physics*, Padova, Italy, February 2000.

J. Basney and M. Livny. Improving Goodput by Co-scheduling CPU and Network Capacity. *International Journal of High Performance Computing Applications*, Volume 13(3), Fall 1999.

J. Basney and M. Livny. Deploying a High Throughput Computing Cluster. In Rajkumar Buyya, Editor, *High Performance Cluster Computing*, Volume 1, Chapter 5, Prentice Hall PTR, May 1999.

J. Basney, R. Raman, and M. Livny. High Throughput Monte Carlo. *Proceedings of the Ninth SIAM Conference on Parallel Processing for Scientific Computing*, San Antonio, Texas, March 1999.

M. Livny, J. Basney, R. Raman, and T. Tannenbaum. Mechanisms for High Throughput Computing. *Proceedings of the 21st SPEEDUP Workshop: Distributed Computing*, March 1997. In the *SPEEDUP Journal*, Volume 11(1), June 1997.

J. Basney, M. Livny, and T. Tannenbaum. High Throughput Computing with Condor. *HPCU News*, Volume 1(2), June 1997.

M. Litzkow, T. Tannenbaum, J. Basney, and M. Livny. Checkpoint and Migration of UNIX Processes in the Condor Distributed Processing System. University of Wisconsin-Madison Computer Sciences Technical Report #1346, April 1997.

## Presentations

Supporting Science at Scale: CILogon Hosted CManage for ACCESS, Internet2 Technology Exchange, December 11, 2024. [slides]

JSON Web Tokens for Science, Trusted CI Webinar, August 26, 2024. [slides] [video]

Outcomes of the Trusted CI Cybersecurity Framework HPC Cohort, 4th High-Performance Computing Security Workshop, May 21, 2024. [slides]

A Brief Update from Trusted CI, CI4MF, January 17, 2024. [slides]

Trusted CI Welcome, NSF Cybersecurity Summit, October 24, 2023. [slides] [video]

Ransomware, MS-CC Cybersecurity Community of Practice, October 10, 2023. [slides]



Trusted CI's TTP Program, Trusted CI TTP Workshop, September 14, 2023. [slides]

The Trusted CI Framework for Cybersecurity Programs, MS-CC All Hands Meeting, August 24, 2023. [slides] [video]

Migrating to Token-based Authorization: Experiences & Lessons Learned, Throughput Computing (HTC 23), July 11, 2023. [slides] [video]

Trustworthy Cyberinfrastructure, NSF Research Infrastructure Workshop, June 29, 2023. [slides] [video]

A Brief Introduction to Trusted CI, MS-CC Annual meeting, May 11, 2023. [slides]

The Trusted CI Framework, 3rd High-Performance Computing Security Workshop, March 15-16, 2023. [slides]

CILogon, InCommon Collaboration Success Program: Office Hours, January 26, 2023. [slides]

The Year Ahead in IAM: Ideas & Insights from InCommon Catalysts, IAM Online, January 25, 2023. [video]

Research Cybersecurity Insights for 2022, Internet2 Technology Exchange, December 8, 2022. [slides]

Panel: Making it Sticky: Offering Shared Services via InCommon Glue, Internet2 Technology Exchange, December 7, 2022.

Panel: The InCommon Catalysts for the Community, Internet2 Technology Exchange, December 7, 2022.

Panel: Migrating to Token-Based AuthN and AuthZ, Internet2 Technology Exchange, December 6, 2022. [slides]

FIM4ACCESS, 16th FIM4R Workshop & TAGPMA, December 4, 2022. [slides]

Research Cybersecurity Insights for 2022, EDUCAUSE Conference, October 26, 2022. [slides]

Trusted CI Update, NSF Cybersecurity Summit, October 19, 2022. [slides] [video]

CILogon JWT Update, NSF Cybersecurity Summit Workshop on Token-Based Authentication and Authorization, October 18, 2022. [slides] [video]

Welcome, Trusted CI Cybersecurity Workshop at the NSF Research Infrastructure Workshop, September 16, 2022. [slides]

CILogon AWS Update, AWS Lunch & Learn at University of Illinois, June 28, 2022. [slides]

Propelling Australia's Digital Life Science Research with Collaborative Research Infrastructure, TNC22, June 15, 2022.

CILogon, MAGIC Meeting, April 6, 2022.

Panel: Federated Login, TECC, March 30, 2022.

Federated Identity and Access Management, SFSCon, November 6, 2021.

CILogon: Support for the WLCG JWT Profile and other Token Types, 2021 NSF Cybersecurity Summit Workshop on Token-Based Authentication and Authorization (WoTBAn&Az 2021), October 18, 2021.

The Future of Bearer Tokens, OSG Token Transition Workshop, October 14, 2021.

SciAuth: Deploying Interoperable and Usable Authorization Tokens to Enable Scientific Collaborations, NSF Cybersecurity Summit, October 12, 2021.

Bridging the Gap: Strategies to Enable Federated Access to SAML-shy Resources and Services, InCommon CAMP Week, October 5, 2021.

CILogon: Enabling Federated Identity and Access Management for Scientific Collaborations, IAM Online, July 27, 2021.

Cybersecurity Careers Panel, PEARC21 Student Program, July 18, 2021.

Town Hall Discussion: Authorization and Identity, HTCondor Week 2021, May 24, 2021.

From identity-based authorization to capabilities: SciTokens, JWTs, and OAuth, OSG All-Hands Meeting 2021, March 3, 2021.

SciTokens: Federated Authorization for Distributed Scientific Computing, Trusted CI Webinar, January 25, 2021.

Federated Identity, InCommon, and Enabling Federated Access to Research Services, EdgeCon 2021, January 6, 2021.

Trustworthy Data Panel, Trusted CI Webinar, December 7, 2020.

XSEDE's Perspective on Token Assurance for Authentication and Authorization, TAGPMA Workshop on Token-Based Authentication and Authorization (WoTBAN&AZ 2020), December 1, 2020.

LIGO's use of SciTokens, TAGPMA Workshop on Token-Based Authentication and Authorization (WoTBAN&AZ 2020), November 30, 2020.

Guidance and Survey Results from the Trustworthy Data Working Group, SGCI Webinar, October 7, 2020.

Update from the Trustworthy Data Working Group, NSF Big Data Hubs Data Sharing and Cyberinfrastructure Working Group, October 2, 2020.

From Identity-Based Authorization to Capabilities: SciTokens, JWTs, and OAuth, HTCondor Workshop Autumn 2020, September 25, 2020.

Community Survey Results from the Trustworthy Data Working Group, NSF Cybersecurity Summit, September 24, 2020.

Community Survey Results from the Trustworthy Data Working Group, Fourth Workshop on Trustworthy Scientific Cyberinfrastructure (TrustedCI@PEARC20), July 24, 2020.

Federation Advanced Concepts, InCommon BaseCAMP, July 21, 2020.

Identity and Access Management in SCIMMA, SCIMMA May 2020 Virtual Workshop, May 20, 2020.

Trustworthy Data Working Group, NSF Big Data Hubs Data Sharing and Cyberinfrastructure Working Group, March 6, 2020.

Assurance for JWT, 28th TAGPMA Face-to-Face Meeting, December 13, 2019.

Peer Review of REFEDS Assurance Adoption, 28th TAGPMA Face-to-Face Meeting, December 13, 2019.

Brainstorming About Container Security Scanning Tools, WISE @ NSF Cybersecurity Summit, October 15, 2019.

Trusted CI, Open Storage Network Community Workshop, October 10, 2019.

Identity and Access Management, SFSCon, September 28, 2019.

CILogon, mini-FIM4R at Fermilab, September 12, 2019.

Panel: Securing your Infrastructure in a Changing Landscape: An Engineering Perspective, Securing Research Data Workshop, August 22, 2019.

National Research Resources: CILogon, InCommon BaseCAMP, August 14, 2019.

Transition to Practice Success Stories Panel, Cybersecurity Transition to Practice (TTP) Workshop, July 19, 2019.

Panel: Federal agency support and cyberinfrastructure, CyberRISK Workshop for Minority Serving Institutions (MSIs), July 11, 2019.

CILogon: Enabling Federated Identity and Access Management for Scientific Collaborations, International Symposium on Grids & Clouds (ISGC), April 4, 2019.

CILogon, SciTokens and Grid Community Toolkits, IGTF All-Hands Meeting, April 1, 2019.

Trusted CI's approach to security appropriate for open science projects, 13th FIM4R Workshop: Federated Identity Management for Research Collaborations, February 11, 2019.

Authorizing Access to Science Gateway Resources, Science Gateways Community Institute Webinar, January 9, 2019.

Identity Management for Research Collaborations, MAGIC at SC18, November 14, 2018.

Why Should Enterprise IdP Operators Care About Federation & Research?, Internet2 Technology Exchange, October 16, 2018.

Beyond the Wiki: Federating Applications in Support of Research, Internet2 Technology Exchange, October 16, 2018.

Security and Assurance for Researcher Identities, NSF Cybersecurity Summit, August 23, 2018.

Cybersecurity for Gateways, SGCI Bootcamp, August 15, 2018.

SciTokens: Capability-Based Secure Access to Remote Scientific Data, PEARC18, July 25, 2018.

The SciTokens Authorization Model: JSON Web Tokens & OAuth, HTCondor Week May 22, 2018.

CILogon CA Update 26th TAGPMA Face-to-Face Meeting, May 10, 2018.

Adopting AARC Guidelines, Internet2 Global Summit, May 9 2018.

Cybersecurity for Research on Campus: Not Just HIPAA & FISMA, Internet2 Global Summit, May 7, 2018.

Cybersecurity for Research on Campus: Not Just HIPAA & FISMA, EDUCAUSE Security Professionals Conference, April 11, 2018.

FIM needs/plans for the LSST project, 12th FIM4R Workshop: Federated Identity Management for Research Collaborations, February 5, 2018.

CILogon & SciTokens: OIDC/OAuth Federation, 42nd EUGridPMA Prague meeting, January 22, 2018.

CILogon 2.0: An Integrated IAM Platform for Science, IAM Online, January 17, 2018.

Lightweight Cybersecurity Risk Assessment Tools for Cyberinfrastructure, URISC@SC17, November 11, 2017.

CILogon 2.0, NSF CICI PI Meeting, October 3, 2017.

FIM4R Update: US Projects, 11th FIM4R Workshop, September 19, 2017.

CILogon, PEARC, July 12, 2017.

CILogon, Internet2 Global Summit, May 5, 2017.

CTSC and SWAMP: cybersecurity resources for your campus, CASC Spring Meeting, March 24, 2017.

CILogon 2.0, AGU Fall Meeting, December 14, 2016.

CILogon 2.0, Middleware And Grid Interagency Coordination (MAGIC) session at SC16, November 15, 2016.

FeduShare Update, Internet2 Technology Exchange, September 28, 2016.

CILogon 2.0, Internet2 Technology Exchange, September 26, 2016.

Trusting External Identity Providers for Global Research Collaborations - Mind the Gap!, IGTF All Hands Meeting, September 19, 2016.

Cybersecurity for Conservation, Conference on Conservation, Computation, and Criminology, July 7, 2016.

CTSC: Securing NSF Research, TNC16, June 15, 2016.

CILogon 2.0, Internet2 Global Summit, May 17, 2016.

Security Contacts in SAML Metadata, WISE Workshop, October 20, 2015.

FeduShare: A User Managed Collaboration Framework, Internet2 Technology Exchange, October 6, 2015.

CILogon 2.0, REFEDS, October 4, 2015.

Case Studies - InCommon Certificate Service, IAM Online, July 8, 2015.

CILogon and InCommon: Technical Update, GlobusWorld, April 14, 2015.

CILogon, Internet2 Technology Exchange, October 2014.

CILogon-HA: September 2014 Update, DOE PI Meeting, September 2014.

Good Federation Citizenship, IAM Online, May 28, 2014.

CILogon, Middleware And Grid Interagency Coordination (MAGIC) meeting, November 20, 2013.

InCommon & CILogon: Federated Identities Supporting Science, RedCLARA Federations Virtual Day, Jun 19, 2013.

TAC Interfederation Subgroup Update, InCommon Virtual Working Groups, May 20, 2013.

TAC Interfederation Subgroup Introduction, InCommon TAC Community Update, February 22, 2013.

CILogon and OAuth for MyProxy: Federated Authentication to Globus Online and Beyond, GlobusWORLD, April 17, 2013.

CILogon-HA: Higher Assurance Federated Identities for DOE Science, DOE NGNS PI Meeting, March 19, 2013.

CILogon and Social Identities, IAM Online, December 12, 2012.

CILogon, Middleware And Grid Interagency Coordination (MAGIC) meeting, November 14, 2012.

XSEDE12 Panel: Security for Science Gateways and Campus Bridging, July 18, 2012.  
<https://doi.org/10.1145/2335755.2335863>

CILogon: Federated Access to US CyberInfrastructure, TERENA Networking Conference, May 22 2012.

Distributed Web Security for Science Gateways, XSEDE Gateways Call, February 17, 2012.

Distributed Web Security for Science Gateways, IU CACR Security Seminar, February 2, 2012.

Federated Identity for Scientific Collaborations: Policy Issues, 2nd Workshop on Federated Identity Systems for Scientific Collaborations, November 2-3, 2011.

CILogon: Federating Identities for Researchers, Internet2 Member Meeting, October 6, 2011.

CILogon: Network Roaming with Certificates, Internet2 Member Meeting, October 3, 2011.

CILogon, OAuth, and Science Gateway Security, CyberGIS Conference Call, September 15, 2011.

InCommon Federation Experiences: CILogon, InCommon CAMP, June 22, 2011.

CILogon, CERN Federated identity system for scientific collaboration workshop, June 9, 2011.

Federated Service Provider On-Boarding, InCommon ACAMP, May 25, 2011.

CILogon and Globus Toolkit, GlobusWORLD, April 11, 2011.

Secure Access to Research Infrastructure via the InCommon Federation, University of Notre Dame Scientific Computing Workshop, February 23, 2011.

InCommon and TeraGrid Campus Champions, January 18, 2011.

CILogon: Bridges between Campus and National Cyberinfrastructure, Internet2 Fall Member Meeting, November 2, 2010.

CILogon: Federating Non-Web Apps, Internet2 Fall Member Meeting, November 2, 2010.

CILogon: Campus Authentication to CyberInfrastructure, TAGPMA Symposium on Authentication Technologies for Research and Education, October 4, 2010.

Federated Incident Response, InCommon Campus Authentication & Middleware Planning (CAMP), June 22, 2010.

CILogon Project Overview, CILogon Fall 2009 Workshop, September 29, 2009.

Leveraging the InCommon Federation to access the NSF TeraGrid, Internet2 Member Meeting, October 15, 2008.

TeraGrid Science Gateways: Scaling TeraGrid Access, Information Assurance for the Grid: Crossing boundaries between stakeholders, UK e-Science 2008 All Hands Meeting Workshop, September 10, 2008.

Building and Maintaining a Trustworthy Grid, University of Canterbury eResearch Symposium, August 4, 2008.

Federated Environments and Incident Response: The Worst of Both Worlds?, CAMP: Bridging Security and Identity Management, February 15, 2008.

MyProxy, OGF19 Software Forum, January 31, 2007.

MyProxy Introduction and Update, MyProxy in the Globus Toolkit for Developers, GridWorld 2006, September 12, 2006.

Managing Credentials on the TeraGrid with MyProxy, TeraGrid '06, June 14, 2006.

MyProxy: A Multi-Purpose Grid Authentication Service, Workshop on Computational Grids and Applications (WCGA), June 2, 2006.

Managing Credentials with MyProxy, SC05, November 12-18, 2005.

Integrating MyProxy with Site Authentication, Leveraging Site Infrastructure for Multi-Site Grids, Global Grid Forum 15 Workshop, October 3, 2005.

Using the MyProxy Online Credential Repository, Cyberinfrastructure Seminar Series, September 6, 2005.

MITHRIL: Adaptable Security for Survivability in Collaborative Computing Sites, NCASSR/TRECC Meeting, August 30, 2005.

Managing Security Credentials, NCSA Private Sector Program Annual Meeting, May 17, 2005.

Using the MyProxy Online Credential Repository, GlobusWORLD, February 9, 2005.

Using the MyProxy Online Credential Repository, LNCC Workshop on Computational Grids and Applications, February 1, 2005.

Credential Management Services and the PKI Testbed, NCASSR PNNL Visit, January 13, 2005.

The MyProxy Online Credential Repository, SC04, November 9, 2004.

Managing Grid Credentials, GRIDS Targeted Communities Workshop, July 1, 2004.

Opportunities for Homeland Security Partnerships, ITTF Secure Credentialing Subcommittee Meeting, February 27, 2004.

MyProxy NMI Integration, NSF SCI Division PI Meeting, February 19, 2004.

Middleware for Production Grids, LNCC Workshop on Computational Grids and Applications, February 3, 2004.

Deploying the TeraGrid PKI, Grid Forum Korea Winter Workshop, December 1, 2003.

GSI Credential Management with MyProxy, GGF8 Production Grid Management Research Group Workshop, June 26, 2003.

PKI and CKM Scaling Study, NCASSR Kick-off Meeting, July 11, 2003.

NCSA-IPG Collaboration Projects Overview. NASA IPG Workshop, February 6, 2003.

Credential Management in the Grid Security Infrastructure, GlobusWorld Grid Security Workshop, January 16, 2003.

Integration of the MyProxy Online Credential Repository into the NSF Middleware Initiative Software Infrastructure. NSF Middleware Initiative (NMI): Year Two Principle Investigator Planning Workshop, July 16, 2002.

GSI Online Credential Retrieval Requirements. Fourth Global Grid Forum Workshop, February 18, 2002.

MyProxy: An Online Credential Repository for the Grid. NCSA Condor-G Academy, August 27, 2001.

## **Service**

National Science Foundation Funding Panel Review Member: 2004, 2005, 2018, 2019, 2023

Program Committee Member: ISWC 2004 Trust Workshop, DIVO 2004, MGC 2004, MGC 2005, HPDC-15, WASR 2006, Grid 2006, MGC 2006, GCE 2006, CCGrid 2007, AINA 2007, WWW 2007, 2007 IEEE TCSC Doctoral Symposium, Grid 2007, SC07, SECOVAL 2007, MGC 2007, AINA 2008, CCGrid 2008, IDtrust 2008, 2008 IEEE TCSC Doctoral Symposium, SC08, Grid 2008, MGC 2008, CCGrid 2009, MGC 2009, SC10, Grid 2010, MGC 2010, HPDC 2011, MGC 2011, SC12, XSEDE13, SC13, SC14, XSEDE14, CCGrid 2015, XSEDE15, XSEDE16, PEARC17, ISGC 2020, PEARC20, ISGC 2022, ISGC 2023, ISGC 2024, ISGC 2025