

Benjamin Sims, Ph.D.

Sociologist

Statistical Sciences Group
Los Alamos National Laboratory
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Positions held

Scientist

2003 – present. Statistical Sciences Group, Los Alamos National Laboratory.

Postdoctoral Research Associate

2002 – 2003. Statistical Sciences Group, Los Alamos National Laboratory.

Postdoctoral Research Associate

2000 – 2002. Environment, Safety and Health Division, Los Alamos National Laboratory.

Education

Ph.D.

2000. Science Studies Program and Sociology Department, University of California, San Diego.
Dissertation: *On Shifting Ground: Earthquakes, Retrofit and Engineering Culture in California*. Committee: Steven Shapin (chair), Chandra Mukerji, Geoff Bowker, Andrew Scull, Gerald Doppelt.

M.A.

1994. Science Studies Program and Sociology Department, University of California, San Diego.

B.A.

1991. Science in Society Program, Wesleyan University.
Coursework in physics, public policy, and philosophy and sociology of science.

Research Interests

Problems of interest

Complex organizations; scientific and technical work; maintenance, repair, and resilience in socio-technical systems; modeling, simulation and policy.

Objects of study

Infrastructure, cybersecurity, computing, the U.S. nuclear weapons complex, communities and organizations in crisis.

Methods

Ethnographic methods, including participant observation, interviewing, and expert judgment elicitation; qualitative and quantitative text analysis; social network analysis; statistical analysis; ontology development.

Awards

David Edge Prize

2015. Presented by the Society for Social Studies of Science. For Sims and Henke, “Repairing Credibility: Repositioning Nuclear Weapons Knowledge After the Cold War” (see publications list).

Star-Nelkin Paper Award

2013 co-winner. Presented by the Science, Knowledge, and Technology Section of the American Sociological Association. For Sims and Henke, “Repairing Credibility” (see publications list).

Publications

Book

Christopher Henke and Benjamin Sims, *Repairing Infrastructures: The Maintenance of Materiality and Power*. Under review, MIT Press Infrastructures Series.

Articles and book chapters

2020 (forthcoming). Terece Turton, Divya Banesh, Trinity Overmyer, Benjamin Sims, and David Rogers, “Enabling Domain Expertise in Scientific Visualization with CinemaScience,” *IEEE Computer Graphics and Applications*.

2017. Benjamin Sims, “Making Technological Timelines: Anticipatory Repair and Testing in High Performance Scientific Computing,” *continent*, Vol. 6, No. 1: 81-85. Online at <http://continentcontinent.cc/index.php/continent/article/view/286>.

2016. Benjamin Sims, “Seismic Shifts and Retrofits: Scale and Complexity in the Seismic Retrofit of California Bridges,” in Mike Hodson and Simon Marvin, eds., *Retrofitting Cities: Priorities, Governance and Experimentation* (Routledge).

2014. Benjamin H. Sims, Nikolai Sinitsyn, and Stephan J. Eidenbenz, “Hierarchical and Matrix Structures in a Large Organizational Email Network: Visualization and Modeling Approaches,” in Rokia Missaoui and Idrissa Sarr, eds., *Social Network Analysis – Community Detection and Evolution*, Lecture Notes in Social Networks (Springer): 27-43.

2013. Benjamin H. Sims, Nikolai Sinitsyn, and Stephan J. Eidenbenz, “Visualization and Modeling of Structural Features of a Large Organizational Email Network,” *Proceedings of the 2013 IEEE/ASM International Conference on Advances in Social Networks Analysis and Mining*: 787-791.

2012. Benjamin Sims and Christopher R. Henke, “Repairing Credibility: Repositioning Nuclear Weapons Knowledge After the Cold War,” *Social Studies of Science*, Vol. 42, No. 3: 324-347.

2011. Benjamin Sims, “Resilience and Homeland Security,” in *Limn Number One: Systemic Risk*, Stephen J. Collier, Christopher M. Kelty, and Andrew Lakoff, eds: 6-8; previously published online as *Anthropological Research on the Contemporary Studio, Episode 2: Systemic Risk*, available at <http://anthropos-lab.net/studio/episode/02/>.

2009. Benjamin Sims, “Disoriented City: Infrastructure, Social Order, and the Police Response to Hurricane Katrina,” in Stephen Graham, ed., *Disrupted Cities: When Infrastructure Fails* (Routledge): 41-53.

2008. Benjamin Sims and Christopher Henke, "Maintenance and Transformation in the U.S. Nuclear Weapons Complex," *IEEE Technology & Society Magazine*, Vol. 27, No. 3:32-38.
2008. Benjamin Sims, "Safe Science: Material and Social Order in Laboratory Work" (reprint) in *Law and Science Volume II: Regulation of Property, Practices, and Products*, Susan Silbey, ed., International Library of Essays in Law and Society (Ashgate): 335-368.
2008. Benjamin Sims, "Book Review: Masco, J. (2006). *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*," *Science, Technology and Human Values*, Vol. 33, No. 1: 137-142.
2008. Benjamin H. Sims, Andrew C. Koehler, and Gregory D. Wilson, "Expert Opinion in Reliability," in Fabrizio Ruggeri, Ron Kenett, and Frederick W. Faltin, eds., *Encyclopedia of Statistics in Quality and Reliability* (John Wiley and Sons).
2007. Benjamin Sims, "Things Fall Apart: Disasters, Infrastructure, and Risk," *Social Studies of Science*, Vol. 37, No. 1: 93-95. (Introduction to "Special Section: Comments on the Hurricane Katrina Disaster," with comments by Wesley Shrum, Barbara L. Allen, Benjamin Sims, Jameson M. Wetmore, Chandra Mukerji, Christopher R. Henke, Wiebe E. Bijker, and Stephen Hilgartner.)
2007. Benjamin Sims, "'The Day After the Hurricane': Infrastructure, Order, and the New Orleans Police Department's Response to Hurricane Katrina," *Social Studies of Science*, Vol. 37, No. 1: 111-118.
2005. Benjamin Sims, "Safe Science: Material and Social Order in Laboratory Work," *Social Studies of Science*, Vol. 35, No. 3: 333-366.
1999. Benjamin Sims, "Concrete Practices: Testing in an Earthquake-Engineering Laboratory," *Social Studies of Science*, Vol. 29, No. 4: 483-518.

Invited talks

2019. Christopher Henke and Benjamin Sims, *Repairing San Diego: Infrastructure, Materiality, and Power*. Science Studies Program Colloquium Series, University of California, San Diego.
2012. Benjamin Sims, *Breakdown, Obsolescence, and Repair: Drivers of Change in Urban Infrastructure*. International Urban Retrofit Workshop: Theories and Concepts, Dynamics and Practices, Politics and Implications, Manchester, UK.
2010. Benjamin Sims, *The Social Impact of Infrastructure Destruction: Social Order, Sociotechnical Systems, and Layered Indicators*. Exploratory Simulation Technologies Group, Sandia National Laboratory.
2009. Benjamin Sims and Christopher Henke, *Repairing Nuclear Weapons: Credibility in the Test Ban Era*. Department of Science and Technology Studies Colloquium Series, Cornell University.
2009. Benjamin Sims, *A Sociotechnical Framework for Infrastructure Analysis: Capturing Scale and Complexity*. Science Studies Research Group, Department of Science and Technology Studies, Cornell University.
2001. Benjamin Sims, *Good Housekeeping: Safety, Knowledge and Order in Laboratory Work*. Science Studies Program Colloquium Series, University of California, San Diego.

Presentations and posters

2019. Benjamin Sims, *Layers of Abstraction and the Organization of Repair in High Performance Computing*. Society for Social Studies of Science Annual Meeting, New Orleans, LA.
2019. Riccardo Boero, Peter Hraber, Kim Kaufeld, Lissa Moore, Ethan Romero-Severson, and Benjamin Sims, *Using Wearable Sensor Data to Infer Social Groups and Influence in an Organization*. Data and Information Fusion Conference, Santa Fe, NM (poster).
2018. Benjamin Sims, *The Morris Worm: Alien Within*. Cyber Fire Foundry 13, San Diego, CA.
2018. Joanne Wendelberger and Benjamin Sims, *Resilience Modeling for Automated Mobility*. Smart Cities Connect Conference and Expo, Kansas City, MO (poster).
2018. Benjamin Sims, John Ambrosiano, Jeanne Fair, Penny Anderson, Andrew Bartlow, and Mark Ressler, *A Semantic Approach to Data Analytics for Multi-Layered Scientific Networks*. Conference on Data Analysis, Santa Fe, NM (poster).
2016. Benjamin Sims, *Repairing Codes: Infrastructural Friction in Scientific Computing*. International Conference on Applied Human Factors and Ergonomics, Orlando, FL.
2016. Benjamin Sims, *Organizing for Incident Response: Risk, Resilience, Complex Systems and Network Security*. Cyber FIRE training event, Reston, VA.
2015. Benjamin Sims, *Between Science and Hardware: Supercomputing Codes and Sociotechnical Repair*. Society for Social Studies of Science Annual Meeting, Denver, CO.
2015. Benjamin Sims, *Thinking About Repair, Layered Infrastructures, and Technological Change through High Performance Computing*. Maintenance, Repair, and Beyond Workshop, Denver, CO.
2015. Benjamin Sims, *Cyber Security: A Sociotechnical Systems Perspective*. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV.
2013. Christopher Henke and Benjamin Sims, *Maintaining Infrastructures: A Theory of Infrastructural Repair*. Society for Social Studies of Science Annual Meeting, San Diego, CA.
2013. Benjamin Sims, Nikolai Sinitsyn, and Stephan Eidenbenz, *Email Communications in a Large Scientific Research Organization*. INFORMS Computing Society Conference, Santa Fe, NM.
2013. Benjamin Sims and Stephan Eidenbenz, *Large-Scale Agent-Based Simulation of Complex Educational Systems*. Evaluation 2013 (American Evaluation Association Meeting), Washington, DC.
2011. Benjamin Sims, *Disaster: Would Your Community Bounce Back?* Café Scientifique, Los Alamos, Santa Fe, and Albuquerque, NM.
2010. Benjamin Sims, *Infrastructure, Social Order, and Community Resilience: A Socio-Technical Perspective*. International Research Committee on Disasters Meeting, Broomfield, CO.
2010. Benjamin Sims, *Social Responses to Infrastructure Destruction: Toward a Socio-Technical Model of Community Resilience*. Los Alamos National Laboratory, Los Alamos, NM.

2009. Benjamin Sims, *A Sociotechnical Framework for Understanding Infrastructure Breakdown and Repair*. Society for Social Studies of Science Annual Meeting, Washington, DC.
2008. Benjamin Sims, *Infrastructure, Social Order, and the Police Response to Hurricane Katrina*. Risk Symposium 2008: Effective Communication: Tools, Theory, and Applications, Santa Fe, NM.
2007. Benjamin Sims, *Revisiting the Uninvention Hypothesis: A Transactional View of Tacit Knowledge in Nuclear Weapons Design*. Society for Social Studies of Science Annual Meeting, Montreal, Canada.
2007. Benjamin Sims and Christopher Henke, *Repairing Nuclear Weapons: Maintenance and Transformation in U.S. Nuclear Weapons Work since the Cold War*. American Sociological Association Annual Meeting, Regular Session on Technology, New York, NY.
2007. Benjamin Sims and Christopher Henke, *Stockpile Stewardship and the Reliable Replacement Warhead: Socio-Technical Repair in the Nuclear Weapons Complex*. Proceedings of the 2007 IEEE International Symposium on Technology and Society, Las Vegas, NV.
2006. Benjamin Sims and Christopher Henke, *Repairing the Nuclear Stockpile: Aging Technology, Tacit Knowledge, and the Future of the Nuclear Weapons Complex*. Society for Social Studies of Science Annual Meeting, Vancouver, Canada.
2005. Benjamin Sims, Andrew Koehler, and Greg Wilson, *The Sociology of Parts: Complexity in Socio-Technical Systems*. Society for Social Studies of Science, Pasadena, CA.
2005. Benjamin Sims, Panel Introduction, *Hurricane Katrina: Chaos at the Intersection of Science, Technology, Society and Nature*. Society for Social Studies of Science Annual Meeting, Pasadena, CA.
2005. Greg Wilson, Andrew Koehler, and Benjamin Sims, *Representing Weapons*. Society for Social Studies of Science Annual Meeting, Pasadena, CA.
2004. Andrew Koehler, Benjamin Sims, and Richard Klamann, *Creating Boundary Objects in Applied STS: A New Approach to the Graphical Representation of Socio-Technical Systems*. Society for Social Studies of Science Annual Meeting, Paris, France.
2003. Benjamin Sims, *The Eternal and the Ephemeral: Bridges, Disposable Diapers, and the Limits of Technological Change*. Society for the History of Technology Annual Meeting, Atlanta, GA.
2003. Benjamin Sims, *Science vs. Bureaucracy? Safety and Institutional Culture at Los Alamos*. Society for Social Studies of Science Annual Meeting, Atlanta, GA.
2003. Greg Wilson, Andrew Koehler, Benjamin Sims, Laura McNamara, and Deborah Leishman, *Knowledge Modeling and Integration at Los Alamos National Laboratory*. Joint Statistical Meetings, San Francisco, CA.
2002. Benjamin Sims, *The Meaning of Laboratory Danger: Order and Ritual in Scientific Work*. Society for Social Studies of Science Annual Meeting, Milwaukee, WI.
2002. Benjamin Sims, *What is Safety Culture? A Social Science Perspective on Laboratory Safety*. Environment, Safety and Health Division Seminar Series, Los Alamos National Laboratory, Los Alamos, NM.

2001. Benjamin Sims, *Terrains of Risk: Safety and Organizational Politics at Los Alamos*. Technologies of Uncertainty: Reconstructing Order Through Rhetorics of Risk, Cornell University, Ithaca, NY (poster).

1999. Benjamin Sims, *Civil Engineers: Professional Tensions in Engineering Peer Review*. Society for Social Studies of Science Annual Meeting, San Diego, CA.

1998. Benjamin Sims, *Black Boxes or Boundary Objects: Computer Models in Design Engineering*. Society for Social Studies of Science Annual Meeting, Halifax, Canada.

1998. Benjamin Sims, 'Scientific Research in a Construction Environment': *Testing and the Organization of Work in an Earthquake Engineering Laboratory*. American Sociological Association Annual Meeting, San Francisco, CA (round table presentation).

1994. Benjamin Sims, *Meaning and Machine Behavior: On the Interpretation of Player Pianos and Other Recording Devices*. Society for Social Studies of Science Annual Meeting, New Orleans, LA.

Dissertation

2000. *On Shifting Ground: Earthquakes, Retrofit and Engineering Culture in California*. Examines the history and organizational context of the seismic retrofit program at the California Department of Transportation ("Caltrans"), an effort to reinforce older freeway structures throughout the state to current seismic safety standards. In particular, focuses on how earthquake risks are understood in public and political contexts, how engineers assess the difficult-to-define risks posed to structures by earthquakes, and how these risk assessments enter into the design process. Also examines peer review in engineering and how Caltrans engineers and managers coped with rapid changes in their knowledge base. Based on archival and ethnographic research and interviews carried out at Caltrans, university research laboratories, and engineering firms.

Patent

2011. Cornelia Verspoor, Benjamin Sims, John Ambrosiano, and Timothy Cleland, *System and Method for Knowledge Based Matching of Users in a Network*. U.S. Patent Number 7,933,856 B2, April 26, 2011. The invention is the core element of a digital service enhancing the ability of users to form effective collaborative social networks.

Professional affiliations

American Sociological Association
Section on Science, Knowledge, and Technology
Section on Organizations, Occupations and Work

Society for the History of Technology

Society for Social Studies of Science

Association for Computing Machinery
Special Interest Group on Computer-Human Interaction
Computer Supported Cooperative Work Community

Other professional training

2009. Summer Institute, Carnegie Mellon University, Center for Computational Analysis of Social and Organizational Systems. Training in social network analysis, automated text analysis, and organizational simulation methods.

Service

American Sociological Association, Section on Science, Knowledge, and Technology

2015. Robert K. Merton Award Committee

2012, 2006. Hacker-Mullins Graduate Student Paper Award Committee.

Society for Social Studies of Science

2015. Organizer of annual meeting open session “Computing in Science: Infrastructure, Work, and Knowledge.”

2013. Organizer (with Christopher Henke) of three annual meeting sessions on Structuring Infrastructures: Perspectives on Sociomaterial Order: I Infrastructural Landscapes, II Recycling and Normalization, and III Building Sociomaterial Orders.

2005. Organizer of annual meeting discussion session on Hurricane Katrina.

2003. Member of annual meeting program committee.

Social Studies of Science

2007. Organizer, “Special Section: Comments on the Hurricane Katrina Disaster,” *Social Studies of Science*, Vol. 37, No.1 (February 2007): 93-158.

National Science Foundation

2017. Review panel member.

2005, 2004. Proposal reviewer.

Los Alamos National Laboratory

2016 – present. Member of the Library Advisory Board.

2015 – present. Member of the Human Subjects Research Review Board (Institutional Review Board for Los Alamos National Laboratory).

2005 – 2006. Seminar Committee, Statistical Sciences Group.

2002 – 2003. Recruiting Committee member, Statistical Sciences Group.

2000 – 2004. Co-founder and organizer of the Forum on Social Science at Los Alamos.

Manuscript Reviewer

Social Studies of Science

Technology and Culture

ACM Conference on Computer-Supported Cooperative Work and Social Computing

Journal of Homeland Security and Emergency Management

Human Relations

Journal of Computer-Mediated Communication