SHARON TSAI-HSUAN KU

Curriculum vitae (02/01/2014)

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EDUCATION

2009	Ph.D. History & Philosophy of Science
	University of Cambridge, United Kingdom
	Supervisors: Martin Kusch and Simon Schaffer
2003	M.A. History of Science
	National Tsing Hua University, Taiwan
1999	M.S. Physics
	National Chiao-Tung University, Taiwan
1997	B.S. Physics
	National Chiao-Tung University, Taiwan

PROFESSIONAL APPOINTMENTS

2013-present	Research Assistant Professor
	Department of History & Politics, Drexel University
2011-2012	NSF-funded Postdoctoral Fellow
	Department of Sociology, University of Southern Indiana, US
2009-2011	Stetten Fellow
	Office of History, National Institutes of Health, US
2003-2004	Full-time Research Associate
	Department of Physics, National Tsing Hua University, Taiwan
2000-2001	Full-time Research Associate
	Department of Sociology, National Taiwan University, Taiwan

RESEARCH INTERESTS

History, philosophy and sociology of precision and the case of nanotechnology Sociology and politics of standardization

Scientific collaboration, research networks and organizational building in Mode2 science History and sociology of discipline/interdisciplinarity

Regulatory science and science in regulation

Data-intense science and the epistemic impacts of informatics in nanomedicine and nanoEHS Interactional expertise and boundary organization in cotemporary S&T Science policy and the globalization of scientific research

PUBLICATIONS

Refereed papers

- Ku, S. Room at the Bottom: The techno-bureaucratic space of Gold Nanoparticle Reference Material", in Slaton, A. ed., *New Materials: Their Social and Cultural Meanings*. University of Pennsylvania Press (Forthcoming)
- Ku, S. (2013) Disappearing nanoparticles: Regulator's regress and its impacts on evidence-based nanotechnology regulation in the United States, *Social Studies of Science* (Submitted)
- Ku, S. (2012) Forming nanobio expertise: One organization's journey on the road to translational nanomedicine, *Nanomedicine and Nanotechnology* 4: 366-377.
- Lin D.S., Ku, S., and Chen R.P. (2000) Interaction of Phosphine with Si (100) from core-level photoemission and scanning-tunneling-microscopy, *Phys. Rev. B* 61: 2799-2805.
- Lin, D.S., Ku, S., Sheu, T.J. (1999) Thermal reactions of Phosphine with Si (100): a combined photoemission and scanning-tunneling-microscopy study, *Surface Science* 424: (1) 7-18.

Manuscripts in progress

- Ku, S. & Zehr, S., Disciplined Interdisciplinarity: Infrastructure, identity, and disciplinary hierarchy of nanoELSI research at CNS, to be submitted to *Science and Public Policy*
- Ku. S & Klaessig, F. Rule-maker or rule-follower? Agency and authority in nanotechnology standardization, in Schlaudt, O. & Huber, L. eds. *Standardization in Measurement: Philosophical and Sociological Issues*. Pickering and Chatto: London.
- Ku, S. A matter of size does not matter: Material agency and the shape of actions in nanotechnology standardization.

Dissertations

'There's Plenty of Room at the Bottom': A Sociology of Nanodrug Standardization. PhD dissertation of Cambridge University, 2009

A Biography of the STM Tip: Tools, Knowledge and Identity Building in Taiwan Nanotechnology Community. Master's thesis of National Tsing Hua University, 2003. Surface Dynamics of Phosphine and Oxide on Si (100): A Perspective of Scanning-Tunneling-

Microscopy Study. Master's thesis of National Chiao Tung University, 1999.

CONFERENCE PAPERS

Gift or commodity? Data and database building in nanomedicine. Paper presented at the Society for the Study of Nanoscience and Emerging Technologies (S.NET), Boston, October 27-29, 2013

Interdisciplinary collaboration in social scientist directed research: Infrastructure and interdisciplinary identity, Poster presented at the 19th Annual CNSF Capitol Hill Exhibition, Rayburn House, DC. May 7, 2013

A matter of size does not matter: The social construction and application of gold nanoparticle standard. Paper presented at the International Conference of Dimensions of Measurement, University of Bielefeld, Germany, March 14-16, 2013.

A happy family? Science, social science, and science policy nexus in the US nanotechnology. Paper presented at the S.NET, University of Twente, Netherland, October 22-25, 2012

Laboratorizing social science: Interdisciplinarity in the CNS-ASUCenter for Nanotechnology. Paper presented at the Conference of Society for Social Studies of Science, Copenhagen,

- October 17-20, 2012
- Big social science for small technology: Interdisciplinarity at the Center for Nanotechnology in Society. Paper presented at the 8th Laboratory of History Conference, School of History, Technology and Society, Georgia Tech, Atlanta, March 30-31, 2012.
- The essential tension: scientific practices in the Nanotechnology Characterization Laboratory. Paper presented at S.NET, Tempe, Arizona, November 10, 2011
- Laboratory in translation: A social history of the Nanotechnology Characterization Laboratory. Paper presented at the 3rd Annual Stetten Symposium, National Institutes of Health, June 14, 2011
- Laboratory in translation: Scientific practices in the Nanotechnology Characterization Laboratory. Paper presented at the 7th Laboratory History Conference, Leuven, Belgium, June 6-8, 2011
- The politics of nano risk. Paper presented at the International Symposium on Challenging Models in the Face of Uncertainty, University of Cambridge, September 28-30, 2010
- Plenty of room at the bottom: Bureaucrats' regress in nanoscale standardization. Paper presented at the Conference of the Society for Social Studies of Science, Tokyo, August 26-29, 2010
- Who is the nanobio scientist? A social history of the Nanotechnology Characterization Laboratory. Paper presented at the 2nd Annual Stetten Symposium, National Institutes of Health, June 15, 2010
- One standard, multiple interpretations: The debate over nanosize standardization for U.S. nanodrug characterization. Paper presented at the Conference of 4S/EASST, Rotterdam, The Netherlands, August 20-23, 2008
- To see or not to see, that is the question: A sociological analysis of imaging nanoparticles. Paper presented at the workshop on Bargaining Norms, Arguing Standards, Universiteitsmuseum, Utrecht, The Netherlands, June 28-29, 2007

INVITED TALKS

From Angstrom to Nanometer: A Long Disorienting Journey of Nanotechnology Translation. HPOL Colloquium, Drexel University. January 14, 2014.

Precision as Public Policy: STS Perspectives on Nanoscale Standardization. Standard Education for the Liberal Art Workshop. Michigan State University. September 24-25, 2013 Nanotechnology Data Sharing: A Sociological Perspective. NIH Nanotechnology Working Group. April 25, 2013.

Disappearing Nanoparticles: Regulator's Regress and Its Impacts on Nanotechnology Regulation in the US. Institute of American Studies, Academia Sinica, February 5, 2013.

Disappearing Nanoparticles: Information Silos in U.S. Nano EHS regulation. Center for Nanotechnology in Society, Arizona State University, February 28, 2012

Big Social Science for Small Technology: Interdisciplinary Collaboration at CNS-UCSB. Center for Nanotechnology in Society, University of Santa Barbara, January 19, 2012

Plenty of Room at the Bottom: Politics on Nanosize Standardization. Center for Environmental Implications of Nanotechnology, University of California, Santa Barbara, January 18, 2012

Disappearing Nanoparticles: Regulatory Gaps in U.S. Nano EHS policy. Center for Nanotechnology in Society, University of Santa Barbara, October 26, 2011

Room at the Bottom: The Politics of Nanosize Measurement. Center for Bioethics and Medical Humanities, University of South Carolina, February 23, 2011

Lost in Translation: The NIH Road Map of Translational Medicine and Its Challenges," National Yang Ming University, Taiwan, September 3, 2010

SCHOLARSHIPS AND AWARDS

200	8	Doctoral Dissertation Scholarship, Academia Sinica, Taiwan
200	7	Chiang Ching-Kuo Foundation European Research Grant
200	5	National Institutes of Standards and Technology Research Grant
200	4 2007	Three year Toisyanasa Cayammant Sahalamhin

2004 - 2007 Three-year Taiwanese Government Scholarship

HONORS

2003	Best Master's Thesis Award, National Science Council, Taiwan
1997	Institute of Physics Academic Award, National Chiao-Tung University
1996	Department of Physics Academic Award, National Chiao-Tung University

TEACHING EXPERIENCE

2004	Mentor. Course: Science, Technology and Society
	Jesus College, University of Cambridge
2002	Teaching assistant. Course: The Rise of Modern Medicine
	Department of History, National Tsing Hua University

RESEARCH ACTIVITIES

2012	Visiting Scholar, Center for Nanotechnology in Society, Arizona State
	University
2011	Visiting Scholar, Center for Nanotechnology in Society, University of California,
	Santa Barbara
2005	Guest Researcher, National Institute of Standards and Technology

PROFESSIONAL SERVICE

2013	International Students Advisory Board, Drexel University
2013	Nominated expert in the ISO TC229 Nanotechnology Committee
2012	Panel Organizer, "Displacing the Laboratory and STS with It: New Modes of
	Engagement", Annual Meeting of Society for Social Studies of Science
2012	Steering Committee, Society of Nanoinformatics

PROFESSIONAL MEMBERSHIPS

Society for Social Studies of Science National Cancer Informatics Program Nanotechnology Working Group American Society of Testing and Material The American National Standards Institute/International Standard Organization US-EU Nanotechnology Community of Research

REVIEWER

International Journal of Nanomedicine Journal of Nanoparticle Research Taiwanese Journal of Studies for Science, Technology and Medicine Router: A Journal of Cultural Studies

LANGUAGE

English, Chinese, Taiwanese