

Center for Nanotechnology in Society at University of California, Santa Barbara (NSEC # SES 0938099)

PIs: Barbara Herr Harthorn, Richard P. Appelbaum, W. Patrick McCray
University of California, Santa Barbara

MISSION

CNS-UCSB is dedicated to understanding the relationship between technological innovation and social change, and to advancing an integrative role for the social sciences and the humanities in promoting the development of equitable and sustainable technological innovation around the world.

RESEARCH OBJECTIVES

- develop a portfolio of integrated multi-method research on nanoscience/nanotechnologies in dynamic interaction with society, from invention to global distribution, and lab to consumer to environment;

- provide interdisciplinary training for a new generation of socially-attuned scientists and science-aware social scientists;

- identify and dialogue with a wide array of public, media, government, NGO, and private sector constituents;

- serve as a network hub in the emerging national and international network of scholars and activists concerned with nanotechnology in society.



INTERNATIONAL AND NATIONAL COLLABORATIONS

- United States
- Arizona State University
 - Chemical Heritage Fdn.
 - Decision Research
 - Drexel University
 - Duke University
 - Kauffman Fdn.
 - Lehigh University
 - Long Island University
 - Occidental College
 - Quinnipiac University
 - Rice University
 - Science & Tech. Policy Inst.
 - Southern Methodist U.
 - SUNY New Paltz
 - UC Davis
 - UC Los Angeles
 - University of South Carolina

- International
- Beijing Institute of Tech., China
 - Cardiff University, Wales, UK
 - Centre National de la Recherche Scientifique, France
 - Compass Resource Management
 - Federal U. of Parana
 - Seoul National University, Korea
 - Universidad Autónoma de Zacatecas, Mexico
 - Université Lyon 3, France
 - University of British Columbia, CA
 - University of Edinburgh, UK
 - University of Gothenburg, Sweden
 - University of Nottingham, UK
 - University of Toronto, CA

<http://cns.ucsb.edu>

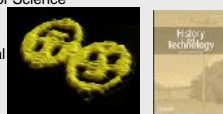
IRG 1 – Origins, Institutions, and Communities (McCray) features collaborators from Rice University, the University of South Carolina, New York University, and the Chemical Heritage Foundation. Current research areas include:

- Nanotechnology and the Pacific Rim
- Technoscientific Re-emergence and Electronics Uncertainty
- Divided Labor and Stratified Opportunity in American Nanomanufacturing: The Paradox of the Middle Skilled
- Institutions of Interdisciplinarity
- Innovation and Research at the Nanotechnology-Biology Interface
- DNA Nanotechnology and Nanotechnologists

McCray and Graduate Fellow Brian Tyrell made multiple presentations on the project, From Blueprints to Bricks: The Origins of DNA Nanotechnology," including the History of Science Society annual meeting and the annual meeting of the Society for Social Studies of Science

Collaborator Amy Slaton integrated CNS-funded research into NIST/Drexel summer institute called Standards in Society: A Critical Curricular Platform."

Choi published "Emerging Opportunities: Nanoelectronics and Engineering Research in a South Korean University" in History of Technology



IRG 2 – Globalization and Nanotechnology (Appelbaum) develops a comprehensive understanding of the role of industrial policy in shaping nanoscale R&D and commercialization in China, Korea, Japan, Latin America, and the U.S.; and the role of multicountry collaborations in high-impact research and commercial innovation

- China's Developmental State: Becoming a 21st Century Nanotech Leader
- Comparative Study of State Nanotechnology Policy: U.S., China, India, Japan
- International Collaboration in Nanotech Research and Publication
- UCMEXUS / CONACYT Binational Collaboration (USA-Mexico) in the Development of Nanotechnology
- Open Doors: Chinese (and other foreign) students sStudyin in the U.S

Graduate Fellows published findings of survey on International STEM graduate students in PLOS One

Appelbaum, Cao, Parker, Simon sign book contract for Technology and Innovation in China: China's Evolving Role in the Global Science & Technology System

Aashish Mehta advised Asian Development Bank on skills gap report

California in the Nanotechnology Global Economy website updated and completed



Flow of Foreign STEM students

Californiano.org

Education and Public Engagement programs at CNS-UCSB nurture an interdisciplinary community of nano scientists & engineers (NSE), social scientists, and educators, and to achieve broader impacts through engagement of diverse audiences in dialogue about nanotechnology and society.

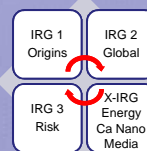


CNS-UCSB Research Program

Formal Education

- Interdisciplinary Research & Training Opportunities for Undergraduate and Graduate Students
- Graduate Research Fellowships in Social Science and Science & Engineering
- Publications, professional development, travel funds, public engagement
- Mentoring & training for Postdoctoral Scholars
- Curricula: CNS Seminar; 23 courses with CNS content; NSF awards with campus partners for course development at community college and UCSB
- Communications Training

Education



Outreach

Equitable & Sustainable Innovation

CNS Tools for Outreach & Engagement

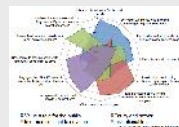
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|---------------------------|-----------------------------|
| Speakers series | Nano-Meeters (science café) |
| Conferences and Workshops | Public Presentations |
| Newsletter | Distribution Database |
| NanoDays community events | Writing Skills Training |
| Policy Presentations | Media Outreach |



IRG 3 – Multi-stakeholder Risk Perception and Social Response (Harthorn)

Harthorn's group, with lead collaborators at University of British Columbia (Canada), Cardiff University (UK), and UCSB, has developed an extensive comparative and longitudinal knowledge base about public, scientist, industry, regulator and NGO perceptions of nanotech risk, and modes of engaging diverse members of the public (including women and people of color) in dialogue about new technologies and society.

- Expert Judgments about Nanotechnologies' Benefits and Risks
- Emergent Public Perceptions of Benefits and Risks
- Public Participation in Nanotechnology and Other Emergent Technologies R&D: Upstream Engagement & Deliberation
- Environmental Risk Perception
- Nano consumer products—perceived safety, boycotting, buycotting
- Social Movement Organizations and Nanotech Mobilization



Nick Pidgeon, Christina Demski, Catherine Butler, Keren Parkhill, and Alexa Spence (2015). Creating a national citizen engagement process for energy policy. *Proceedings of the National Academy of Sciences of the United States of America*, 111(Suppl 4)

October 9: IRG 3 Leader and CNS Director Barbara Herr Harthorn Gave Congressional testimony on nanotechnology policy at American Chemical Society



Cross-IRG – Integrative Strategic Initiatives X-IRG projects address strategic topics that span and integrate IRGs. Together these provide a comprehensive understanding of the current processes for successful development, commercialization, and global distribution of nanotechnologies.

8 Seed Grant Projects

- Sarah Anderson, Assistant Professor, Environmental Science & Management
- George Legrady, Professor, Media Arts and Technology
- David Novak, Assistant Professor, Music
- Casey Walsh, Associate Professor, Anthropology
- Javiera Barandiaran, Assistant Professor, Global Studies
- Edwina Barvosa, Associate Professor, Chicano Studies
- Aashish Mehta, Associate Professor, Global Studies
- John Majewski, Professor, History
- California in the Nano Economy (Frederick & Gereffi, Duke University)
- Nanotech in the Media (Friedman)
- Twitter as a Tool for Public Engagement (Hasell, Stocking, Han)



CNS-UCSB Campus and Local Connections

