

On the Origins and Mission of the  
Society for the Study of Nanoscience and Emerging Technologies, or 's.net'

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## 1. Origins

1.1. s.net's formal history can be traced to the outcome of the 2004 NSF call for proposals for a center for nanotechnology in society. Instead of funding a single center, NSF split the award and created two smaller centers (one at Arizona State University, and one at the University of California, Santa Barbara) and two "research nodes" (one at the University of South Carolina, and one at the University of California, Los Angeles). Together the four entities were given an open-ended—and unfunded—mandate to create a "network" for nanotechnology in society.

1.2. We tried several strategies: Monthly phone conferences; annual dog-and-pony shows at NSF; sharing information and work; engaging—occasionally—in cooperative research projects. But the bandwidth was really not broad enough to generate a "network."

1.3. This led to the idea of creating an academic society with regular annual meetings for the exchange of research on nanotechnology in society. This society would not be a disciplinary society, but a multi-disciplinary society focused on issues tied to nanotechnology in society.

1.4. The plan was pursued with a workshop held at the University of South Carolina in May 2008. Approximately twenty people pursuing research on various aspects of nanotechnology in society—including representatives from each of the awardees in the 2004 center for nano in society call—were invited to participate.

1.5. We pursued a multi-pronged approach at the workshop. We worked on a mission for the proposed society—the results of which can be seen at <http://thesnet.net/>. Governance issues were discussed, and plans for the first annual meeting, were developed. The most contentious issue was the name for the society, and only later in the summer of 2008 did we settle on s.net.

## 2. s.net

2.1. An essential underlying dimension to s.net is the idea that understanding nanotechnology and other emerging technologies in their co-evolutionary processes of embedding in society cannot be done from a single disciplinary standpoint. Multiple disciplinary standpoints are needed. And, in particular, in order for s.net to productively contribute to the social embedding of emerging technologies, s.net has a mandate to better engage the various people and communities involved in the research, development and production of these technologies in the process of creation.

2.2. Thus, while s.net is not directly concerned with the scientific and engineering work that is the technical core of emerging nanotechnologies, it is essential to involve and engage people who are doing this work. In addition to bridging multiple disciplinary boundaries that exist between the communities of researchers on nanotechnology in society—philosophy, history, political science, economics, anthropology, etc.—s.net aims to bridge this work with the more technical work that is on-going in the development of nanotechnologies.

2.3. In a very important sense, s.net is an experiment in silo-busting. We take our cue from the formation of the nanotechnology community itself, as it aims to bridge work done in many scientific and engineering disciplines. Here the reach is even broader. And there is no guarantee of success, for many forces push work back into disciplinary silos. However, we believe that there is value in attempting to form a society that puts all of these various disciplines into direct interaction with each other. Society's problems are not disciplinary in nature, and ultimately require the efforts of many kinds of thinking.

## 3. s.net 2009

3.1. The inaugural s.net conference was originally planned to take place at the University of South Carolina. However, after we had settled on a date and started the preliminary work of sending out the first call-for-papers and invitations to keynote speakers, we found that our date conflicted with the University of Washington's Nanoethics Graduate Education Symposium. As it happened many of the people whom we would have expected at s.net 2009 were invited to present papers at the University of Washington's event. We decided to join forces, improving both events.

3.2 The result was that s.net 2009 was held in Seattle at the University of Washington, September 8-11.

3.3. The University of Washington's Nanoethics Graduate Education Symposium fielded 11 keynote talks, and a student panel during one day of the combined event. Topics were varied, from Jurgen Altmann's "Military Applications of Nanotechnologies," to Douglas Kysar's "Legal Issues Related to Nanotechnologies." These talks were recorded and are now available for streaming at

<http://depts.washington.edu/ntethics/symposium/index.shtml>. In addition, a volume is in preparation with the texts of the talks.

3.4. Concurrently, s.net 2009, brought a diverse group of researchers to the event. In keeping with s.net's mission to engage multiple disciplines, four keynote speakers made presentations at s.net 2009:

- ❖ Bernadette Bensaude-Vincent, History and Philosophy of Science, University of Paris, "Objects in Nanotechnology"
- ❖ David Mowery, Business, University of California, Berkeley, "Nanotechnology: A 'New Wave' for the US National Innovation System?"
- ❖ René von Schomberg, European Commission Directorate General for Research, Governance and Ethics, "Organizing Collective Co-Responsibility: On Precaution, Knowledge Assessment and Codes of Conduct"
- ❖ Tom Vogt, Chemistry, University of South Carolina, "Emerging Technologies: Catching Up with Utopia"

3.5. There was an enthusiastic response to s.net 2009 call for papers, and in addition to these four keynote presentations s.net fielded 48 single paper submissions, five symposia comprised of 19 individual presentations, five roundtables discussion sessions, a set of museum displays, a half-day workshop and a poster session. It was a very rich intellectual event.

3.6. This is not the place to detail all that happened at s.net 2009, and the full program can still be found at <http://www.thesnet.net/Program.html>. However, I can provide some of the highlights beyond the keynote presentations already mentioned.

3.7. The five symposia covered diverse topics:

- Societal Dimensions of Agrifood Nanotechnologies;
- Converging Technologies, Shifting Boundaries;
- Tales of Progress and Cultural Beliefs;
- Nanotech Policy and Science Fiction;
- Nanotechnology as Nanoscience in the Making.

The five roundtable discussion sessions also covered diverse topics:

- Science Education;
- Imaging;
- Ethics;
- International Nanotechnology and Society Network;
- Patents.

3.8. The Arizona State University Center for Nanotechnology in Society presented a half-day workshop on real-time technology assessment that was very valuable.

3.9. And perhaps it is worth mentioning a few of the contributed papers in order to convey a sense of the diversity of talks:

- Chris Bosso and Caitlin McAllister, “Local Government and Conditions of Uncertainty: Cambridge and the Regulation of Nanomaterials”
- Cyrus Mody, “Institutions as Stepping Stones: Rick Smalley and the Commercialization of Carbon Nanotubes”
- Kevin Elliott, “Precautionary Science and the Identification of Nanotechnology Risks”
- Bhuvaneashwar Subramanian, “Assessing the Impact of Society, Ethical and Regulatory Factors as Nanobiotechnology Investment Decisions and Commercialization Potential: A Critical Mass Gradient Hypothesis”
- Ethan Allen and Deborah Bassett, “Using Dialogs to Engage the Public in Nanotechnology”
- Martin Ruivenkamp, “The Circulation of Nanotech Images”
- Clare Shelley-Egon, “The Articulation of Responsible Innovation by Industrial Actors in Nanotechnology”
- Gregor Wolbring, “Nanoscale Sciences and Technologies, ‘Therapeutic Enhancements,’ Ableism and Identities of Rehabilitation Professionals”
- Michael Dickson, “Ambiguous Effects and the Problem of Aggregation”

## 4. s.net Business

### 4.1. The mission of s.net was refined at s.net 2009:

The Society for the Study of Nanoscience and Emerging Technologies (s.net) is an international organization to promote open intellectual exchange towards the advancement of knowledge and understanding of nanotechnology in society, including its connections with social and other technological developments. This includes normative analysis and reflection.

The Society seeks participation from those working within a diversity of communities, viewpoints, and methodologies, and aspires for its intellectual conversation to be informed by this diversity. It welcomes contributions from scientists and engineers that advance the critical reflection of nanotechnologies and related developments.

The Society seeks interaction with stakeholders and intermediaries, as those interactions contribute to its core mission.

The Society pursues its mission primarily through the organization of meetings, and aims for these meetings to reflect its diversity and international membership. There will be an annual meeting that will be organized as a space for a variety of interactions.

4.2. Details about membership in s.net were hashed out: Membership is open to scholars and PhD students in relevant fields/domains, and all practitioners and individuals in stakeholder groups and organizations who want to participate in the scholarly activities of the Society. Membership is currently only open to individuals, however, the possibility of institutional membership has not been foreclosed. Regular membership is \$50; student membership (and other members in a financially disadvantaged position) is \$25. \$250 provides a sustaining membership. All members get a \$25 discount on conference registration.

4.3. The Interim Executive Committee that had been formed at the initial workshop in 2008 was continued with some minor changes. Committee members currently include: Davis Baird, Larry Bell, Chris Bosso, Guillermo Foladori, David Guston, Barbara Herr Harthorn, Jennifer Kuzma, Alfred Nordmann, Arie Rip (President), John Weckert.

4.4 Responsibilities for moving s.net forward were divvied up among members:

- Davis Baird at the University of South Carolina will maintain the website and will develop a system for collecting membership fees. In addition, he will pursue stabilizing the legal status of s.net.
- Dave Guston will create and lead a Bylaws Committee to draft Statutes and Bylaws, and to consider further amendments of the mission statement.
- Jennifer Kuzma, together with Barbara Herr Harthorn will create a lead a Nomination Committee for the nomination and election of candidates for the Executive Committee.
- Arie Rip, as Acting President, will have overall responsibility to insure progress.

## 5. s.net 2010

4.1. Plans are underway for s.net 2010, September 29–October 2 in Darmstadt, Germany.

4.2. Alfred Nordmann is the Program Chair, and will constitute a Program Committee, develop a call-for-papers, invite keynote speakers, etc. This Committee is charged with being pro-active in creating a space with diverse and exciting interactions. Proposals and suggestions are welcome.

4.3. When s.net 2011 is confirmed, a representative of the organizing institution will become member of the Program Committee s.net 2010

## 6. Further s.net Activities

6.1. There is the hope that s.net members will be proactive in the creation of local and regional s.net meetings, particularly connecting with Asia. All such proposals and suggestions will be welcomed by the Executive Committee.

6.2. Members are encouraged to form links with other societies and organizations.

6.3. An edited volume drawn from work presented at s.net 2009 is under construction.

6.4. The University of South Carolina is developing plans for an event to mark the 50<sup>th</sup> anniversary of Richard Feynman's "Plenty of Room at the Bottom"