

**CONFERENCE ANNOUNCEMENT:  
6<sup>th</sup> Annual Conference on  
FOUNDATIONS OF NANOSCIENCE:  
SELF-ASSEMBLED ARCHITECTURES AND  
DEVICES (FNANO09)**



**DATES of FNANO09: April 20 – 24, 2009**

**SUBMISSION DEADLINE:  
January 15, 2009**

**FNANO09 Announcement:** [[PDF](#)] [[TXT](#)] [[HTML](#)]

<http://www.cs.duke.edu/~reif/FNANO/FNANO09/FNANO09announce.pdf>

**FNANO09 Webpage:** <http://www.cs.duke.edu/~reif/FNANO/>

**LOCATION:** Snowbird Cliff Lodge, Snowbird, Utah

**HOTEL Accommodations:**

<http://www.cs.duke.edu/~reif/FNANO/venue.html>

**FNANO09 Conference Registration pages <to be posted> (Registration will be open starting February 1, 2009, and the deadline for early registration is March 1, 2009.)**

**SUPPORTING ORGANIZATIONS:** Air Force Office of Scientific Research ([AFOSR](#)), ACS Publications ([ACS Nano](#)), and [Nanorex, Inc.](#)

**SPONSORING SOCIETY:** International Society For Nanoscale Science, Computation and Engineering ([ISNSCE](#)).

**PAPER and POSTER SUBMISSIONS:** <http://fnano09.cs.duke.edu/submit/>

➤ **SUBMISSION DEADLINE:** January 15, 2009

➤ **SUBMISSION REQUIREMENTS:** If you wish to present a talk or poster at FNANO09, you need to submit by **January 15, 2009** an extended abstract of at least one page in PDF format. Even if your talk is invited, you still need to submit at least a one page abstract by this date.

- **SUBMISSION METHOD:** Submissions are electronic via a Web interface at the above Paper and Poster Submission Website. Please make sure you have a browser that supports uploading via a web form.

**Acceptance/Rejection DECISIONS:** determined by February 15, 2009

**DEADLINE for Uploading ACCEPTED PAPERS** (for invited talks & accepted submitted papers and posters for publication in the Conference Proceedings): **March 15, 2009**. See below for more information on the Conference Proceedings.

**FNANO09 Preliminary Schedule (to be posted Feb 15 2009):**

[Summarized Schedule](#)

[Detailed Schedule](#)

**CONFERENCE FORMAT:** A combination of:

- invited and contributed talks, and
- posters and open discussion periods.

**FNANO Conference Overview:** This is a yearly conference on foundations of nanoscience, maintaining the highest scientific standards. Self-assembly is the central theme of the conference. Topics include self-assembled architectures and devices, at scales ranging from nano-scale to meso-scale. Methodologies include both experimental as well as theoretical approaches. The conference spans many traditional disciplines including chemistry, biochemistry, physics, computer science, mathematics, and various engineering disciplines including MEMS.

The prior year's Conferences on Foundations of Nanoscience ([FNANO04](#), [FNANO05](#), [FNANO06](#) and [FNANO07](#)) had a significant impact on the emerging fields of Nanoscience and Self-assembly – they brought many of the leading nanoscientists and researchers working in a wide variety of areas of Self-assembly in the same place to present invited talks. This year's 5<sup>th</sup> Conference on Foundations of Nanoscience ([FNANO09](#)) will have a mixture of both as invited talks by distinguished nanoscientists as well as contributed posters and open discussion periods to enhance attendee interaction with the goal of creating vibrant intellectual community in the area of self-assembly. We are including a number of special tracks on topics of emerging interest to the community of self-assembly.

**FNANO09 CONFERENCE ORGANIZATION:**

**FNANO09 General Chair:** [John H. Reif](mailto:reif@cs.duke.edu) <reif@cs.duke.edu>, Dept of Computer Science, Duke Univ, Durham, NC

**FNANO09 Program Chair:**

- [Marya Lieberman](mailto:mliberm@nd.edu) <mliberm@nd.edu>, Dept of Chemistry and Biochemistry, Univ of Notre Dame, Notre Dame, IN

**FNANO09 Program Committee: Track Chairs**

**Track on Fullerene Nanostructures:**

- **Track Chair:** [Jie Liu](mailto:j.liu@duke.edu) <j.liu@duke.edu>, Dept of Chemistry, Duke Univ, Durham, NC

**Track on Self-Assembled DNA Nanostructures:**

- **Track Chair:** [Nadrian Seeman](mailto:ncs1@feynman.acf.nyu.edu) <ncs1@feynman.acf.nyu.edu>, Dept of Chemistry, New York Univ, New York, NY

**Track on Cluster-Assembled Materials:**

**Track Chair:** [Paul S. Weiss](mailto:stm@psu.edu) <stm@psu.edu>, Depts of Chemistry and Physics, Pennsylvania State Univ, Univ Park, PA

**Track on Self-Assembled Surface Chemistry:**

- **Track Chair:** [Lloyd Smith](mailto:smith@chem.wisc.edu) <smith@chem.wisc.edu>, Dept of Chemistry, Univ of Wisconsin, Madison, WI

**Track on Viral Self-Assembly:**

- **Track Chair:** [Adam Zlotnick](mailto:adam-zlotnick@ouhsc.edu) <adam-zlotnick@ouhsc.edu>, Adam Zlotnick <azlotnic@indiana.edu>, Dept of Biology, Indiana Univ, Bloomington, IN

**Track on Self-Assembly of Peptide-Protein Nanostructures**

- **Track Chair:** [Todd Yeates](mailto:yeates@mbi.ucla.edu) <yeates@mbi.ucla.edu>, Dept of Chemistry and Biochemistry, Univ. of Calif. Los Angeles, Los Angeles, CA

**Track on Nanoplasmonics & Nanophotovoltaics:**

- **Track Chair:** [Eray Aydil](mailto:aydil@tc.umn.edu) <aydil@tc.umn.edu>, Dept of Chemical Engineering and Materials Science, Univ of Minnesota, Minneapolis, MN

**Track on Biomedical Nanotechnology:**

- **Description:** *Talks & posters in this track present biomedical applications of nanoscience.*
- **Track Chair:** [Carston R. Wagner](mailto:wagne003@tc.umn.edu) <wagne003@tc.umn.edu>, Dept of Medicinal Chemistry, Univ of Minnesota, Minneapolis, MN

**Track on Molecular Motors:**

- **Track Chair:** [Andrew Turberfield](#) <a.turberfield@physics.ox.ac.uk>, Dept of Physics, Oxford Univ, Oxford, UK

**Track on Self-assembled Computer Circuit and System Architectures:**

- **Track Chair:** [Chris Dwyer](#) <dwyer@ece.duke.edu>, Dept of Electrical & Computer Engineering, Duke Univ, Durham, NC

**Track on Self-Assembly Across Scales:**

- **Track Chair:** [Karl Bohringer](#) <karl@ee.washington.edu>, Dept of Electrical Engineering, Univ of Washington, Seattle, WA

**Track on Top-down Meets Bottom-up:**

- **Description:** *Talks & posters in this track combine bottom-up self-assembly with top-down methods such as lithography or an external patterning force (e.g., electromagnetic field or chemical gradient).*
- **Track Chair:** [Marya Lieberman](#) <mliieberm@nd.edu>, Dept of Chemistry and Biochemistry, Univ of Notre Dame, Notre Dame, IN

**Track on Computational Tools for Self-assembly:**

- **Track Chair:** [Mark Sims](#) <mark@nanorex.com>, Nanorex, Inc., Bloomfield Hill, MI

**Track on Principles and Theory of Self-Assembly:**

- **Track Chair:** [Paul W.K. Rothmund](#) <pwkr@dna.caltech.edu>, Dept of Computer Science and Dept of Computation and Neural System, Caltech, Pasadena, CA

**PROGRAM TRACK CHAIRS RESPONSIBILITIES:** Paper solicitation, Paper refereeing and acceptance decisions for papers in their track (in consultation with the Program Chair).

**FNANO CONFERENCE DESCRIPTION:** The construction of structures in the 1 - 100 nanometer range with molecular-scale precision is one of the key challenges facing science and technology in the twenty-first century. This challenge is at the core of the emerging discipline of Nanoscience, which is at a critical stage of development. There have been some notable successes in the construction of individual molecular components (*e.g.*, carbon nanotubes, and various molecular electronic devices), and the individual manipulation of molecules by probing devices. However, a key deficiency is the lack of methods for constructing complex devices out of large numbers of these molecular components. We need methods to help us hold, shape, assemble, and test various molecular components into complex machines and systems. Top-down methods for construction of nanostructures, such as e-beam lithography, have inherent limitations in scale. Bottom-up methods appear to have no such scale limitations. Self-assembly is a bottom-up method of construction where substructures are spontaneously self-ordered into superstructures driven by the selective affinity of the substructures. While top-down methods are well understood, and widely used in engineering and manufacturing processes, self-assembly is a much less well-understood construction process. Chemists have used self-assembly methods for many decades (*e.g.*, for the self-assembly of lipid or polymer layers), but they conventionally result in structures with limited complexity, and are not readily programmable. However, the cell is self-assembled, and contains many complex structured components. A missing pillar in the emerging discipline of Nanoscience is an understanding of self-assembly methods for forming complex structured components. For a variety of historical reasons, self-assembly processes and experiments have not been examined by science to the degree that is now needed by Nanoscience. The Conference provides synergy for a community of scholars working in self-assembly-related areas who would otherwise not have contact with each other.

**Plans for Special Journal Issues of FNANO Papers:**

<http://www.cs.duke.edu/~reif/FNANO/journals.html>

**CONFERENCE PROCEEDINGS:**

**FNANO Conference Proceedings:** The Conference Proceedings will be published in hard copy as well as an electronic book by an electronic publisher. Both printed and electronic versions of the proceedings will be subsequently available by commercial book vendors. A hard copy of the Conference Proceedings will also be provided to registered Conference attendees. Both printed and electronic (CD-ROM and download) versions of this year's FNANO09 Proceedings and will also be available for purchase. Submitted papers can be either a full paper or an extended abstract, at the author's option. The proceedings will include, for each invited or contributing speaker, a paper or extended abstract ranging in length between one and approximately 12 pages (maximum length and format to be determined). The Proceedings will also include a one to five page abstract for each poster.

**Conference Proceedings Paper Format Instructions:**

<http://www.cs.duke.edu/~reif/FNANO/FNANO09/instructions.html>

**JOURNAL SPECIAL ISSUES:** Selected conference papers will be invited to special issues of various journals to be determined.

**Concurrent NSF Workshop: to be determined**

**Obtaining prior year's FNANO Proceedings:**

<http://www.cs.duke.edu/~reif/FNANO/FNANOproceedings.html>

FNANO09 Proceedings will be available for purchase via a publisher to be determined.

**Prior FNANO08 Conference:** <http://www.cs.duke.edu/~reif/FNANO/FNANO08>

**Prior FNANO07 Conference:** <http://www.cs.duke.edu/~reif/FNANO/FNANO07>

**Prior FNANO06 Conference:** <http://www.cs.duke.edu/~reif/FNANO/FNANO06>

**Prior FNANO05 Conference:** <http://www.cs.duke.edu/~reif/FNANO/FNANO05>

**Prior FNANO04 Conference:** <http://www.cs.duke.edu/~reif/FNANO/FNANO04>

FNANO04, FNANO05, FNANO06, and FNANO07 Proceedings are available for purchase at: <http://sciencetechnica.com/>.

#### **CONFERENCE VENUE:**

The Conference will be at the Snowbird Cliff Lodge, Snowbird, Utah. It is 20 miles from Salt Lake International Airport.

#### **HOTEL ACCOMMODATIONS:**

**CUT-OFF DATE for Snowbird Hotel Room Reduced Rates: March 15, 2009.**

We have negotiated the following considerably reduced rates for hotel rooms at [Snowbird](#): one hundred Rooms will be \$106.60/night at the [Snowbird Cliff Lodge](#), where the Conference Sessions are held. There may also be rooms at similar rates at the [Lodge at Snowbird](#) (8 minutes walk from Snowbird Cliff Lodge). The reduced rates are generally available for the dates April 19 - April 25, 2009 to allow for an extended stay. Reservations with these discount rates are available for booking by calling 800-453-3000 or 801-742-2222. Be sure to specify that you are attending the "Foundations of Nanoscience (FNANO)" Conference to ensure that you are not charged a higher rate. The rooms at either of these hotels are quite spacious and comfortable. Book early to get the reduced rates. Space is limited; rooms may NOT be available after March 15, 2009.

#### **FACILITIES:**

The facilities at [Snowbird](#) include multiple restaurants, swimming pools & hot tubs, athletic spa, skating rink and world-class skiing. (In addition to the main ski slopes, there is also a beginner's skiing slope that is free at night. There is also free all day skiing for any children with a parent that purchases a ski ticket.)

**TRANSPORTATION TO AND FROM AIRPORT:** A [Canyon Transport](#) van to [Snowbird](#) from the Airport baggage claim area costs \$64 roundtrip (if prebooked for regularly scheduled times) and takes 40 minutes. You can make reservations at 801-742-340 or (800) 255-1841. The road up though Little Cottonwood Canyon to [Snowbird](#) is rarely closed for snow removal, but this can occur very occasionally in the evening during a very large snowstorm, and also rarely for a period in the morning afterward. Although these events are unlikely, just in case, *we strongly suggest you arrive early* to avoid possible problems and to enjoy the beautiful surroundings.