Keynote Speaker
Raymond Kurzweil
1999 National Medal of Technology Award
A leader in artificial intelligence systems, Kurzweil's work includes successful commercialization as well as state-of-the-art technical advances in pattern recognition. His first book, The Age of Intelligent Machines, received the award for the Most Outstanding Computer Science Book of 1990 by the Association of American Publishers. Come hear this practical visionary as he turns his attention to nanotechnology.

Invited Speakers
Scanning Probes
Charles Lieber, Harvard University
Phillip E. Russell, North Carolina State University
Richard Superfine, University of North Carolina
Paul Weiss, Penn. State University

Biological Machines and Materials
Julio Fernandez, Mayo Clinic
Peter G. Gillespie, Oregon Health Sciences University
Nadrian C. Seeman, New York University

Nano/Materials and Mechanics & Manipulation
Robert J. Celotta, NIST
Mostafa A. El-Sayed, Georgia Institute of Technology
James Heath, UCLA
Jacqueline Krim, North Carolina State University

Molecular Electronics/Self-Assembly
Mark Ratner, Northwestern University
James Tour, Rice University

Theory/Modeling and Computations
Ralph C. Merkle, Zyvex, LLC
Klaus Schulten, University of Illinois
Susan B. Sinnott, University of Kentucky

Abstracts due
June 16, 2000

Special Session
National Initiatives in Nanotechnology
Dr. Cheryl Shavers, Under Secretary of Commerce for Technology, will speak followed by a panel discussion with representatives from federal agencies.

Introductory Tutorial
Foundations of Nanotechnology
Nano/Materials and Mechanics & Manipulation
James Heath, UCLA

Biological Machines and Materials
Peter G. Gillespie, Oregon Health Sciences University

Scanned- Probe Microscopy
Phillip E. Russell, North Carolina State University

Theory/Modeling and Computations
Susan B. Sinnott, University of Kentucky

Feynman Prize Awards Banquet
Annual Feynman Prizes in Nanotechnology
Nominations or Submissions due July 31, 2000

Conference Co-chairs:
Jan H. Hoh, Johns Hopkins University
Donald W. Brenner, North Carolina State University
Over the next few decades, manufacturing is expected to undergo profound changes. Advances in miniaturization will reach the level of individual atoms and products will be designed and built to atomically-precise specifications.

This conference is a meeting of scientists and technologists working in fields leading toward molecular nanotechnology: through three-dimensional structural control of materials and devices at the molecular level. The conference will cover topics relevant to the pursuit of molecular control, drawing from fields such as:

- molecular electronics
- biochemical molecular engineering
- scanning probe microscopy
- supramolecular chemistry and self-assembly
- theory/modeling and computations
- computer science
- natural and artificial molecular machines
- nanomaterials/mechanosynthesis
- mechanical engineering and robotics
- applications of nanotechnology

Abstracts
There will be oral presentations and a poster session during the conference. The poster session will be held on Friday afternoon. On Saturday there will be additional time for viewing and discussion of the posters. For those who wish to submit papers, abstracts are due June 16, 2000. The abstracts should be no longer than 500 words including references and footnotes. Each submitted abstract may include only one graphic in jpg or gif format. The size should be no larger than 250 x 250 pixels (will be displayed at 72 dpi). Abstracts not in the appropriate format will be returned without being considered.

Submission information is available on the web at www.foresight.org/conference. If you do not have web access, email to inform@foresight.org or fax to Foresight at +1 (650) 917-1123. If you have additional questions, contact the conference co-chairs: Jan Hoh, jhoh@jhmi.edu or Don Brenner, brenner@eos.ncsu.edu

Annual Feynman Prizes
The Annual Feynman Prizes will be awarded to the person or group whose recent research (experiment or theory) has made the most significant contribution to the advancement of nanotechnology. An award of $5,000 will be given in each category to the top submission by an individual or team, as selected by the Feynman Prize Committee.

Nominations or submissions consisting of a cover letter with a description of the candidate and his/her/their contributions together with supporting materials (papers, theses, etc) must be received at Foresight Institute by July 31, 2000. Details are available at www.foresight.org/Fl/2000Feynman.html

The Annual Feynman Prizes are distinct from the $250,000 Feynman Grand Prize. Details on the Grand Prize are available at www.foresight.org/GrandPrize.1.html

Program Committee
Donald W. Brenner, North Carolina State University
M. Reza Ghadiri, Scripps Research Institute
1998 Feynman Prize Winner — Experimental
James K. Gimzewski, IBM Zurich Research Laboratory
1997 Feynman Prize Winner — Experimental
William A. Goddard III, Caltech
1999 Feynman Prize Winner — Theoretical
Jan H. Hoh, Johns Hopkins University
Ralph C. Merkle, Zyvex, LLC
1998 Feynman Prize Winner — Theoretical
Nadrian C. Seeman, New York University
1995 Feynman Prize Winner
Susan B. Sinnott, University of Kentucky
Richard E. Smalley, Rice University
1996 Nobel Prize in Chemistry
Deepak Srivastava, NASA Ames, MRJ
1997 Feynman Prize Winner — Theoretical

Journal Special Issue
A special conference issue of the journal Nanotechnology will be published. Submissions are optional, but strongly encouraged.

Foresight Institute and Institute for Molecular Manufacturing are non-profit organizations focused on nanotechnology education and research and are funded primarily through Senior Associate donations. Senior Associates receive discounts for all Foresight and IMM sponsored events. For more information about the Senior Associate Program including our annual Gatherings see www.foresight.org/SrAssoc

This conference is sponsored by:

www.foresight.org/conference
Powerful new concepts and capabilities such as atomic-scale imaging, nanometer-scale structure manipulation, and biological machines, together with increasingly powerful computational capabilities, are rapidly converging from disparate research fields to enable a viable molecular nanotechnology. Those with science, engineering, or software backgrounds are invited to participate either to begin new careers in nanotechnology or to expand their expertise. Topics and Instructors:

**SCANNED-PROBE MICROSCOPY**

**Phillip Russell, North Carolina State University**

Phillip Russell is a Professor of Materials Science and Engineering and Director of the Analytical Instrumentation Facility at North Carolina State University. He has been an innovator in the development of scanned-probe microscopy techniques, instrumentation and applications. His recent research has emphasized nanomechanics, metrology, self-assembled monolayers and in situ studies of nucleation and growth.

**NANO/MATERIALS AND MECHANICS & MANIPULATION**

**James Heath, UCLA**

James Heath is a Professor of Chemistry and Biochemistry at the University of California at Los Angeles. He is a leading researcher in the design, fabrication and utilization of nanometer-scale structures. His current interests include the development of new materials from chemically synthesized quantum dots, the design of new computer architectures based on molecular-level logic circuitry, and the development of a new scanning nonlinear optical microscope to study biological electrical functions.

**THEORY/MODELING AND COMPUTATIONS**

**Susan B. Sinnott, University of Kentucky**

Susan Sinnott is an Assistant Professor of Materials Science and Engineering at the University of Kentucky. Her research emphasizes the application of high performance scientific computing to design and study materials at the nanometer scale. Her interests include developing predictive isotherms to describe the behavior of fluids in nanometer-scale pores, investigating nanometer-scale mechanisms responsible for material modification through polyatomic ion bombardment, and studying of the synthesis and properties of carbon nanotubes.

**BIOLOGICAL MACHINES AND MATERIALS**

**Peter G. Gillespie, Oregon Health Sciences University**

Peter Gillespie is an Associate Professor in the Oregon Hearing Research Center with a joint appointment at the Vollum Institute. His research focuses on mechanisms of converting mechanical stimulation (through sound) into electrical signals in the ear. He is particularly interested in biological motors involved in the transduction process, and has recently engineered a novel motor protein that can be selectively regulated. He is also an innovator in the area of highly sensitive biochemical detection methods.

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**Tutorial**

**Foundations of Nanotechnology**

**Thursday 2 November 2000 • 9 am to 5 pm**

The tutorial will serve as an introduction to several important areas in nanotechnology and is ideal for newcomers to the field or experienced researchers who wish to strengthen their interdisciplinary knowledge.

**Registration Fees**

Registration fee includes the scientific program; Thursday evening welcoming reception; and optional Friday, Saturday, Sunday lunch. For academic and student attendees there is a "no lunch" option that does not include lunch on Friday, Saturday or Sunday.

<table>
<thead>
<tr>
<th>Optional Items</th>
<th>by Aug. 30</th>
<th>after Aug. 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feynman Prize Banquet</td>
<td>$50</td>
<td>$70</td>
</tr>
<tr>
<td>Senior Associate Reception</td>
<td>$40</td>
<td>$60</td>
</tr>
<tr>
<td>(Senior Associate membership not required to attend the reception)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal Special Conference Issue</td>
<td>$40</td>
<td>$40</td>
</tr>
</tbody>
</table>

The registration for the tutorial is separate from the conference registration. The tutorial registration fee includes Thursday lunch. You may register for the conference only, the tutorial only, or both the conference and tutorial.

**Site and Accommodations**

**Hyatt Hotel** • One Bethesda Metro • Wisconsin Ave. at Old Georgetown Road • Bethesda, Maryland 20814

**Reservations:** 1 (800) 233-1234 or +1 (301) 657-1234 or [www.hyatt.com](http://www.hyatt.com)

Attendees are responsible for making their own reservations by Monday, October 16. Mention the Foresight Nanotechnology Conference to obtain the reduced room rate.

**Group Rate:** Single occupancy $115 or double $140 plus tax. Rooms at this rate are limited; reserve early.

**Location:** The Hyatt is located at Metro Center, Maryland’s high tech corridor, 6 miles to downtown Washington, D.C., within walking distance to restaurants, theaters and world-class shopping; 5 miles to National Zoo, 18 miles to Washington National Airport, 32 miles to BWI airport and 18 miles to Dulles International Airport. For complete directions: [http://www.hyatt.com/usa/bethesda/hotels/map_bethe.html](http://www.hyatt.com/usa/bethesda/hotels/map_bethe.html)

**Airport Transportation:** Royal Airport Shuttle (800) 653-0888 or +1 (301) 657-0888 is available from Washington National, Dulles or BWI airports. Reservations are required. The Metro is available from Washington National Airport only.

**Refund Policy**

Refunds of registration fees can only be made upon receipt of a written request, postmarked no later than August 30, 2000, and are subject to a $100 administrative fee.

**Special Needs**

Participants with special needs should notify the organizers at least one month in advance. Please contact Foresight Institute inform@foresight.org, +1 (650) 917-1122, fax +1(650) 917-1123.
### 8th Foresight Conference and Tutorial Registration

Registration form available at [www.foresight.org/conference/MNT8](http://www.foresight.org/conference/MNT8)

Please print and fax or mail this form to:
Foresight Institute • Box 61058 • Palo Alto CA 94306 USA
Tel: +1 (650) 917-1122 • Fax: +1 (650) 917-1123

| Name: |  
| Address: |  
| City, State: |  
| Zip/Postal Code, Country: |  
| Phone: |  
| Fax: |  
| Email: |  
| Position (Professor, Director, Programmer, etc.): |  
| Organizational affiliation (for your badge): |  

For future notification about this conference do you prefer:
- email
- postal mail:
- other:  

Senior Associates of Foresight Institute or IMM may register at the academic rate, regardless of their employment status. For more information about becoming a Senior Associate, see [www.foresight.org/SrAssoc](http://www.foresight.org/SrAssoc)

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### Conference Only (Nov. 3-5)

| Lunch included in fees |  
| Academic, Nonprofit, Govt. | $425 | $550  
| Corporate, Individual | $550 | $675  
| Full-time Student** | $225 | $350  
| One day | 
- Fri | $125  
- Sat | $250  
| Sun | $250  

### Conference Only (Nov. 3-5) No lunch included in fees*

| Academic, Nonprofit, Govt. | $325 | $450  
| Full-time Student** | $95 | $195  

### Tutorial Only (Nov. 2) (w/lunch)

|  |  
| Conference |  
| Tutorial |  
| Feynman Prize Banquet | $50 | $70  
| Senior Associate Reception | $40 | $60  
| Journal Special Conference Issue | $40 |  

### Optional Items:

|  |  
| Feynman Prize Banquet |  
| Senior Associate Reception |  
| Journal |  

### Total

|  
| Conference $  
| Tutorial $  
| Feynman Prize Banquet $  
| Senior Associate Reception $  
| Journal $  

Please make checks payable to the Foresight Institute. Checks and bank drafts must be in U.S. dollars drawn on a U.S. bank.

VISA or MasterCard Number: Exp. Date:  

Signature  

Printed Name  

* No lunch option omits lunch on Friday, Saturday, Sunday.  
** Full-time students must provide copy of undergraduate or graduate ID.