



1st Symposium on MOLECULAR MACHINE SYSTEMS

October 22, 2004

Crystal City Marriott Hotel • Washington, DC area

Symposium is held as Day One of "1st Conference on
Advanced Nanotechnology: Research, Applications, and Policy"

Preliminary Program

Note: *Italic* indicates "speaker" *indicates "corresponding author"

All events held at the Crystal City Marriott Hotel in the
Crystal Forum room, unless otherwise specified

Conference Chair

Christine Peterson, Foresight Institute

Thursday, October 21

- 8 to 9:30 AM Congressional Staff Breakfast on Nanotechnology
Policy (invitational, RSVP separately from
conference)
Rayburn House Office Building, Capitol Hill
- Noon to 2 PM Foresight Institute Luncheon Briefing, with Foresight
President *Scott Mize* and VP *Christine Peterson*
(invitational, RSVP separately from conference),
Monticello Ballroom
- 6 to 8 PM Conference Registration, *Foyer 2nd floor*

Friday, October 22

Friday Co-Chairs:

Prof. William A. Goddard, III Caltech

Prof. Ralph Merkle, Georgia Tech

- 7:30 AM Conference Registration, *Crystal Forum Foyer*
- 8:30 AM Continental Breakfast, *Crystal Forum Foyer*
- 9:20 AM **Welcome and Introduction**
Ralph Merkle, Georgia Tech,
Symposium Co-Chair
- 9:30 AM **DNA: Not Merely the Secret of Life**
Nadrian Seeman, NYU
- 10:00 AM **A Synthetic Approach to Water Soluble Nanoscale
Molecules with Controlled Structures**
*Christian Schafmeister**, Stephen Habay, Christopher
Levins, Paul Morgan, Gupta Sharad, Gregory Bird;
University of Pittsburgh
- 10:20 AM **Artificial Molecular Machines**
*Amar Flood** and J. Fraser Stoddart, UCLA
- 10:40 AM Break
- 11:00 AM **Design of Macromolecular Structures
and Interactions**
David Baker, University of Washington

- 11:30 AM **Design and Modeling of Nanoscale Systems:
Prediction of Structures and Properties**
William A. Goddard III, Caltech
Symposium Co-Chair
- 12:00 PM Luncheon for those who selected this option, *Monticello
Ballroom*
- 12:30 PM Luncheon Address: *Nick Reynolds*, Accelrys
**Computer Aided Nanodesign: Connecting Molecular
Design to the Engineering Process**
Monticello Ballroom
Lunch talk is open to all conference attendees
- 1:00 PM Poster Session, *Monticello Ballroom*
- 2:00 PM **Nanoassembly and Nanorobots**
Ari Requicha, USC Laboratory for
Molecular Robotics
- 2:30 PM **Pathway to Diamond-Based Molecular
Manufacturing**
Robert Freitas, Institute for Molecular Manufacturing
- 3:00 PM **Design and Analysis Techniques for
Complex Nanosystems**
J. Storrs Hall, Molecular Engineering Research Institute/
Nanorex Inc.
- 3:20 PM **Indirectly-Replicating Nanomachines:
a Kinematic Cellular Automata Approach**
Tihamer Toth-Fejel, General Dynamics
- 3:40 PM **Coordinating Microscopic Robots
for Medical Applications**
Tad Hogg, HP Labs
- 4:00 PM Break
- 4:30 PM **A Roadmap to Productive Molecular Machine
Systems: Recent Progress, Next Steps, and Strategic
Objectives**
K. Eric Drexler, Molecular Engineering
Research Institute
- 5:00 PM **Toward Atomically-Precise
Bottom-up Nanomanufacturing**
Ralph Merkle, Georgia Tech
- 5:30 PM **Special interest groups meet, Sign up or suggest a new
topic at registration desk**
- 7:00 PM **Foresight Institute Feynman Prize Banquet**
Potomac Ballroom
Attendees must register in advance: see reg. desk
Awards will be presented to the winners of:
*2004 Foresight Institute Feynman Prize in
Nanotechnology: Theory and Experimental*
2004 Foresight Institute Prize in Communication
2004 Foresight Institute Distinguished Student Award
- 9:00 PM **Keynote: Ray Kurzweil**, Winner, National Medal of
Technology, *Crystal Forum*
**An Exponentially Expanding Future from
Exponentially Shrinking Technology**
- 10:00 PM Informal discussion continues in the lounge

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