Arizona Institute for Nanoelectronics Kickoff

Stephen Goodnick
4-4-08

Agenda

8:00-8:30	Welcome, Stephen Goodnick, “Overview ASU nanotechnology and AINE”
8:30 9:00	Mark Lundstrom, Purdue University, “Computational nanoelectronics in the 21st century: challenges and opportunities”
9:00-9:30	Michael Lebby, Optoelectronics Industry Development Assoc., “A sneak preview of a few ‘grand challenges’ in photonics”
9:30-10:00	Larry Nagahara, National Cancer Institute, NIH, “Driving the future of biomedical applications with nanoelectronics”

Agenda

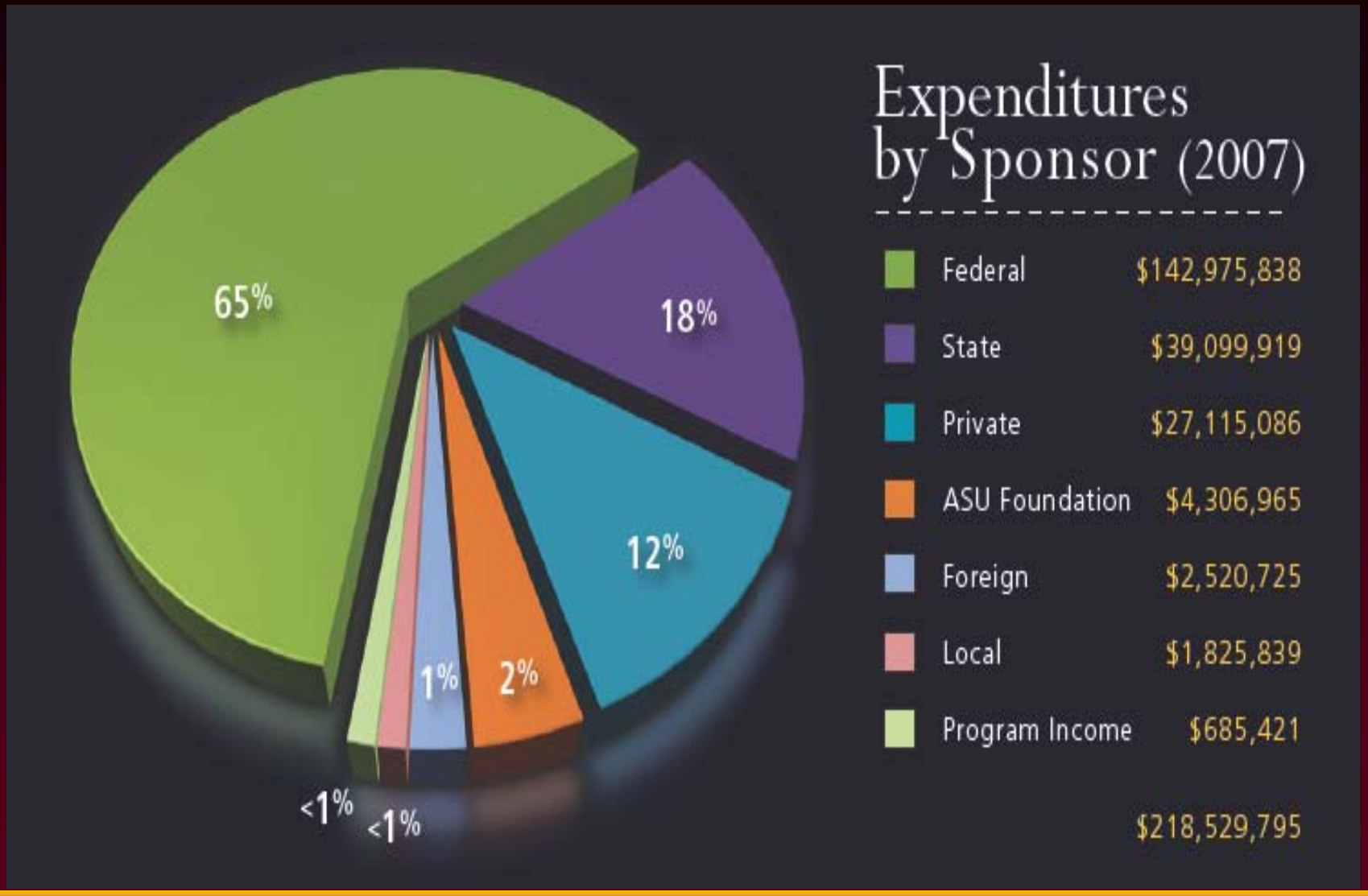
10:20-10:40	Nathan Newman/Trevor Thornton; Nanofabrication and Nanocharacterization in CSSER/LE-CSSS
10:40-11:05	Yong-Hang Zhang, Center for Nanophotonics, AINE
11:05-11:30	Trevor Thornton, Center for Bio-Integrated Circuits, AINE
11:30-11:45	Stuart Lindsay, Center of Single Molecule Biophysics, Biodesign Institute.
11:45-12:10	Michael Kozicki, Center for Applied Nanoionics, AINE

Agenda

1:30-1:55pm	David Ferry and Robert Nemanich, Nanostructures Research, AINE
1:55-2:20	Mark van Schilfgaarde, Center for Computational Nanoscience, AINE
2:20-2:40	Nathan Newman, LE-CSSS/AINE, Spintronics and Nanomagnetics
2:40-3:00	Coffee Break
3:30-3:15	David Guston, Center Nanotechnology in Society
3:15-3:30	Paul Westerhoff, CEE, Environmental Impacts of Nanotechnology
3:30-5:00	Poster Session and Social Hour

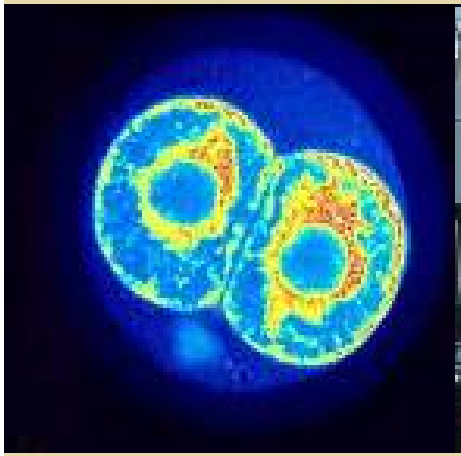
Office of the Vice President for Research and Economic Affairs (OVPREA) http://ovprea.asu.edu/

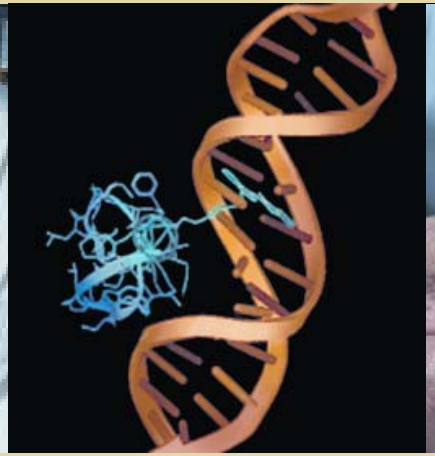
ASU Research at a Glance



Nanotechnology Initiatives

Arizona State University



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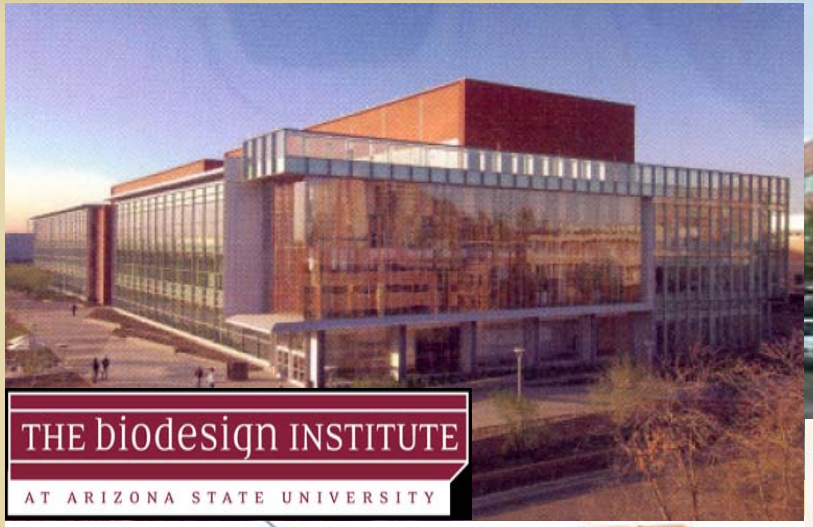
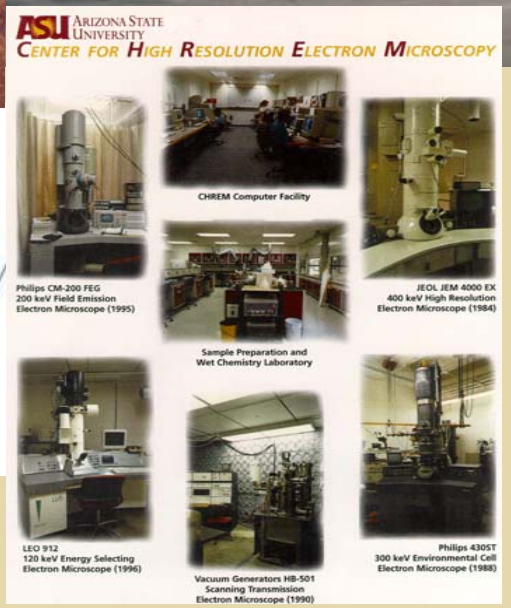
Nanotechnology Infrastructure





The Biodesign Institute at ASU

The integration and translation of formerly distinct disciplines of discovery, including biology, chemistry, physics, medicine, agriculture, environmental science, electronics, engineering and computing

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THE biodesign INSTITUTE
AT ARIZONA STATE UNIVERSITY

HARNESSING THE ELEGANCE OF NATURE'S DESIGNS

Nanoscale Systems

Bio-Optical Nanotechnologies

Neal Woodbury, Director

Single Molecule Biophysics

Stuart Lindsay, Director

Bioelectronics and Biosensors

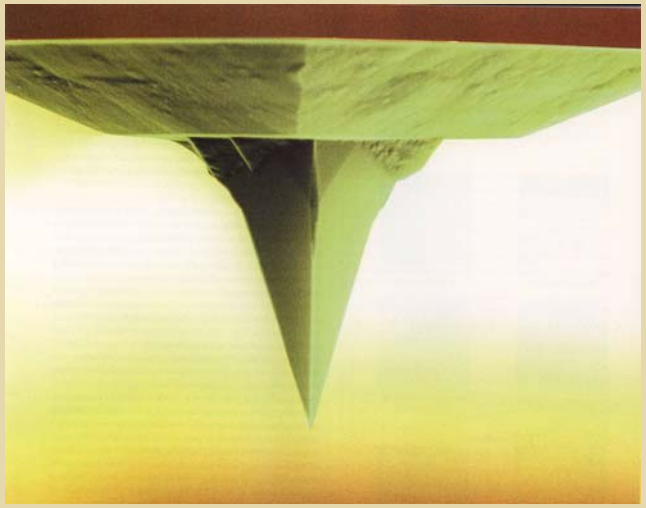
Joseph Wang, Director

Center for Ecogenomics

Deidre Meldrum, Director

Applied NanoBioscience

Frederic Zenhausern, Director



MacroTechnology Works

MacroTechnology Works (MTW) is the bridge that connects conceptual research and early-stage proof-of-concept to engineering of commercial-ready prototypes and technology demonstrators

Macro-Technology Works (MTW) is the home of the Army-Sponsored Flexible Display Center

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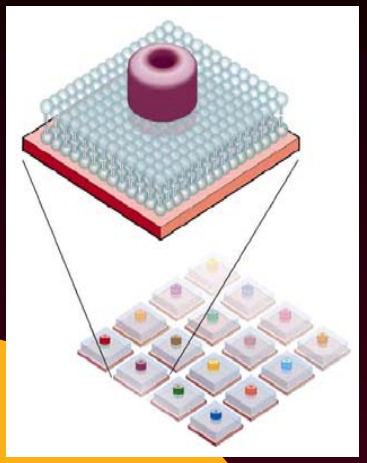
Arizona Institute for Nanoelectronics

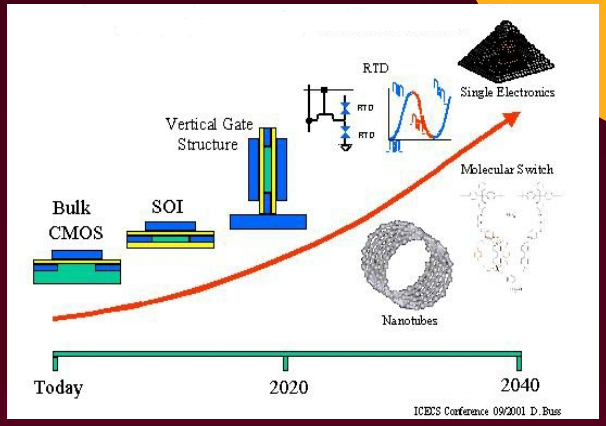
Communications

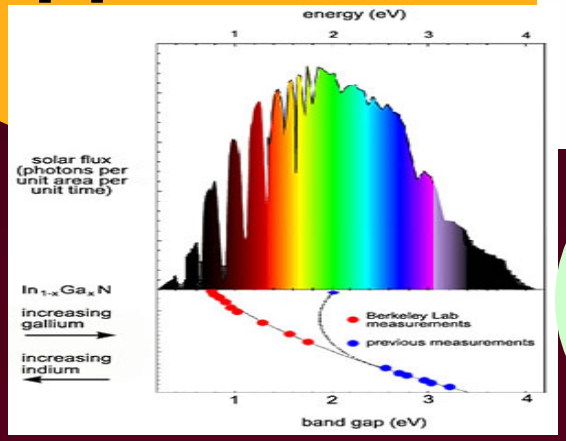


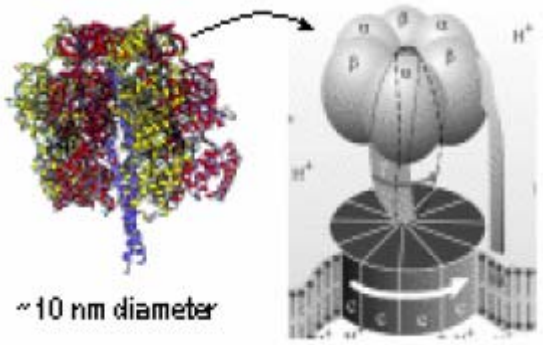
Sensing

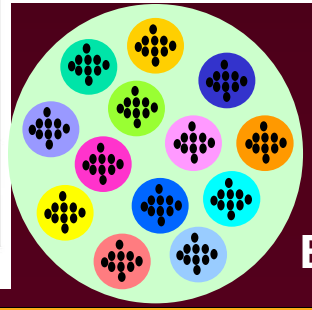
NanoElectronic Applications

Future Information Processing





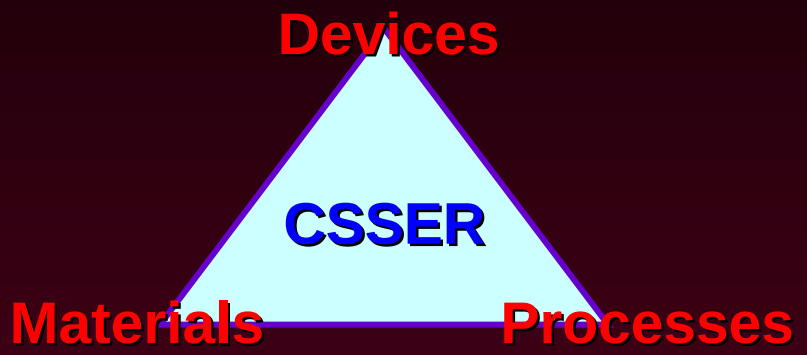




Bioelectronics

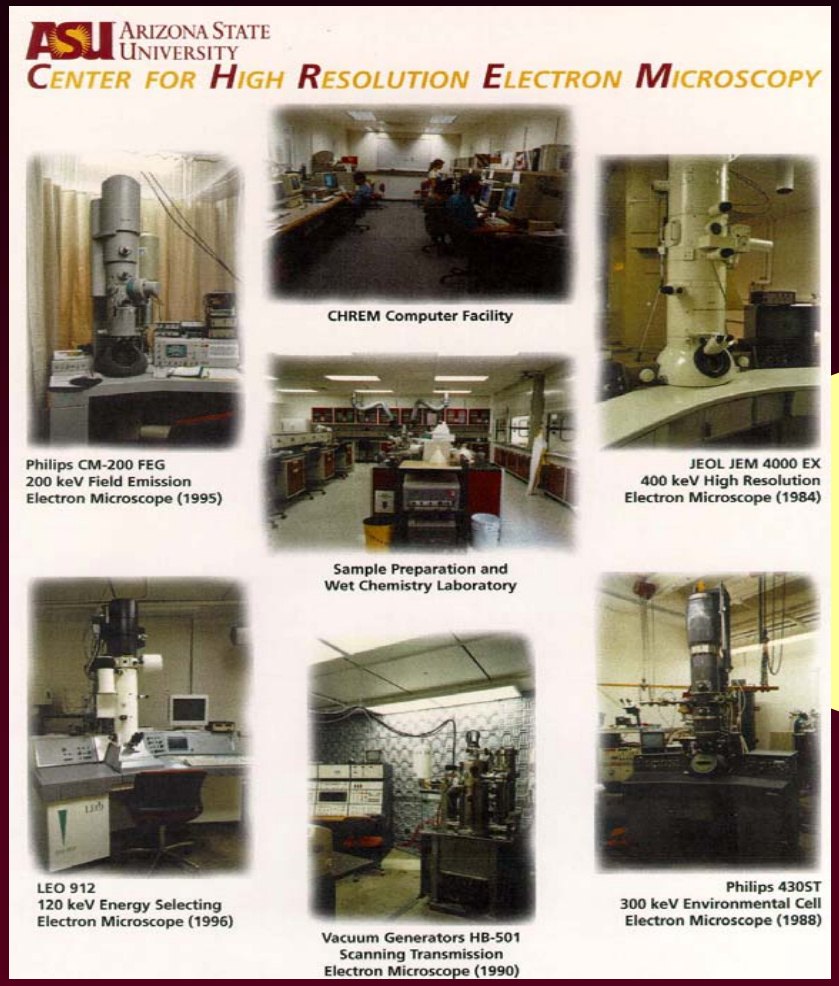
Energy

Center for Solid State Electronics Research

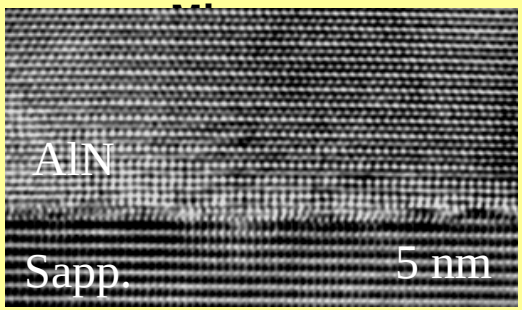


- Nanostructures
- Devices
- Advanced Materials
- Optoelectronics
- Low Power Electronics
- Focused Ion Beam
- Bio & Molecular Electronics

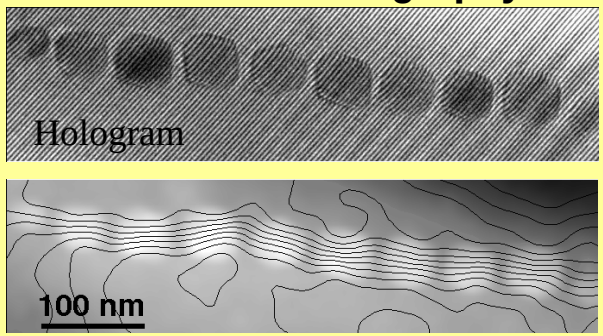
LeRoy Eyring Center for Solid State Science



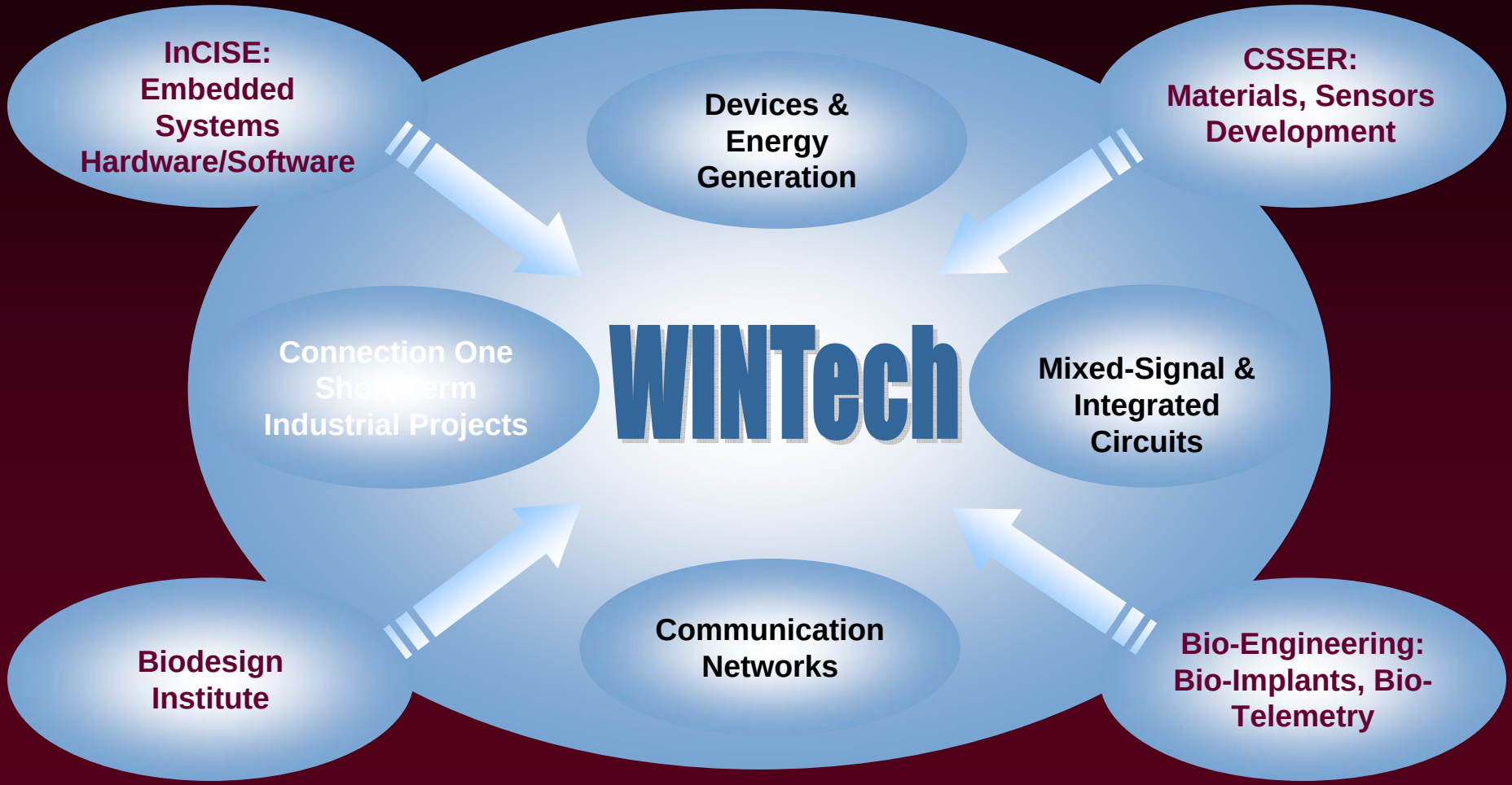
High-Resolution Electron



Electron Holography



Wireless Integrated NanoTechnology: ConnectionOne/WINTECH



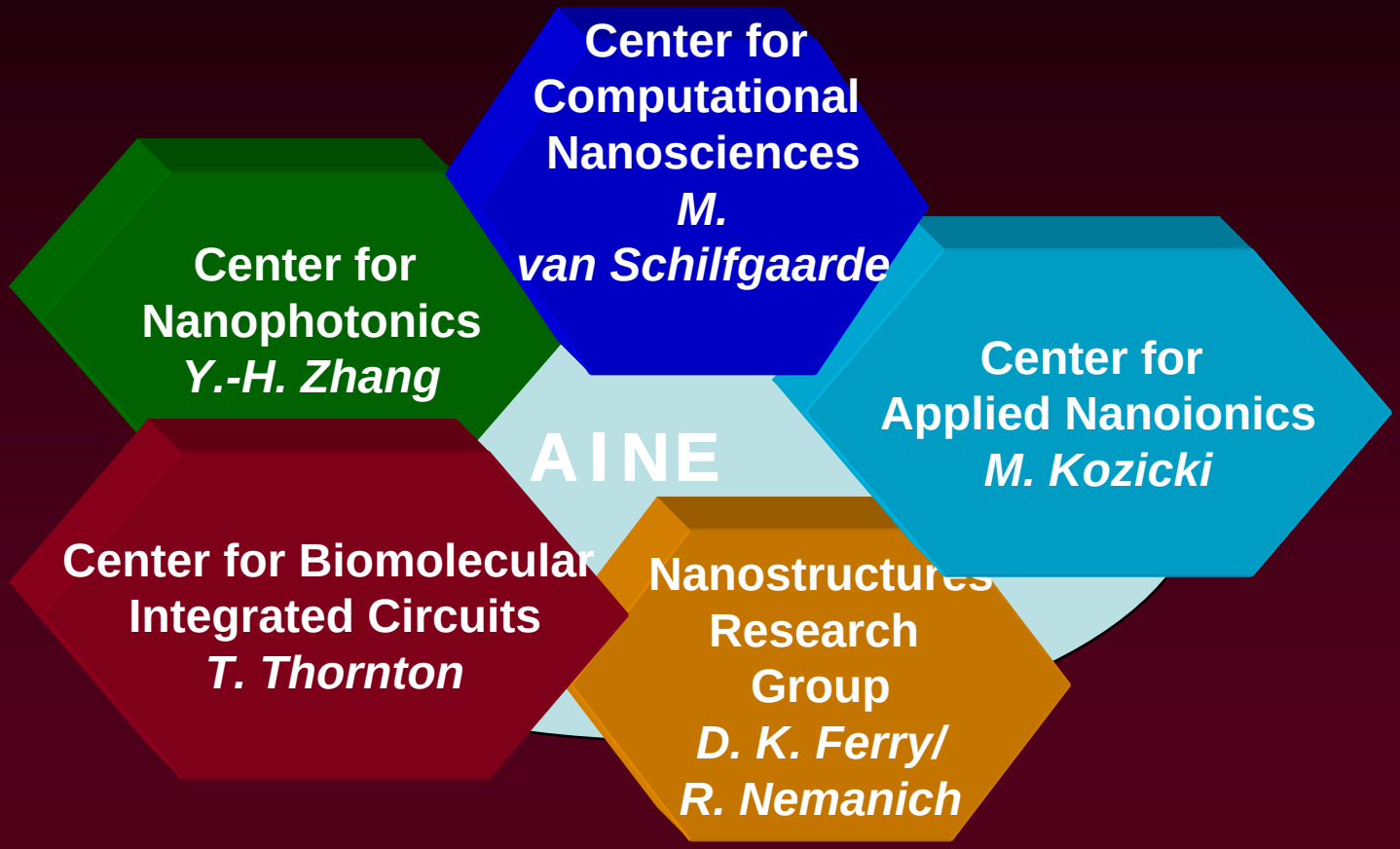
Center for Nanotechnology In Society

CNS-ASU began its funding on 1 October 2005 and held its Public Launch on 30 January 2006

The Center for Nanotechnology in Society
ARIZONA STATE UNIVERSITY

- Research the societal implications of nanotechnologies
- Train a community of scholars with new insight into the societal dimensions of nanoscale science & engineering (NSE)
  - Undergraduate, graduate and post-doctoral courses
- Engage the public, policy makers, business leaders, and NSE researchers in dialogues about the goals and implications of NSE
  - Build network committed to making NSE socially beneficial & addressing NSE-related societal conflicts
- Partner with NSE laboratories to introduce greater reflexiveness in the R&D process
  - Address problems as ideas are being generated, evaluated & developed

Arizona Institute for Nanoelectronics (AINE)



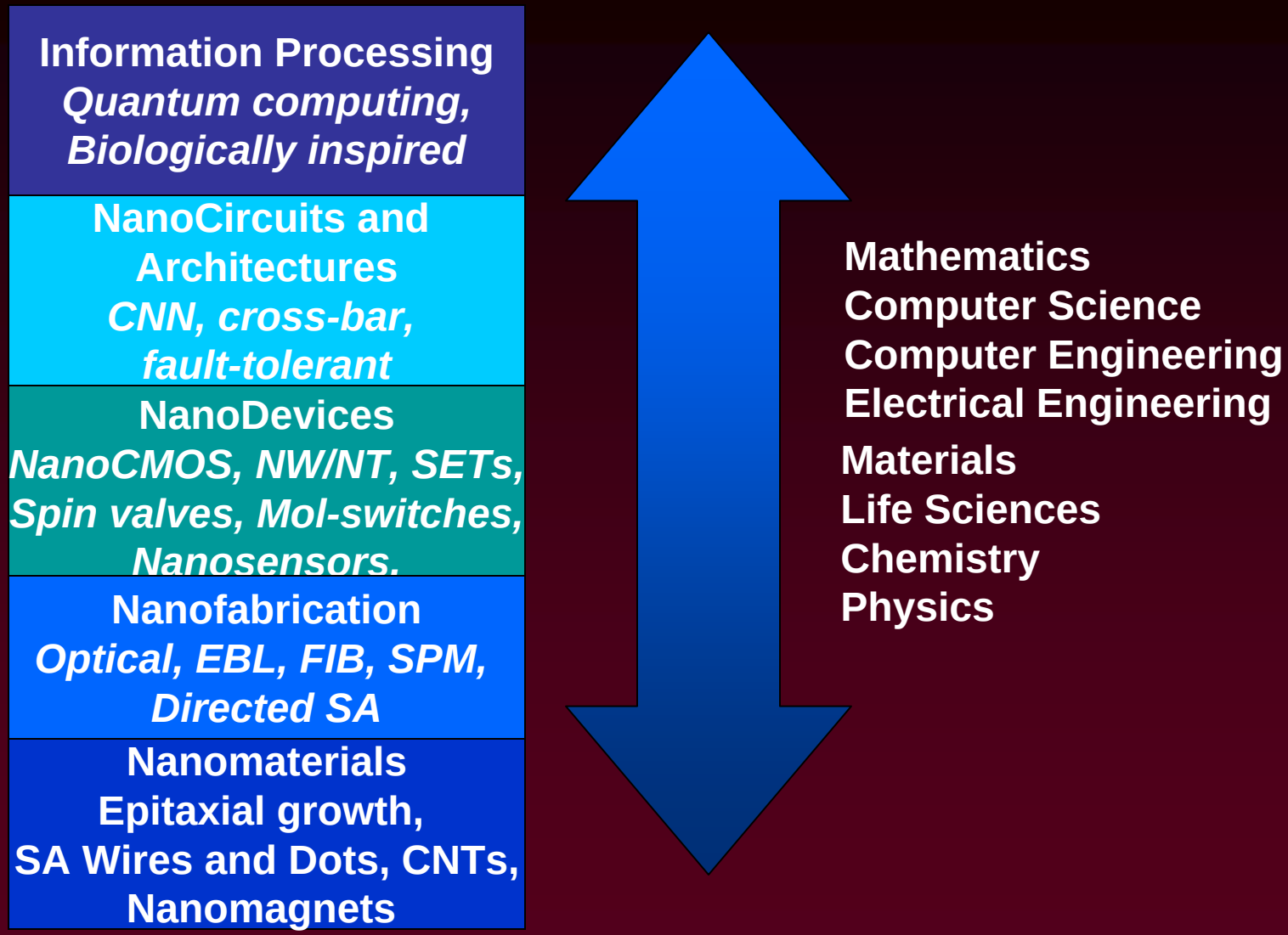
Executive Committee

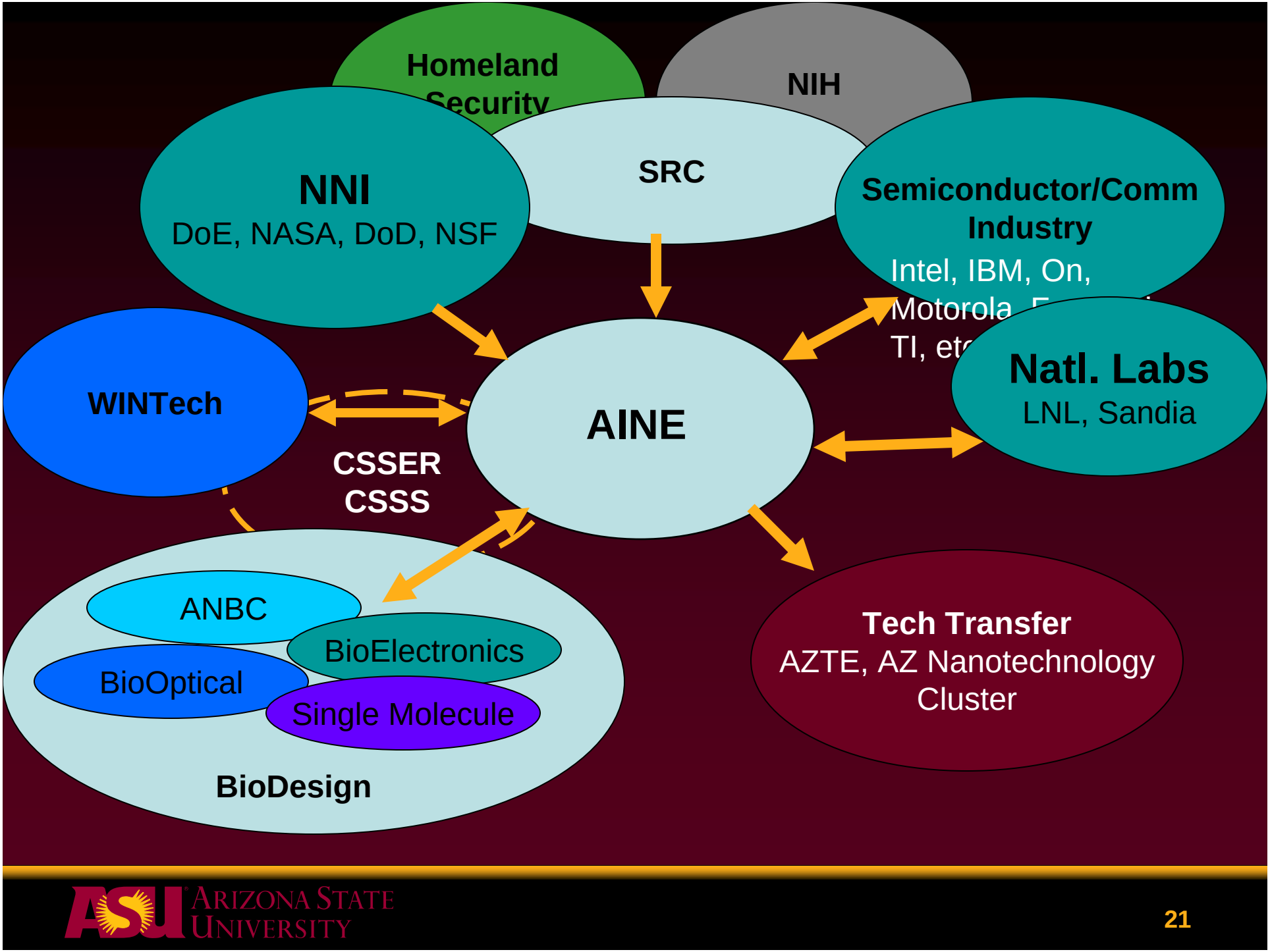
- Stephen Goodnick, Chair
- Larry Cooper
- Peter Bennett
- Jeff Drucker
- David Ferry
- Robert Nemanich
- Nathan Newman
- David Smith
- Trevor Thornton
- Yong-Hang Zhang

External Advisory Board

- Robert Chau, Director of Transistor Research and Nanotechnology, Intel
- Michael Lebby, Director OIDA
- Herb Goronkin, Lux Capital
- George Maracas, Past Director of Nanotechnology, Motorola ENPS Labs
- Meyya Meyyapan, Director, Center for Nanotechnology, NASA Ames Research Ctr.
- Tom Picraux, CTO, DoE Center for Integrated Nanotechnologies (CINT), LANL

Interdisciplinary Hierarchy




Homeland Security
NIH
NNI
DoE, NASA, DoD, NSF
SRC
Semiconductor/Comm Industry
Intel, IBM, On,
Motorola
TI, etc
WINTech
CSSER
CSSS
AINE
Natl. Labs
LNL, Sandia
ANBC
BioElectronics
BioOptical
Single Molecule
BioDesign
Tech Transfer
AZTE, AZ Nanotechnology Cluster

Small Times Magazine 2007

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3	University of Illinois at Urbana-Champaign
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5	University of Michigan
6	University at Albany-SUNY
7	University of Maryland
8	University of Pittsburgh
9	Rice University
10	University of Minnesota

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3	University of Illinois at Urbana-Champaign
4	Penn State University
5	University of Maryland
6	Rice University
7	North Carolina State University
8	University of Washington
9	Arizona State University
10	Cornell University

FACILITIES	
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6	Cornell University
7	University of California Los Angeles
8	Purdue University
9	Rice University
10	Rensselaer Polytechnic Institute

COMMERCIALIZATION	
1	Arizona State University
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6	Stanford University
7	University of Michigan
8	University of Washington
9	University of Louisville
10	Louisiana Tech

Symposium and School on Nano and Giga Challenges in Electronics and Photonics (NGC2007):
from Atoms to Materials to Devices to System Architecture
Phoenix, Arizona, March 12-16, 2007

http://asdn.net/ngc2007/

Co-chairmen: *Herbert Goronkin, Stephen Goodnick, Anatoli Korkin*

Summary

- About 300 participants from 41 countries
- Broad presentation: Nobel laureates, science and business leaders and government officials
- Sponsored and supported by 37 organizations: funding, government and media agencies, companies and universities
- Published special issues in Nanotechnology and Solid State Electronics and tutorial book with Springers

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