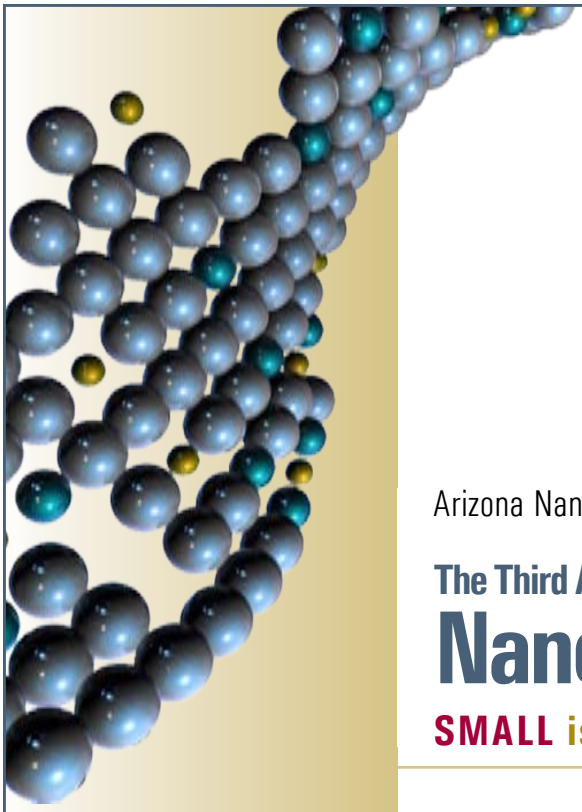

Arizona Nanotechnology Cluster presents:

The Third Annual

Nanotechnology Symposium

SMALL is BIG: Global Perspectives on Nanotechnology

THURSDAY, APRIL 10, 2008

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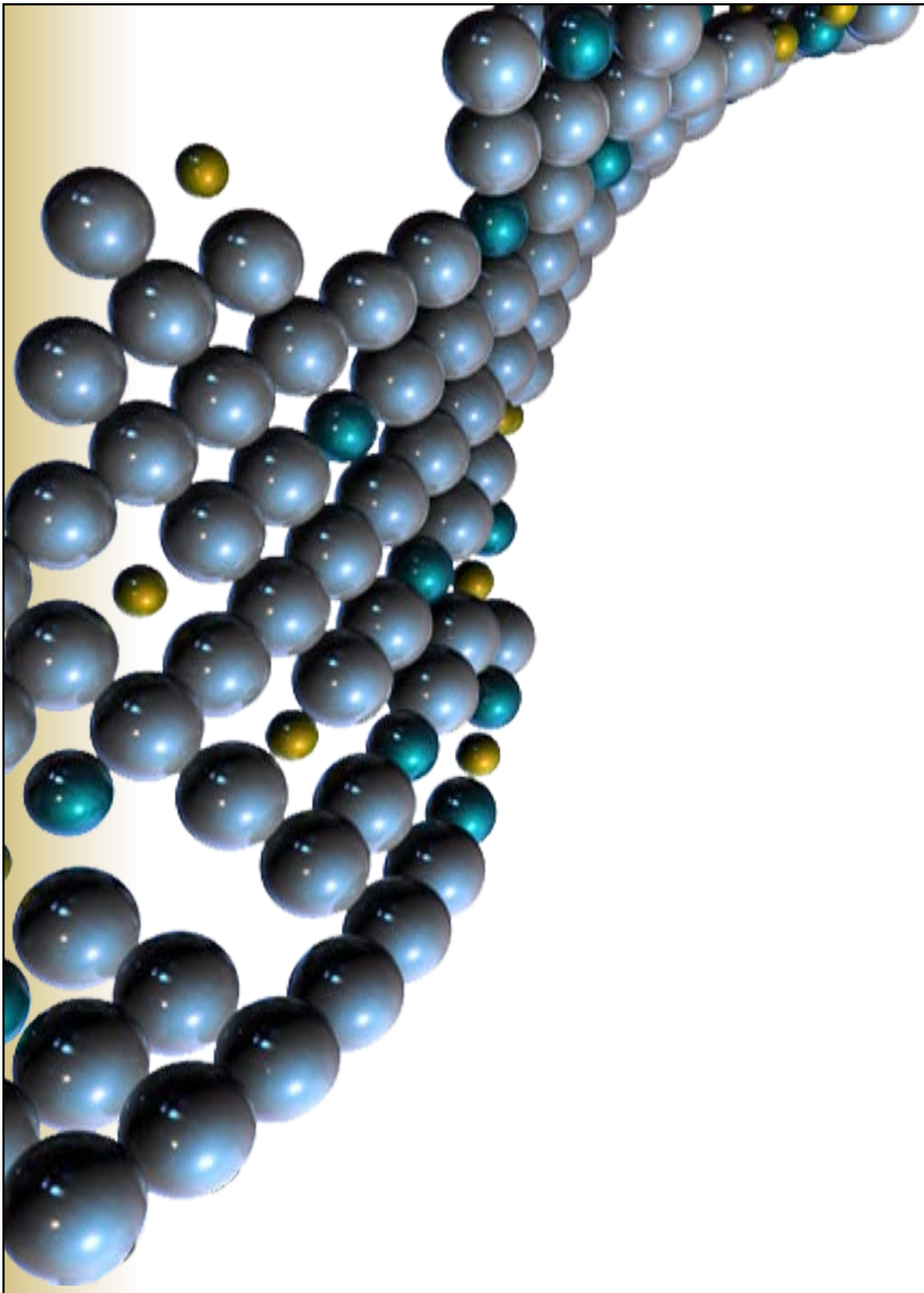

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ARIZONA NANOTECHNOLOGY CLUSTER

PROGRAM

Registration, Vendor Displays and Breakfast 7:00

Opening Remarks, and Welcome 8:00

Dr. Matt Kim, *CEO, Quantera*
Mary Manross, *Mayor of Scottsdale, Arizona*
Dr. Arthur W. DeCabooter, *President of Scottsdale Community College*
Dr. Deirdre Meldrum, *Dean, Engineering, Arizona State University*

Keynote Presentation 8:20

Introduction: Michael Berman, *UofA*

Nanotech Solutions for Homeland Security Challenges
Bradley Buswell, *Deputy Undersecretary for Science and Technology, Department of Homeland Security*

Session I: Nanotechnology of Low Dimensional Structures. 9:00

Session Chair: Robert J. Brilon, *CEO, Golden Pegasus Capital*

Nano-scale Materials and Structures for CMOS Devices
Dr. Stefan Zollner, *Freescale, USA*

Photoluminescence of SiGe Quantum Dots
Dr. James Kolodzey, *Univ. of Delaware, USA*

Center for Integrated Nanotechnologies (CINT) and Semiconducting Nanowire
Dr. Thomas Picraux, *Los Alamos National Laboratory, USA*

Designer DNA Architectures for Nanobiotechnology
Dr. Hao Yan, *Arizona State University, USA*

Coffee Break and Vendor Displays 10:30

Session II: Regional Nanotech Initiatives 11:00

Session Chair: Bob Eaton, *Arizona Bioindustry Association*

Exciting Opportunities for Nanotechnology R&D and Business in Singapore
Dr. Lerwen Liu, *NanoGlobe, Singapore*

A New Paradigm for Research, Development, and Education in the 21st Century
Dr. Alain Diebold, *Albany Nanotech, USA*

Minalogic - The Competitive Cluster Model in France
Nicolas Leterrier, *Minalogic, France*

Lunch and Vendor Displays 12:00

Session III: Technology of Nano 1:30

Session Chair: Steve Zylstra, *AZ Tech Council*

The Importance and Relevance of Advanced Electron Microscopy in Nanotechnology
Dr. Debbie Stokes, *FEI, Netherlands*

Nanoscience and Nanotechnology at McMaster - A Model for an Interdisciplinary Approach
Dr. Peter Mascher, *McMaster University, Canada*

Challenges of Commercializing a Nanotechnology into Commodity Memory Markets
Dr. Narbeh Derhacobian, *Adesto, USA*

Nanotech Enabling tech for Motorola Products
Dr. Papu Maniar, *Motorola, USA*

Coffee Break and Vendor Displays 3:00

Session IV: International Views of Nanotechnology 3:30

Session Chair: Dr. John Herrold, *Raytheon*

Structuring Nanotechnology Research Activities in Quebec
Dr. Normand Voyer, *Laval University, Canada*

Responsible Nano Code – A timely initiative in support of the advancement of responsible nanotechnologies
Dr. Steffi Friedrichs, *UK Nanotechnology Industries Association, UK*

Fundamental Nanomaterials Research and Development: An Australian Perspective
Dr. Max Lu, *University of Queensland, Australia*

Panel Discussion on SBIR Funding 4:30

Session Chair: Andrew Askland, *ASU Law School*

Panel Moderators:
Brett Johnson, *Snell & Wilmer, Phoenix, AZ*
Jeff Scudder, *Snell & Wilmer, Phoenix, AZ*

Panelists:
Dr. John Waszczak, *Raytheon, Tucson, AZ*
Dr. John Lombardi, *Ventana Research, Tucson, AZ*
Grant Anderson, *Paragon Space Development Corp., Tucson, AZ*
Ray Friesenhahn, *MSU TechLink, Boseman, MT*
Dr. Matt Kim, *QuantTera, Scottsdale, AZ*

Networking Reception, Vendor Displays and Entertainment 5:15–7:00

THIRD ANNUAL NANOTECHNOLOGY SYMPOSIUM – WELCOME

On behalf of the Program Committee, welcome to the Third Annual Arizona Nanotechnology Cluster Symposium. This year, we have an exceptional program, which includes speakers and panelists who will provide local, national, and international perspectives on nanotechnology, with topics ranging from university research, to funding opportunities, to the challenges of commercializing the technology. In addition, during the past year, the Committee organized, sponsored and held essay contests for middle school, high school, and college students; the winners of the contests will be announced at the Symposium.

My sincere appreciation goes out to all the Committee members for their hard work and diligence in putting together this Symposium. I also want to thank the sponsors for their generous donations, as well as the speakers and session chairs for presenting an outstanding program. And, finally, thank you for attending and participating in this year's event. We hope you enjoy the Third Annual Nanotechnology Symposium.

CYNTHIA L. PILLOTE
PROGRAM COMMITTEE CHAIR
ARIZONA NANOTECHNOLOGY CLUSTER
CPILLOTE@SWLAW.COM
602-382-6296

CHAIRMEN'S WELCOME

MATT KIM, PHD
CLUSTER CO-CHAIR

MICHAEL BERMAN
CLUSTER CO-CHAIR

On behalf of the Members and Board of the Arizona Nanotechnology Cluster, we would like to welcome all of you to the 3rd Annual Arizona Nanotechnology Symposium, with the theme "Small is Big: Global Perspectives on Nanotechnology".

Work in Nanotechnology is accelerating with research and development occurring all over the world. Today we have many international, national and local speakers to discuss the state of nanotechnology not only from the science perspective but from a global perspective that encompasses views from North America, Europe, Asia and Australia. The symposium culminates in significant planning and organization efforts of our Organizing Committee led by Cindy Pillote and the gracious support of our Sponsors.

The Arizona Nanotechnology Cluster, is an Arizona not-for-profit 501c3 organization and was formed in January 2003 to share technological advances, and to promote business development in the fast-growing field of nanotechnology. Membership is free, as are our monthly seminars in Tucson and Phoenix, which are open to the public. Arizona is a wonderful state for Technology Development and we are thankful to have the amount of support for our Cluster.

There are many groups to whom we would like to extend special thanks. First are our sponsors, next is our good friends and international guests. We also have many students of Science, Technology Engineering and Mathematics here today, who represent the future of Nanotechonlogy in Arizona, and we hope that the Keynote talks and the Sessions will reaffirm to the students that they are in the right fields at the right time. Nanotechnology forms a large branch of knowledge that finds its place at the very top of many new as well as existing fields.

It is a great pleasure of having this opportunity to meet you personally, we are sure that this will be a outstanding opportunity for us to learn from each other. We encourage you to meet our Speakers and Special Guests who are listed in the Program, with the hope of furthering dialogue on this very exciting field.

Once again we want to welcome everybody and hope that you will find the keynote and the sessions both interesting and inspiring. On behalf of the Arizona Nanotechnology Cluster, we thank you for your interest in moving Arizona forward in this exciting field.

CORDIALLY,
MATT AND MICHAEL

MARY MANROSS

MAYOR
SCOTTSDALE, ARIZONA

Mayor Mary Manross has been Mayor of Scottsdale since June 2000. She was reelected and began her second term as Mayor in June 2004. Previously, she served two terms as a City Councilwoman from 1992 to 2000.

Mayor Manross has held leadership positions in city government and community, educational and church organizations since she came to Scottsdale in 1972. Among her primary areas of interest have been neighborhood and redevelopment issues and preservation of the McDowell Mountains and Sonoran Desert.

She chaired the Scottsdale Parks and Recreation Commission, served on the Planning Commission and served as vice chair of the Scottsdale Bond Committee in the early 1980s.

She was director of the Marriage Preparation Seminars at the Franciscan Renewal Center for 22 years, in which more than 15,000 adults have participated. She also served as vice president of the Casa de Paz Y Bien Foundation and as a member of the leadership team for the Valley Interfaith Project.

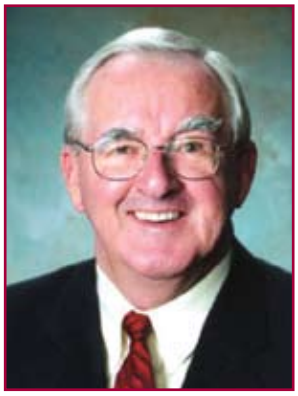
She served on the Governor's Task Force on Urban Planning, the Arizona Town Hall and as a League of Women Voters board member. She also participated as chairwoman of the Maricopa Association of Governments Youth Policy Advisory Committee and as a board member of Arizona Women in Municipal Government. She was a member of the National League of Cities (NLC) Energy, Environment and National Resources Policy Committee.

Mayor Manross continues to represent her community at the regional, state and national levels. She is a member of the Executive Committee of the Arizona League of Cities and Towns and a board member of the Arizona Municipal Water Users Association. She serves on the Regional Public Transportation Authority, where she previously served as chair. She is vice chair of the Maricopa Association of Governments Executive Committee, chair of the MAG Regional Domestic Violence Council and serves on the MAG Transportation Policy Committee.

Currently, she is a member of the NLC Transportation, Infrastructure and Services Steering Committee, the primary group responsible for the NLC's national policy on transportation.

Mayor Manross has a bachelor's degree in political science and a teaching credential. She attended both the University of California at Los Angeles and Minot State University.

She and her husband Larry have four children and two grandchildren.



DR. ARTHUR W. DECABOOTER

PRESIDENT SCOTTSDALE COMMUNITY COLLEGE
MARICOPA COMMUNITY COLLEGES

Scottsdale Community College (SCC) is located on the eastern boundary of the city of Scottsdale, Arizona on 160 acres of leased land belonging to the Salt River Pima-Maricopa Indian Community. SCC opened its doors in 1970 and today is serves nearly 12,000 students.

The mission of Scottsdale Community College is to create accessible, effective, and affordable environments for teaching and learning for the people of our communities in order that they may grow personally and become productive citizens in a changing and multicultural world.

SCC, which is led by Dr. Art DeCabooter, is one of the ten colleges that comprise Maricopa County Community College District.

DEIRDRE MELDRUM

DEAN
ENGINEERING DEAN'S OFFICE, ELECTRICAL ENGINEERING
ARIZONA STATE UNIVERSITY

Dr. Meldrum, Dean of the Ira A. Fulton School of Engineering (IAFSE), is also director of the Center for EcoGenomics at the Biodesign Institute at Arizona State University. In addition, Meldrum directs a National Institutes of Health Center of Excellence in Genomic Science. Her research interests include genome automation, microscale systems for biological applications, ecogenomics, robotics and control systems. Before joining ASU in 2007, Meldrum had been on the faculty of the University of Washington in Seattle since 1992, where she founded and directed UW's Genomation Laboratory. She is a member of the National Advisory Council for Human Genome Research, which advises the Department of Health and Human Services, the National Institutes of Health and the National Human Genome Research Institute.

WELCOME

ORGANIZERS

CHAIR: Cynthia L. Pillote

CO-CHAIR: Christine McAuliffe

CO-CHAIR: Dawn Nagle

Damon Ashcraft

Michael Berman

Jeremy Burdon

Timothy Cale

Herb Finkelstein

Mark Goldstein

Matt Kim

Tom McGlew

Kannan Raj

Beverly Scott

Gerald Thurman

Glen Vaughn

Glenn Yaguchi

CYNTHIA L. PILLOTE, ESQ.

PARTNER
SNELL & WILMER, L.L.P.

Cindy is an attorney with the law firm of Snell & Wilmer. Her legal practice includes intellectual property counseling; patent, trademark, and copyright prosecution; related technology transfer; and licensing. Technical experience in, among other areas, nanotechnology, medical devices and products, life sciences, nutraceuticals, cosmeticeuticals, semiconductors and semiconductor manufacturing, electronic commerce, mechanical devices, chemical processes and compounds, mining technology, and electronic communication.

In addition to the various Bar Associations, Cindy also is a member of the American Intellectual Property Law Association, International Trademark Association, and the Licensing Executive Society. She is also a board member of the Arizona Nanotechnology Cluster, the Center for Applied Nanoiononics at ASU, and Community Health Charities, and chairs this year's Arizona Nanotechnology Symposium Committee.

Prior to earning her law degree from Arizona State University in 1997, she had a professional career in engineering at Motorola and Digital Equipment Corporation and earned a B.S. in Chemical Engineering and an M.S. in Materials Science Engineering from ASU.

CHRISTINE MCAULIFFE

CO-CHAIR
BIOTECHNOLOGY & LIFE SCIENCES INDUSTRY GROUP
JENNINGS STROUSS

Ms. McAuliffe is Co-Chair of the Jennings Strouss's Biotechnology & Life Sciences Industry Group. She has a biotechnology and science background, having earned a B.S. in Biology, with an emphasis in Genetics and Molecular Biology. She also has technical knowledge in cell biology, biochemistry and organic chemistry.

Ms. McAuliffe is a registered patent attorney who has been involved in life sciences research and development for over twelve years–first as researcher and then as an attorney. Christine predominantly represents life science and other technology clients ranging from major universities and large corporations to startup and emerging companies. Her professional experience includes assisting clients with creating and protecting intellectual property assets; strategically managing those assets through intellectual property portfolio development and assessment; exploiting those assets through technology acquisition and transfer, licensing arrangements, joint ventures and strategic alliances; and then enforcing those rights through intellectual property litigation.

Ms. McAuliffe's experience in the areas of patent, trademark and copyright law includes:

Patent prosecution
Patent validity and infringement opinions
Patent litigation
Trademark and copyright registration and protection
Trademark, trade dress and copyright litigation
Preparation and negotiation of assignments, licenses and other technology agreements
Counseling on technology acquisition and transfer, joint ventures and strategic alliances
Intellectual Property portfolio development, management and assessment

Christine is very involved in the life sciences and technology industries, including serving on the Board of Directors of the Arizona Bioindustry Association and on the Board of Directors of the Arizona Nanotechnology Cluster, as well as chairing the Health and Human Services Committee of the Section of Administrative Law and Regulatory Practice of the American Bar Association. Christine has also earned her Masters of Laws degree in Biotechnology and Genomics at the Sandra Day O'Connor College of Law at Arizona State University, where she is also a research fellow in the Center for Law, Science and Technology.

For more information about our firm and attorneys, please visit our website at: www.jsslaw.com

DAWN NAGLE

TRADE COMMISSIONER
CANADIAN CONSULATE, PHOENIX

Dawn Nagle is a Trade Commissioner with the Canadian Consulate in Phoenix, Arizona. Her priority sectors include Information and Communications Technologies, Biotechnology, and Nano- Technology. She focuses on promoting closer trade, commerce, investment and S&T partnerships between Canadian governments, institutions, agencies and private sector firms, and their counterparts in Arizona and New Mexico.

She received her Bachelor of Science Degree from Chicago State University in Chicago, Illinois.

She has an extensive background in the software and the IT sector previously working for such companies as Compuware and TRW Global Systems Integration.

Ms. Nagle is a longstanding member Phoenix Sister Cites Commission, a member of the Nano Giga Challenges Symposium Organizing Committee, and a member of the Arizona Nanotechnology Cluster's Symposium Committee.

She can be reached at dawn.nagle@international.gc.ca

DAMON ASHCRAFT

ASSOCIATE
SNELL & WILMER

Damon Ashcraft is a member of the Intellectual Property group in the Phoenix office of Snell & Wilmer, L.L.P. Damon concentrates his legal practice on procuring and protecting patents, trademarks and copyrights. Damon also has extensive experience with enforcement of intellectual property rights, including patent and trademark disputes. Part of his experience with trademark law includes recovering numerous infringing domain names from so-called cybersquatters. Damon also has experience with technology transfer and has procured and negotiated numerous intellectual property license and assignment agreements.

Damon is a frequent speaker and lecturer at various programs and other events geared towards entrepreneurs and small business owners. For example, Damon has given presentations on "Intellectual Property and Technology Transfer" at the University of Arizona; "Legal Issues in Advertising and Marketing" for the International Trademark Association; and a presentation on "Strategies for Protecting Innovations and Brand Assets" for the Arizona Product Development and Management Association. He also has lectured at 2 courses devoted to intellectual property at the University of Missouri.

MICHAEL BERMAN

CO-CHAIR, ARIZONA NANOTECHNOLOGY CLUSTER

Laboratory Manager of the Micro/Nano Fabrication Center (MFC) at the UA. During more than 25 years in the semiconductor industry, Michael has published 12 papers, been issued over 40 patents with 20 patents pending. Before coming to the UA, Michael was a both a manager and staff engineer for LSI Logic. At LSI, Michael was "Inventor of the Year" for 2002 and "Outstanding Patent Liaison of the Year" for 2003.

ORGANIZERS

JEREMY W. BURDON, PH.D.

DIRECTOR OF INTELLECTUAL ASSETS, LIFE SCIENCES
ARIZONA TECHNOLOGY ENTERPRISES (AZTE)

Dr. Jeremy Burdon is currently Director of Intellectual Assets, Life Sciences at Arizona Technology Enterprises (AzTE) in Scottsdale. Dr. Burdon manages the disclosure review board for AzTE Health Science portfolio, representing Arizona State University, Biodesign Institute and Northern Arizona University. His main responsiblies are client interfacing, IP due diligence, patentability, filing strategy and licensing support.

Prior to AzTE Dr. Burdon was at Medtronic, Inc., Minneapolis, MN, where he was an IP specialist within the Neurological business development / product planning group. There he was responsible for IP portfolio management, tactical/strategic patent analysis, IP mapping / competitive intelligence, invention disclosure due-diligence and liaison activities in R&D and product development environments. Prior to taking his position Medtronic Neurological, Dr. Burdon was a principal scientist in the Cardiac Rhythm Disease Management business sector, focused on the development of new material technologies for implantable medical devices.

Dr. Burdon was a distinguished member of the technical staff at Motorola, Inc., where he worked for almost 10 years. At the Component Products Division in New Mexico, he developed polymer thin-film technologies, and oxide thin-films for RF/microwave applications, and transitioned several technologies into the pre-production stage. Within Motorola's Corporate Research Labs in Tempe, Arizona, he worked in R&D developing material technologies for micro-devices, and on advanced development of micro-fluidic devices for analytical and on-chip molecular biological and chemical analysis. Dr. Burdon developed piezo-jetting technology for spotting oligonucleotide and SNP microarrays, co-developed the worlds first continuous-flow PCR on an integrated microscale chip, and later worked on micro-scale PCR biochemistry and device optimization.

Dr. Burdon holds a B.Sc. in chemistry and a Ph.D. in polymer science from the University of Sussex, UK, where his research focused on oxidative degradation of organic/polymer materials and the polymerization behavior of bisphenol-A epoxy systems for graphite-based composites using chemiluminescence and ion-recombination luminescence techniques. Prior to his industrial research and development career, Dr. Burdon completed postdoctoral research in the area of biologically-inspired polymer-ceramic micro/nano-phase composites, and an industry-funded research professorship at the University of Arizona in biomimetic materials processing.

Dr. Burdon holds 14 US and European issued patents in the areas of materials, micro-devices, micro-fluidic systems and implantable medical devices.

TIMOTHY CALE

PROCESS EVOLUTION

Dr. Cale was Professor of Chemical Engineering for 16.5 years at Arizona State University (ASU) and 9.5 years at Rensselaer Polytechnic Institute (RPI). He now runs Process Evolution (process-evolution.com), a software and consulting company, and is Research Professor in the School of Materials at ASU. For the last 20 years, his research has focussed on experimental and modeling related to semiconductor materials processing, particularly metalization-related (BEOL) processes. His current efforts focus on three dimensional integrated ciruits. Prof. Cale ran research centers related to semiconductor materials processing at both ASU and RPI.

HERB FINKELSTEIN

RESEARCH LIAISON OFFICER
IRA A. FULTON SCHOOL OF ENGINEERING
ARIZONA STATE UNIVERSITY

Herb Finkelstein joined ASU in 1997 as a research liaison officer. His responsibilities include working with industrial sponsors and partnerships to support the research mission of the Ira A. Fulton School of Engineering. He helps promote and facilitate faculty/industry research partnerships and works to create a resource network in the university, community and the international arena to identify and cultivate industrial partners. Mr. Finkelstein is very involved in the Valley's high tech industry; he is the engineering school's representative to the executive boards of the AeA, the Arizona Nano-technology Cluster, the Arizona Aerospace and Defense Industry Association, and is a representative member of the Arizona Technology Council and its Workforce Development Committee, the Arizona Bio-industry Association, the Arizona Chamber of Commerce and its D.A.T.A. Committee and Manufacturers' Council, and the Arizona Manufacturing Network, and is also a member of the National Defense Industry Association (NDIA) and it's Science, Engineering and Technology committee. He is also a board member of the Cognitive Engineering Research Institute (CERI)

Mr. Finkelstein's professional experiences include a position with the U.S. Army Night Vision Lab as a contracting officer technical representative. His research experience here involved working in the R&D sector on Army specific technologies, such as image intensifiers, night vision goggles and solid state transformers, as well as initiating the Army Night Vision Lab's hybrid microelectronics lab. He was the acquisition manager for Naval Air System Command (NAVAIR) radar warning receivers' ALR/67 and ALR/45. From 1982 to 1997, Mr. Finkelstein worked with and was a co-owner of FAI/Nanotechnologies, a logistics consulting company, where he was instrumental in winning a $40 Million contract with the Naval Supply System Command for a new program called the Rapid Acquisition of Manufacturing Parts (RAMP) program and took over the company and transformed it to a manufacturing firm fabricating high voltage focused ion beams. As part of his duties as CEO of FAI he became a lobbyist and was able to bring into the company $5 million in orders.

MARK GOLDSTEIN

PRESIDENT
INTERNATIONAL RESEARCH CENTER

Mark Goldstein is President of International Research Center, providing consulting, custom research, and strategic support for business, legal and public policy clients across a variety of high technology disciplines and arenas since 1992. Mark is a technophile and technology visionary, activist, advisor, and entrepreneur with extensive experience and connections throughout numerous technology sectors. IRC concentrates on clients' needs

in the complex worlds of telecommunications, information technology, eCommerce, eContent, eLearning, the Internet, biotechnology and other high-tech domains by harnessing global information resources for informed decision making. Mark is involved with a number of policy, economic development, professional and trade groups, as well as being a frequent speaker and trainer.

DR. MATT KIM

CEO, QUANTTERA
CHAIRMAN, ARIZONA NANOTECHNOLOGY CLUSTER

Dr. Matt Kim holds a Ph.D. in Physics from the University of Illinois in Urbana-Champaign and B.S. in Engineering Physics from Cornell University.

Dr. Kim is the Founder and President of QuantTera. QuantTera specializes in developing quantum based devices for photonic applications. Our focus is to develop manufacturable lasers, detectors, driver amplifiers and opto-electronic integrated circuits.

Dr. Kim is chairman of the board of the Arizona Nanotechnology Cluster a non-profit organization for advancing nanotechnology issues in the Phoenix area. In 2006 he received the Chairman's Award at the Governor's Celebration of Innovation in Phoenix for his contributions to Arizona's High Tech Industry.

In 2000 Dr. Kim co-founded MicroLink Devices, Inc., a leading manufacturer of transistors for cellular communications in Niles, IL. At MicroLink he was Vice President of Operations and supervised the transistor manufacturing program which ultimately resulted in vendor qualification at major telecommunication companies.

From 1994 to 2000, Dr. Kim served as Principal staff scientist at Motorola's corporate research laboratory. He demonstrated transistors with very high gain, which were used in Motorola cell phone technology. From 1989 to 1994, Dr. Kim was a senior scientist at Bandgap Technology Corporation where he was in charge of the characterization of transistors and lasers for telecommunication applications.

THOMAS MCGLEW

INSTRUCTIONAL PROGRAMS DEVELOPMENT SPECIALIST
MARICOPA ADVANCED TECHNOLOGY EDUCATION CENTER

Thomas McGlew has more than thirty years of experience in the fields of semiconductor manufacturing and employee development. Tom has served as one of the founding Committee Members of the Northwest Semiconductor Workforce Development Consortium, as a Steering Member for the Arizona SEMI Committee, as a Board Member of the AZ Nanothenology Cluster, and as a Member of the American Society for Training and Development (ASTD). He is the Instructional Programs Development Specialist at the Maricopa Advanced Technology Education Center, with Project Management responsibilities for the Work-Ready Electronics program. Mr. McGlew is a certified instructor for numerous Management and Leadership Development Workshops and has spoken at two ASTD Technical Education Conferences on Mentoring in the Workplace.

Company Website: www.matec.org

Other Links:
www.matecnetworks.org
www.work-readyelectonics.org

DR. KANNAN RAJ

FOUNDER AND PRESIDENT
NEXTERA PHOTONICS

Dr. Kannan Raj is Founder and President of Nextera Photonics, a technology startup company. He has over 20 years versatile experience in executive and general management, marketing and development of mixed signal ICs and photonics. Most recently he served as Product Line Manager for Zarlink Semiconductor and held responsibility for the P&L for the I/O Products Group, managing mixed signal integrated circuit product lines in Phoenix, Arizona and the photonics product lines in Jarfalla, Sweden. He held diverse management roles at Primarion, a leading mixed signal semiconductor company focused on digital control of power and optical I/O, as R&D head and product development leader, product line and program manager, operations head and reliability manager. He was responsible for the marketing and business strategy of the mixed signal integrated circuit product lines and enabled it's growth from a startup company into a market leader, gaining over 70% market share in arrayed I/O products. Prior to that, he served for nearly 4 years at Intel Corp. and managed several product development teams, industry programs and university collaborative research programs on design and test, R&D and IP development in semiconductors and photonics. Prior to Intel, he was assistant professor and project coordinator at George Mason University where he facilitated industry/university collaboration on adoption of emerging technologies. He has over thirty five issued US and international patents and over forty publications. He was elected Sr. Member IEEE in 2004 and serves on the board of the Arizona Nanotechnology Cluster. He served as the Organizing Chair for the First AZ Nanotech Symposium in 2006. He holds a PhD from George Mason University, MSEE from Virginia Tech and an ME in ECE from Indian Institute of Science, Bangalore.

BEVERLY SCOTT

SENIOR QUALITY ENGINEER
MEDTRONIC MICROELECTRONICS CENTER

Beverly is a Senior Quality Systems Engineer with the Medtronic Microelectronics Center. Her responsibilities include: leading audits to ensure compliance with both internal procedures and external regulations such as ISO 9001 necessary for the production and sale of medical devices, Electrostatic Discharge applications and compliance, CAPA Board support, Customer Satisfaction and leading continuous improvement projects to increase efficiency and effectivity in association with the manufacture of hybrids.

Prior to Medtronic, Beverly was employed in quality management, manufacturing and test engineering, in the Thin Film Media and Vascular Graft businesses.

Beverly is member of the ASU Polytechnic Campus Industry Advisory Board (IAB), past Chairperson of the Medtronic Foundation, Team Leader for the ASU Alumni Medallion of Merit Scholarship selection committee and member of the American Heart Association Go Red for Women Campaign. This year she serves on the Symposium committee as the Essay Contest Coordinator.

Beverly holds a B.S. Electronic Engineering Technology from Arizona State University. She is also an ASQ Certified Quality Auditor.

GERALD THURMAN

CS INSTRUCTOR
SCOTTSDALE COMMUNITY COLLEGE

Gerald Thurman has been a computer and math instructor at Scottsdale Community College since the fall of 1997. Thurman received a B.S. in mathematics from the University of Wisconsin at Whitewater in 1979 and a M.S. in Computer Science from Purdue University in 1980. He spent six years as a Member of Technical Staff at AT&T Bell Labs.

After moving to Arizona in 1985, Thurman worked three years as a computer programmer for three different start-up software companies. Prior to joining SCC, Thurman spent eight years as a chief programmer and system administrator at Scottsdale-based Discount Tire Company.

GLEN VAUGHN

Over 28 years experience with Medtronic, Inc. including 24 years in several director roles within the Medtronic Microelectronics Center. These included technology and product development, manufacturing, wafer fabrication, test engineering and operations, product engineering, IT, HR, training, security, and finance.

Twelve years with Motorola, Inc. in a variety of engineering and software roles.

Also, in recent years, had the privilege of serving on three boards: the Board of Directors of the Arizona Nanotechnology Cluster, the Board of Directors of the Arizona Bio-Industry Association, and the Dean's Advisory Board of the Ira A. Fulton School of Engineering.

Education includes Bachelor's and Master's degrees in Electrical Engineering from Arizona State University, along with a Doctorate in Economics.

TADASHI G. YUGUCHI

ENGINEERING FELLOW
RAYTHEON MISSILE SYSTEMS

Tadashi G. Yuguchi is an Engineering Fellow with Raytheon Missile Systems in Tucson, Arizona. He oversees Raytheon's Technology Base Research & Development Program, where current technology initiatives include advanced sensors, materials, processing, software, energetics, prognostics, and modeling and simulation relevant to both system level analyses and component level design. In addition to IP Management at Raytheon, Mr. Yuguchi develops collaborations with various universities through Raytheon's University Research Program and, and he works with the U.S. Small Business Administration's STTR and SBIR Programs. He is also involved in Raytheon's IDEA Program that provides seed funding for new-innovative concepts.

Prior to Raytheon Missile Systems, Mr. Yuguchi worked extensively in Program Management. His experience includes associated field testing of technologies for the U.S. Army weapon systems; systems analyses for advanced cruise missiles systems and applications; and the leveraging of company technical competencies into commercial business opportunities such as Sensor Systems for Advanced Traffic Management market opportunities. Mr. Yuguchi's Business Development and Integrated Technology Planning experience includes work at both corporate and operating unit levels. His work includes long-term strategic objectives, allocation of research investments to achieve growth objectives, and development of contingency plans for addressing market uncertainties.

ORGANIZERS

KEYNOTE SPEAKER

BRAD BUSWELL | KEYNOTE SPEAKER

CHIEF OF STAFF,
DEPARTMENT OF HOMELAND SECURITY
SCIENCE & TECHNOLOGY DIRECTORATE

Brad Buswell is a native of Durango, Colorado and a graduate of the United States Naval Academy. He is a retired submarine officer who served in numerous assignments in at sea and in Washington, DC. His Washington assignments included Congressional Liaison for Navy Research and Development Programs in the Navy Office of Legislative Affairs, Assistant to the Chief of Naval Operations for Force Transformation, Executive Assistant to the Chief of Naval Research, and various other positions on the Navy staff.

Following his retirement from the U.S. Navy, Mr. Buswell worked in the private sector for General Electric in its Washington Office as Manager, Government Relations for GE's Global Research division.

He was appointed as Chief of Staff, Department of Homeland Security Science & Technology Directorate and joined the Senior Executive Service in October 2006.

Mr. Buswell holds a Bachelors of Science in Systems Engineering from the U.S. Naval Academy and a Masters of Business Administration from The George Washington University.

ROBERT J. BRILON CHAIR, SESSION I

CEO, GOLDEN PEGASUS CAPITAL

The Golden Pegasus Fundraising division distributes a text-a-day technology product to non-profit organizations as an alternative fundraising product.

Through June 2007 Bob Brilon was the Chief Executive Officer as well as President and Chief Financial Officer for InPlay Technologies, Inc., Nasdaq:NPLA, (fka Duraswitch), a developer and licensor of electronic switch technologies as well as developer and manufacturer of digital pen technologies for the PC Tablet industry. Brilon had been with the company since its inception 1997 (consultant for the first 18 months) and lead the management team in determining and executing on its direction and goals.

Brilon joined the company full time in late 1998 raising a private equity round of $1.2M to bridge the company to a $10MM public offering putting them on AMEX and negotiating the sale of 18% of the company to Delphi Corp. for $11.5MM as well as an exclusive licensing arrangement for an additional $16MM. NPLA's market cap grew from $25MM to as high as $165MM over the next 2 years and the company moved to the Nasdaq:NMS. The bridge investors had purchased at $.75 and had the opportunity to capitalize on the greater than $17 stock value within just 2 years. Year 2000 and 2001 were tough years in the stock market but NPLA beat the odds through executing on deals.

Brilon began his corporate career at Go-Video in July 1986, at the time of its initial public offering, until April 1993. During his tenure as CFO, four public offerings and several private offerings were successfully completed to finance the development of the company's patented dual-deck VCR technology and rapid growth of its marketing and sales efforts.

Following Go-Video, Brilon took the position of CFO and VP of Operations and Administration at DataHand Systems, Inc., raising seed and angel capital for a development-stage ergonomic keyboard developer until April 1995. Brilon was then recruited by Rental Service Corp., (ACME Holdings) to hire an accounting and finance team to relocate the company headquarters from Irvine, Calif. to Scottsdale, Ariz. During his tenure RSC completed an initial stock offering in September 1996 for $100 million and grew RSC through mergers and acquisition to over $100 million in revenues and over $200 million in total assets.

EDUCATION:

Brilon attended the University of Iowa on a full academic scholarship after graduating valedictorian of his Keokuk, IA high school class. Brilon graduated with a bachelor of science in business administration (BBA) from the University of Iowa in 1982 and is a certified public accountant. Arizona Chairman and National Director of the AeA (2005-2007)

STEFAN ZOLLNER

SESSION I

FREESCALE SEMICONDUCTOR, INC.
HUDSON VALLEY RESEARCH PARK
HOPEWELL JUNCTION, NY

Stefan Zollner is an integration engineer in the 32nm SOI process technology development group at the IBM Alliance in East Fishkill, NY, located in the Hudson Valley about an hour north of New York City. He is responsible for the formation of silicide contacts, which connect the nanoscale silicon transistors to copper wires and the outside world.

After receiving his M.S. and Ph.D. degrees in physics at Universität Stuttgart (Germany) in 1987 and 1991, with a year as a Fulbright exchange student at ASU, and a year as a postdoc at the IBM Research lab in Yorktown Heights, NY, he joined the physics faculty at Iowa State University in Ames, IA. He left Iowa in 1997 and joined the Semiconductor Products Sector of Motorola (now Freescale Semiconductor, Inc.), where he has held several positions as a manager and individual contributor in Mesa, AZ, Tempe, AZ, Austin, TX, and East Fishkill, NY. Initially an expert in spectroscopic ellipsometry and x-ray diffraction (thin-film measure¬ment techniques used in the production of modern CMOS, bipolar, and III/V transistors), he has spent the last three years in CMOS process integration.

Dr. Zollner is a Fellow of the American Physical Society and APS Councillor representing the Forum on Industrial and Applied Physics (FIAP). He was a coorganizer of the 24th International Conference on the Physics of Semiconductors held in Flagstaff, AZ, in 2004. He is an author of over 130 peer-reviewed publications and over 100 conference presentations. He has given more than 50 invited talks at conferences and institutions.

NANO-SCALE MATERIALS AND STRUCTURES FOR CMOS DEVICES

Moore's law describes the scaling of Si CMOS transistors from microscopic dimensions to the nanoscale. Modern transistors have gate lengths on the order of 40nm. Moore's law is driven primarily by economic forces, which have made silicon CMOS technology the most significant commercial application of nanotechnology. Continued scaling faces significant economic and technological challenges. Economic forces have led to the shutdown of several semiconductor fabs in Phoenix, Tempe, and Mesa, and to a consolidation of CMOS R&D in just a few places in the world. I my talk, I will describe several practical solutions that have been applied to the extension of CMOS scaling to nanotechnology: (1) Embedded stressors in the source-drains regions deposited using selective epitaxy of silicon-germanium and silicon-carbon alloys enhance the channel mobility. (2) Low-resistance contacts using novel silicides reduce parasitic power losses. (3) Gate stacks involving metal oxides and metal gates reduce the leakage from the gate electrodes to the channel.

DR. JIM KOLODZEY

UNIVERSITY OF DELAWARE

SESSION I

Prof. James Kolodzey received his Ph.D. in electrical engineering from Princeton University in 1986 for research on SiGe alloys. Previously, he worked at IBM Corporation in optical communications, and at Cray Research on high speed computer circuits. From 1986 to 1990, he was an Assistant Professor of Electrical Engineering at the University of Illinois at Urbana-Champaign where he established laboratories for the cryogenic studies of high frequency devices, and the fabrication of devices by molecular beam epitaxy. Since 1991, he has been a Professor of Electrical and Computer Engineering at the University of Delaware. In 2004, he was appointed as the Charles Black Evans Professor of Electrical Engineering, and in 2005 he was presented with the IBM Corporation Faculty Award. His research interests include fabricating and characterizing high frequency optical and electronic devices. Solar cells based on silicon germanium materials are being explored for their lower cost and compatibility with integrated circuit technology, and the influence of quantum dots to improve solar cell efficiency. Terahertz sources and detectors are being optimized for applications in imaging through solid objects, for the identification of materials, and for medical diagnostics and cancer research. Additional projects include alternative gate dielectrics for CMOS circuits, devices with interfaces between biological materials and semiconductors, spintronic devices, and the luminescence of silicon germanium quantum dots. Prof. Kolodzey has several patents and has co-authored over 150 technical publications.

PHOTOLUMINESCENCE OF SILICON GERMANIUM QUANTUM DOTS

For the past decade, silicon based optoelectronics has been promising for cost effective communications and for higher performance integrated circuits. The addition of germanium to silicon affects the energy bandgap, improves the electrical conduction mobility, and allows additional degrees of freedom during processing to produce interesting techniques for strain and phonon engineering. The path to silicon optoelectronics is still unclear, however, with different groups pursing concepts such as Raman lasers, and heterostructures by wafer bonding. Other groups continue to evaluate silicon based nanotechnology.

The self assembly of Ge nanostructures on Si substrates can produce quantum dots that vary from lens-shaped domes, to rectangular huts, to pointed pyramids, depending on growth conditions. Here we report on the fabrication of SiGe quantum dots using molecular beam epitaxy. The resulting dots had lateral sizes in the 10 nm range with surface densities above 1010 cm-2, and controllable size distributions and shapes. These dots produced photoluminescence below the bandgap of silicon, in the wavelength regime from 1.2 to 1.6 microns, up to room temperature. We will report on these finding in more detail and discuss implications for commercialization.

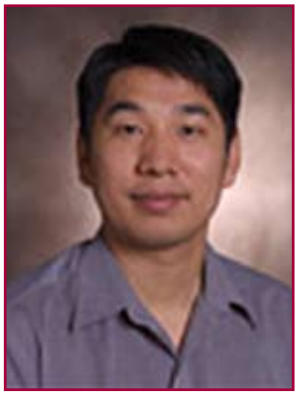
DR. S. TOM PICRAUX — SESSION I

CHIEF SCIENTIST
CENTER FOR INTEGRATED NANOTECHNOLOGIES
LOS ALAMOS NATIONAL LABORATORY

Dr. Tom Picraux received his B.S. in Electrical Engineering from the University of Missouri-Columbia and his Ph.D. in Engineering Science from the California Institute of Technology. He has been a Fulbright Fellow in Physics at Cambridge University and a visiting scientist at the Physics Department of Aarhus University. Tom is past Division Chair of the American Physical Society's Materials Physics Division, past President of the Materials Research Society, and is a Fellow of the American Physical Society, American Association for the Advancement of Science, and the Materials Research Society. He worked for many years at Sandia National Laboratories in Albuquerque as a researcher, a manager and as director of Physical and Chemical Sciences. He received the Department of Energy's prestigious E.O. Lawrence Award in 1990 for his research on materials and also the 2006 Missouri Honor Award from the University of Missouri. He has published more than 250 papers on materials and ion beam research, and for 9 years served as founding co-editor of the Journal of Nuclear Instruments and Methods Section B: Beam Interactions with Materials and Atoms. Tom joined Arizona State University in 2001 as executive director of materials research and professor. In 2005 he moved to Los Alamos National Laboratory where he is chief scientist for the Center for Integrated Nanotechnologies, a DOE Nanoscale Science Research Center jointly managed by Sandia and Los Alamos Labs. His current research interests focus on Si/Ge nanowires, and nanoscale self assembly, integration, and properties for electronic materials.

CENTER FOR INTEGRATED NANOTECHNOLOGIES (CINT) AND SEMICONDUCTING NANOWIRE

An overview of CINT, a DOE national user facility devoted to establishing the scientific principles that govern the design, performance, and integration of nanoscale materials, is given along with highlights from nanowire studies there.



HAO YAN

PROFESSOR
ARIZONA STATE UNIVERSITY

SESSION I

The research program of Dr. Hao Yan is highly interdisciplinary, combining chemistry, biology, physics and material science. Dr. Yan's goal is to achieve programmed design and assembly of biologically inspired nanomaterials and to explore its applications in nanoelectronics, controlled macromolecular interactions and biosensing. His research is focused in the following four themes:

1. BioNanotechnology: Design of novel DNA nanostructures, implementation of the designed structure in the construction of patterned DNA arrays and nanomechanical devices. Develop modular methods to achieve biomimetic molecular motors.

2. Nanoelectronics: Utilize rationally designed DNA nanostructure to template nanoelectronic components, such as nanoparticles or carbon nanotubes, into functional nanodevices.

3. Macromolecule structure elucidation: Develop methods to self-assemble 2D and 3D protein arrays for structural determination using electron microscopy or X-ray crystallography.

4. Biomolecular imaging: Investigation of protein-DNA interactions using high resolution imaging technology, such as atomic force microscopy and electron microscopy.

"DESIGNER DNA ARCHITECTURES FOR NANOBIOTECHNOLOGY"

Abstract: In recent years, structural DNA nanotechnology has fulfilled its promise for self-assembling both periodic and complex nanostructures (1,2). One of the original goals of this technology was to use self-assembled DNA nanostructures as designer scaffolds for directed molecular assembly. In this talk I will present our recent efforts in DNA directed self-assembly of protein and metallic nanoparticle nanoarrarys (3,4), as well as the use of self-assembling DNA nanoarrays for biosensing applications (5).

ROBERT EATON — CHAIR, SESSION II

PRESIDENT & CEO
ARIZONA BIOINDUSTRY ASSOCIATION

Robert Eaton is President & CEO of the Arizona BioIndustry Association, a not-for-profit trade association which provides a variety of services to its member companies throughout the state of Arizona. Prior to his current position, Mr. Eaton spent 10 years as President of MdBio, Inc., a bioscience industry support organization based in Frederick, Maryland. From 1988-1994, he held a variety of positions in the Science & Technology Division of the Pharmaceutical Manufacturers Association (now PhRMA) in Washington, DC, and was Director of Programs for the Suburban Maryland High Technology Council from 1994-1997.

Mr. Eaton holds a Master's degree in Science, Technology & Public Policy from George Washington University and a B.S. in Applied & Engineering Physics from Cornell University.

DR. LERWEN LIU — SESSION II

DIRECTOR OF NANOGLOBE PTE LTD, BUSINESS DEVELOPMENT MANAGER, ZYVEX ASIA, AND SECRETARY OF THE ASIA NANO FORUM (ANF, WWW.ASIA-NANO.ORG),

Dr Liu is an Asia-based nanotechnology expert specializing in government and corporate strategic services to policy makers and corporate executives. She also specializes in business development for leading nanotechnology companies in their global expansion particular in their Asia R & D and business. She has actively been building nanotechnology networks across the world, especially promoting nanotechnology policy and cooperation in the Asia region. She co-founded the Asia Nano Forum (network organization linking 14 Asia Pacific economies) and founded the NanoSingapore network.

Dr Liu has PhD in physics specializing in many-body effects and transports in semiconductor nanostructures, and has conducted research work in Australia, Japan, USA and Italy. She has been working in nanotechnology consulting business since 1999. She has extensive experience in consulting and networking in Nanotechnology worldwide and particularly in Asia specializing in science and technology information intelligence, regional/organizational competitiveness assessment, technology trends monitoring, event organization, database building, and regional network management. She built the first Nanotechnology Information Program at a Tokyo based US science & technology information company, providing exceptionally valued information services to the company's worldwide customers in industry and government bodies, focusing on the Nanotechnology policy, R&D activities and trends in industry and research centers across the Asia Pacific region. She is particularly active in promoting Nanotechnology policy and development in the Asia Pacific countries. She is currently the Executive Coordinator of the Asia Nano Forum (ANF) managing a high level network organization in the Asia Pacific Region supported by 13 economies including Australia, China, Hong Kong, India, Indonesia, Korea, Japan, Malaysia, New Zealand, Singapore, Taiwan, Thailand and Vietnam.

EXCITING OPPORTUNITIES FOR NANOTECH R & D & BUS. IN SINGAPORE

Singapore, located at the centre of Asia and is an ideal dynamic hub to converge advanced R & D and industry leaders, robust alliances, new technologies and world class infrastructure. In the field of nanotechnology, Singapore is equipped with state of the art facilities (one of the best in the world) for nanotechnology R & D and it has the unique open research environment for encouraging and attracting international collaboration and industry cooperation. Combining its efficient government administration and international business and financial environment, Singapore is becoming an attractive place for setting up leading R & D centres, research and development partnerships for research institutions and industries, and for locating company regional headquarters. Singapore government is aggressively promoting innovation and launched attractive funding schemes in help fostering SMEs and spin offs from research institutions. The Singapore Research, Innovation & Enterprise Council (RIEC) headed by the Prime Minister launched an aggressive increase of R & D budget for the period of 2006-2010 to 12 Billion SGD (7.9BUSD), a 240% increase from the previous period (R & D Spending to account for 3% of GDP by 2010). Singapore is not only a melting point of diverse cultures but most importantly a place for exciting converging technologies, global partnerships and creates growth nanotech industries.

In this talk we give an overview on the Singapore core facilities for nanotechnology R & D, industry collaboration schemes and status of industry development. We highlight on the opportunities for international alliances, R & D and business partnerships. We will also provide a broad nanotech landscape across the Asia region and make recommendations in strategically connecting to the Asia Nanospace to accelerate global nanotechnology development.

ALAIN CHARLES DIEBOLD — SESSION II

THE COLLEGE OF NANOSCALE SCIENCE AND ENGINEERING
THE UNIVERSITY AT ALBANY—SUNY

Dr. Alain Diebold is an Empire Innovation Professor of Nanoscale Science at the College of Nanoscale Science and Engineering (CNSE) of the University at Albany, as well as the Executive Director of CNSE's Center for Nanoscale Metrology. His research focuses on the impact of nanoscale dimensions on the physical properties of materials; he also continues to work in the area of nanoelectronics metrology. He is a member of the International Metrology Technical Working Group, founder and co-chair of the U.S. Metrology Technical Working Group for the 2008 International Technology Roadmap for Semiconductors, and chair of the Manufacturing Science and Technology Group of the American Vacuum Society. Previously, Dr. Diebold was a SEMATECH Senior Fellow, with the main focus of his activities involving metrology industry coordination. He has edited the Handbook of Silicon Semiconductor Metrology, published in June 2001; is a panel member for the Metrology section of Future Fab International; and, he has co-edited three books that are conference proceedings from Characterization and Metrology for ULSI Technology and its predecessor conference. He also worked at Allied Signal in the areas of molecular beam epitaxy of III-V compounds and materials characterization of a broad range of semiconductor and amorphous metal products.

NICOLAS LETTERIER

SESSION II

MINALOGIC
MICROCHIP CLUSTER IN GRENOBLE

Nicolas Leterrier has been the Chief Representative of Minalogic since 2006. The global competitive cluster (Pole de compétitivité) located in Grenoble, France is actively working in the field of micro-nano technologies as well as embedded software to build collaborative projects between actors from industry, universities and public research.

Among his positions prior to Minalogic, Nicolas worked, for 14 years for STMicroelectronics, notably as software development director for an advanced multimedia product line called Nomadik architecture that involved software platform development and teams in India and China. He was also tasked with establishing strategic partnerships with major mobile phone providers.

OVERVIEW OF MINALOGIC PARTENAIRES

For its more than 100 members (companies and institutional partners), global international competitiveness cluster Minalogic fosters research-led innovation in intelligent miniaturized products and solutions for industry. Located in Grenoble, France, the cluster channels in a single physical location a range of highly-specialized skills and resources from knowledge creation to the development and production of intelligent miniaturized services for industry.

Minalogic has staked out a position as global leader in intelligent miniaturized solutions—a unique hybrid of micro- and nano-technologies and embedded software—from fundamental research to technology transfer. The technologies developed at the cluster are applicable to all business sectors, including more traditional industries. The role of Minalogic is to respond to the business community's need to identify new value-added services that can be integrated into existing products in fields that include health care, the environment, mobility, the media/communications, and other more traditional industries.

STEVEN G. ZYLSTRA — CHAIR, SESSION III

PRESIDENT & CEO
ARIZONA TECHNOLOGY COUNCIL

Steven G. Zylstra was appointed the president and CEO of the Arizona Technology Council in December of 2007. In this role, Zylstra is responsible for policy, development, approval and accomplishment of business goals, objectives, and all financial matters related to the Council.

From 2000 to 2007, Zylstra served as president and CEO of both Catalyst Connection and the Pittsburgh Technology Council. He concurrently served as president and CEO of the Pennsylvania NanoMaterials Commercialization Center and the Doyle Center for Manufacturing Technology, both tech-based economic development-focused organizations. Additionally, Zylstra was president of the Pittsburgh Biomedical Development Corporation, an affiliated organization of the Pittsburgh Technology Council that invests in start-up biomedical and biotechnology companies.

Prior to arriving in Pittsburgh, Zylstra was the director of business development for Simula Technologies, Inc., of Phoenix, Arizona, since 1995. Simula specialized in the research, development, testing and manufacturing of high-technology transportation seating and safety systems, advanced polymers, composite technologies and ballistic armor systems.

After earning a bachelor's degree in automotive engineering from Western Michigan University, Zylstra was employed as a design engineer for the Ford Motor Company in Dearborn, Michigan, as a design engineer for the Ford Aerospace & Communications Corporation in Newport Beach, California, and as a senior design engineer and technical manager for Bendix Guidance Systems.

From 1984 to 1995, Zylstra served as general manager of General Pneumatics Corporation, Western Research Center (WRC), in Scottsdale, Arizona. During his tenure at WRC, the company was awarded 19 Small Business Innovative Research programs.

While in Arizona, he was a co-founder and member of the Governor's Arizona Science and Technology Council, as well as a co-founder and past chairman of the Arizona Innovation Network. Zylstra also was a member of the Governor's Arizona Partnership for the New Economy, and he served as director of the Executive Committee of the Arizona Technology Incubator. He also served as chairman of the Governor's Strategic Partnership for Economic Development, High Technology Industry Cluster. He was a past director of the Arizona Technology Development Authority, and he was a member of the Governor's Council for Workforce Development Policy. Zylstra also served as past chairman of the industry advisory council of Arizona State University's Corporate Leaders Program, as well as director of the Arizona State University Research Park, among other activities.

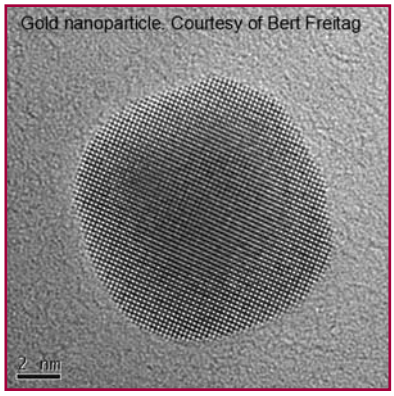
Zylstra currently is a member of the Council on Competitiveness, and he serves on the board of directors of Tempe, Arizona-based Scientific Monitoring, Inc. He also is a member of the industrial advisory committee at the University of Arizona College of Engineering and Mines.

DR. DEBBIE STOKES

FEI COMPANY

SESSION III

Debbie Stokes obtained her PhD in physics at the Cavendish Laboratory, Cambridge University in 1999 and went on to become a Royal Society Research Fellow & Senior Research Fellow of Newnham College, Cambridge. She worked on secondary electron emission from organic and aqueous materials, and image interpretation due to transient charge-related phenomena in the environmental SEM (ESEM). Debbie then worked on new applications and methodologies for focused ion beam scanning electron microscopy (FIB SEM), particularly for electrically insulating specimens. She continues to be a long-term academic visitor at Cambridge University, having taken up a permanent position with FEI Company in the Netherlands in 2006. Since 2005, Debbie has served as RMS Honorary Secretary (Physical Sciences) and is co-Chair of MICROSCIENCE 2008.



THE IMPORTANCE AND RELEVANCE OF ADVANCED ELECTRON MICROSCOPY IN NANOTECHNOLOGY

Advanced electron microscopy, using the latest aberration-corrected and monochromated (scanning) transmission electron microscopes (S/TEM), is helping to bring new scientific and technological insights that are advancing progress in nanotechnology, affecting areas such as health, energy and the environment.

For example, with global energy resources under increasing pressure, great efforts are being made to develop new nanomaterials that will lead to renewable energy sources and increased efficiency, to sustain energy supplies into the long term future whilst helping to preserve and protect the Earth's environment. To get there, we are being taken into the realms of atomic interfaces and quantum wells such that, to tailor new nanomaterials for specific functions, there is an essential requirement to precisely understand, accurately control and truly visualize structure-property relations at an unprecedented level. The atomic structure of nanomaterials and the energy needed for their function can be optimized by the fundamental understanding of catalytic behavior of nanoparticles and by a better understanding of the physical properties on the atomic level of solar cells, fuel cells and light sources (LEDs). This requires advanced tools that allow us to see down to the individual atoms and sense their chemical environment. It means having the ability to perform experiments *in situ*, to follow specific chemical reactions and physical processes, and there is a need to be able to do these things in multi-dimensions, spatial and temporal.

PETER MASCHER SESSION III

PROFESSOR AND WILLIAM SINCLAIR CHAIR IN OPTOELECTRONICS
ASSOCIATE DEAN (RESEARCH AND EXTERNAL RELATIONS)
FACULTY OF ENGINEERING
MCMASTER UNIVERSITY, HAMILTON, ONTARIO, CANADA

Peter Mascher obtained a PhD in Engineering Physics from the Graz University of Technology (TUG) in Austria and spent about four years as a post-doctoral fellow and research associate at the University of Winnipeg. He joined McMaster University in 1989 in a position initially funded by the Ontario Centre for Materials Research. He is a professional engineer and a professor in the Department of Engineering Physics, was Chair of the Department from 1995 to 2001, and currently serves as the Associate Dean (Research and External Relations) of the Faculty of Engineering.

Dr. Mascher leads active research groups involved in the fabrication and characterization of thin films for optoelectronic applications, the development and application of silicon-based nanostructures, and the characterization of defects in solids by positron annihilation spectroscopy. His research work is funded by NSERC and several federal and provincial Centres of Excellence, as well as industry. He has graduated more than 30 PhD and Master's students, has authored or co-authored more than 170 publications in refereed journals and conference proceedings, and has presented many invited lectures at international conferences and workshops.

Dr. Mascher is a member of McMaster's Brockhouse Institute for Materials Research and the Centre for Emerging Device Technologies, as well as a number of international physics and materials research societies. In 2001, he was appointed as the inaugural holder of the William Sinclair Chair in Optoelectronics, a Chair that was established through a generous donation by William Sinclair, one of the co-founders of JDS-Fitel, now part of JDS-Uniphase. Since 2003, he has been the Program Director of the Ontario Photonics Consortium, a McMaster-led multi-university initiative co-funded by the Ontario Research and Development Challenge Fund and industrial partners. In 2006, he was appointed as a member of the Advisory Group on Nanotechnology of the Ontario Ministry of Research and Innovation.

NANOSCIENCE AND NANOTECHNOLOGY AT MCMASTER A MODEL FOR AN INTERDISCIPLINARY APPROACH

McMaster University's Initiative for Nano Innovation (MINI) provides a unified organizational structure linking researchers with an interest in nanoscience, including those in the Brockhouse Institute for Materials Research (BIMR), the Centre for Emerging Device Technologies (CEDT) and the Micro- and Nanosystems Laboratory (MNSL). MINI ensures that researchers have access to the interdisciplinary knowledge, expertise, and facilities necessary for nanoscale research. It also enhances McMaster's ability to reach out to partners in academia and industry, and the general public.

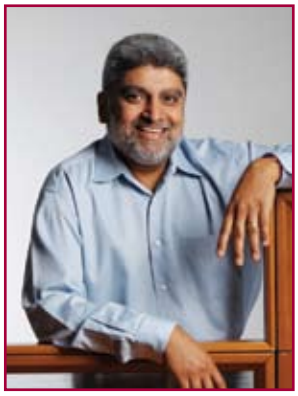
NARBEH DERHACOBIAN — SESSION III

PRESIDENT AND CEO
ADESTO TECHNOLOGIES

Narbeh Derhacobian is President and CEO of Adesto Technologies, a venture-backed Silicon-Valley startup focusing on development of next generation low power and high performance memory solutions. He has over 15 years of industry experience working on discrete and embedded memory technologies. He has held technical and managerial roles at SST, AMD, Virage Logic and Cswitch Corporations. Narbeh's industrial experiences cover commercialization of advanced embedded SRAM, split-gate NOR flash, ETOX NOR and NAND flash as well as SONOS based NOR flash technologies. Narbeh has a PhD in Solid State Physics from UCLA, and an MBA from San Jose State University.

"CHALLENGES OF COMMERCIALIZING A NANOTECHNOLOGY INTO COMMODITY MEMORY MARKETS"

Semiconductor memory markets present a lucrative opportunity for commercializing newly developed nanotechnologies. Innovators often develop technologies that show intriguing memory effects. However, to move such a technology from the "lab" to the "fab" and then to the market place requires considerations that span a wide range of issues. This brief presentation will focus on the challenges involved in commercializing innovative technologies into the memory markets.



PAPU MANIAR, SESSION III

CORPORATE RESEARCH LABS, MOTOROLA

Papu Maniar holds senior leadership position within Motorola's Corporate Technology Organization.

Papu leads the Advanced Materials & Nanotechnology Organization, focused on investigating micro- and nano- scale materials, processes, and characterization technologies, within Motorola's Physical and Digital Realization Research Laboratory.

He more than 25 issued patents and at least 25 publications.

Papu has a Ph.D. in Geology from the University of Pittsburgh and was a Postdoctoral Fellow at Princeton University in Experimental Thermodynamics.

Contact Papu Maniar by email at Papu.Maniar@motorola.com

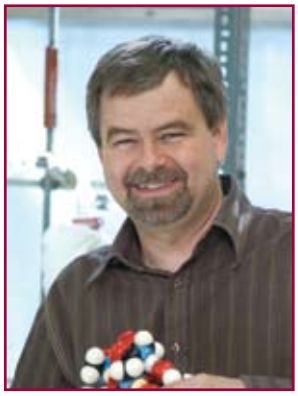
IMPACT OF NANOTECHNOLOGY ON MOBILE HEALTH SYSTEMS

Current health system will continue to evolve towards "Mobile Health Ecosystem" wherein traditional practices are extended through mobile communication devices and secure, seamless networks. This trend is most apparent in United States and Europe. As an example, integrated wireless personal sensor networks will monitor vital signs and other physiological metrics and transfer data to a provider through a gateway device such as a mobile phone or a set top box. This health data combined with the consumers medical history will provide real-time communications, advice for preventive care, early warning of severe illnesses, and expert-guided patient-activated actions. Nanotechnology will be critical for mobile health monitoring by enabling wearable sensors with novel functionalities and higher sensitivity capable of conveniently and unobtrusively integrating into accessories and clothing. The benefits will be time- and cost- effective health system meeting the desires of the boomer population to maintain their active, mobile lifestyle and the aging population's desire for less burdensome practices.

JOHN HEROLD — CHAIR, SESSION IV

RAYTHEON

John has more than 32 years of experience as a mechanical engineer in the defense industry with the family of companies that are now Raytheon. Sixteen of those years were dedicated to the Phalanx Close-In Weapon System (CIWS) and eight to Standard Missile in the areas of airframe and hardware design, analysis, development, engineering support-to-production and program management. His current position is Deputy Department Manager of Materials Engineering, where he is responsible for material development, characterization and analysis of all material systems in products delivered by Raytheon's Missile Systems Division. Other recent roles include Technology Area Director of Materials & Structures for Raytheon Corporate Engineering's Technology Leadership Council and Department Manager for Naval Weapon Systems Mechanical Design. John has a Bachelor's degree in Mechanical Engineering from Drexel University (Philadelphia, PA) and a Master's in Mechanical Engineering from Rensselaer Polytechnic Institute (Troy, NY). John resides in Tucson along with his wife and two children.



NORMAND VOYER

PROFESSOR OF CHEMISTRY,
DIRECTOR OF NANO4LAVAL

SESSION IV

Normand Voyer was born in 1959 in St-Eustache, Quebec. He graduated from Université Laval with a B. Sc. in Chemistry in 1981 and did his graduate studies at Laval under the direction of Professor Robert Chênevert, where he obtained his Ph.D. in 1985 for his thesis work on the synthesis and uses of chiral crown ethers and cyclodextrins. In August 1985, he joined Dr. Donald J. Cram's (1987 Nobel Laureate) group at UCLA, where he worked as a Postdoctoral Scholar on the synthesis of water soluble spherands. He moved to the Central Research Department of E. I. DuPont De Nemours & Co. (Wilmington, DE, USA) in January 1987, where he was a Visiting Scientist in Dr. William F. DeGrado's laboratory. His research there involved the synthesis and the characterization of de novo designed peptides. In August 1988, he accepted an Assistant Professor appointment at the Université de Sherbrooke and was promoted to Associate Professor there in 1993. In 1996 he returned to Laval University, where he became a Full Professor in 1999. He is currently the Chairman of the Department of Chemistry and the Director of the CREFSIP, the Quebec Research Network on the Function, Structure, and Engineering of Proteins, a multidisciplinary research centre.

He was also a main participant in the development of three science exhibits for teenagers with the Musée des Sciences de Sherbrooke. On the research side, Professor Voyer's efforts are focussed in bioorganic and supramolecular chemistry. His current research projects concern the development of functional peptide and protein nanostructures as antimicrobials with new modes of action, artificial ion channels, and molecular sensors, as well as the discovery of novel bioactive compounds through conventional and solid-phase approaches. He has published several well-cited scientific articles in prestigious journals and presented more than 70 invited lectures at many different meetings and institutions. He received in 1993 the Fondation de l'Université de Sherbrooke Young Investigator Award for the quality of his research and the Association Générale des Etudiants en Science 1995 Merit Award for Excellence in Teaching. In 1999, he was named Fellow of the Chemical Institute of Canada.

Beside science, this father of five enjoys family activities and, during his spare time (?!), does adventurous rock-collecting trips.

STRUCTURING NANOTECHNOLOGY RESEARCH ACTIVITIES IN QUEBEC

Substantial investments have been made to support research in nanotechnology and nanosciences. Competing at the international level in those areas requires not only money, but also easy access for scientists to numerous and increasingly expensive instruments. We will present the approach NanoQuebec has taken to support state-of-the-art research programs in nanosciences and to structure strategically future investments.

DR STEFFI FRIEDRICHS — SESSION IV

DIRECTOR
UK NANOTECHNOLOGY INDUSTRIES ASSOCIATION (NIA)

Dr Steffi Friedrichs is the Director of the UK Nanotechnology Industries Association (NIA), an industry-led trade organisation that creates a clear single voice to represent the diverse industries' views in the multi-stakeholder debate on nanotechnology.

Steffi's professional background includes Lectureships in Chemistry and Nanotechnology at Oxford and Cambridge University. During a subsequent appointment in industry, she gained substantial expertise in the research, development and commercialisation of emerging technologies, and in the public engagement on nanotechnologies.

RESPONSIBLE NANO CODE – A TIMELY INITIATIVE IN SUPPORT OF THE ADVANCEMENT OF RESPONSIBLE NANOTECHNOLOGIES

Like any other emerging technology, the development of nanotechnologies gives rise to a variety of social and ethical issues – both in relation to their governance and the impact of specific applications. In particular, there is some uncertainty surrounding the potential environmental, health and safety risks of some nanoscale materials. In the absence of concrete scientific evidence about the true risks of nanotechnologies, businesses with an interest in this area will need strategies for dealing with these uncertainties.

In June 2007, a multi-stakeholder group, involving representatives from companies, industries associations, private technology funding organizations, consumer groups, independent scientific and policy advisors, NGOs and Trade Unions, commenced the development of a voluntary Code of Conduct for organisations involved in the research, development, manufacture, commercialisation, trade, use and disposal of nanotechnology-enabled products, now known as the "Responsible NanoCode". The draft version of the Code was subjected to a global public consultation process; consultation feedback was implemented at the beginning of 2008, and it is anticipated that the Code will be launched in the summer of 2008.

This presentation highlights the drivers that led to the development of the Responsible NanoCode, describes the Code development process, as well as its main format and content.

PROFESSOR G.Q. MAX LU SESSION IV

FEDERATION FELLOW AND DIRECTOR
AUSTRALIAN RESEARCH COUNCIL CENTRE OF EXCELLENCE
FOR FUNCTIONAL NANOMATERIALS, THE UNIVERSITY OF
QUEENSLAND, BRISBANE, QLD 4072, AUSTRALIA

Max Lu is a Federation Fellow and Professor of Nanotechnology in Chemical Engineering at the University of Queensland. He is Director, ARC Centre of Excellence for Functional Nanomaterials. His research expertise is in nanoparticles and nanoporous materials for clean energy and water purification technologies. With over 260 journal publications to his credits, he is also co-inventor of 12 international patents. Prof Lu is a highly cited researcher in chemical engineering and materials science with over 3500 citations (with h-index of 31). He has received numerous prestigious awards nationally and internationally including the Orica Award, RK Murphy Medal, Le Fevre Prize, ExxonMobil Award, IUMRS Young Scientist Award, Top 100 Most Influential Engineers in Australia (2004). Top 50 Most Inspiring Chinese in the World (2006). He is elected Fellow of the Australian Academy of Technological Sciences and Engineering, and of IChemE. He served on the ARC's College of Experts (2002-2004), and Expert Advisory Groups of the Prime Minister's Science, Engineering and Innovation Council (2004, 2005). He also served as Chairman for the Department of Education, Science and Training Research Quality Framework Panel on Engineering and Technology.

FUNCTIONAL NANOMATERIALS RESEARCH AND DEVELOPMENT: AN AUSTRALIAN PERSPECTIVE

Australia is a medium-sized economy which enjoys the continuing economical growth and good international relations with the USA, Europe and the Asia Pacific Region. Australia is among the early developers of nanotechnology with strong research and development effort in quantum computing, nanomaterials, nanobiotechnology and energy and environmental nanotechnology. Australia federation government investment in nanotechnology research amounts to $100 million per annum and there are approximately 80 nanotech startup companies in Australia. The key states which invest heavily in nanotechnology include Queensland and Victoria.

This talk will provide an overview of the key R&D activities in Australia, particularly relating to functional nanomaterials such as materials for clean energy, environmental cleaning up, biomedical devices and drug delivery. Particularly examples from the research being conducted at the ARC Centre of Excellence for Functional Nanomaterials include: nanocomposite electrodes for fuel cells, hydrogen purification membranes and hydrogen storage materials, novel visible light photocatalysts for water purification and solar cells.

ANDREW ASKLAND — CHAIR, PANEL

DIRECTOR
THE CENTER FOR THE STUDY OF LAW, SCIENCE, AND TECHNOLOGY
THE SANDRA DAY O'CONNOR COLLEGE OF LAW
ARIZONA STATE UNIVERSITY,

Andrew Askland is the Director of the Center for the Study of Law, Science, and Technology at the Sandra Day O'Connor College of Law, Arizona State University, where he teaches Privacy and Economics and the Law. He earned his M.A. and Ph.D. in philosophy at the University of Colorado at Boulder and his J.D. at the University of Maryland at Baltimore. He also holds an A.B in philosophy from Holy Cross College and a B.S. in economics from the University of Maryland. (sandy.askland@asu.edu)

BRETT JOHNSON — PANEL, MODERATOR

ASSOCIATE
SNELL & WILMER L.L.P.

Mr. Johnson's practice is concentrated in litigation and health care services.

EDUCATION

- University of Maryland, University College (Masters, Int'l Management, 2006)
- United States Naval War College (Completed Program in Strategic Studies, 2004)
- The Hague Academy of International Law, the Peace Palace, The Netherlands, Summer 2003
- University of San Diego School of Law (Masters of Law, International Law, 2001)
- Santa Clara University School of Law (J.D., 1999)
  Graduate Resident Director
  1999 Honors Moot Court Board, Director
  SBA Representative
  University Discipline Council, Chair
  Phi Delta Phi Honors Fraternity, Secretary
- Santa Clara University (B.S., Political Science, Minor, English, 1996)
  Resident Assistant
  Sophomore Class Senator
  Freshman Class President

COURT ADMISSIONS

Supreme Court of Arizona
Supreme Court of California
District of Columbia Court of Appeals
Court of Military Appeals for the Armed Forces
United States Navy and Marine Corps Court of Appeals

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

State Bar of Arizona
Maricopa County Bar Association
American Bar Association

MILITARY

U.S. Navy, Judge Advocate General's Corps Headquarters, Washington, D.C. (2004-2006)
Naval Legal Service Office, Europe and Southwest Asia, Rota, Spain (2002-2004)
Commander, Navy Region Southwest, San Diego, CA (1999-2002)

PUBLICATIONS

"The Future Constitutional Battle If The United States Ratifies The International Criminal Court Treaty," Chicago-Kent Journal of International and Comparative Law (Vol. 3, Spring 2003).

JEFF SCUDDER

ASSOCIATE
SNELL & WILMER L.L.P.

Mr. Scudder's practice is concentrated in business and finance, mergers and acquisitions, corporate governance, securities law, SEC reporting, public and private offerings and general contracting.

EDUCATION

The University of Iowa College of Law (J.D., with distinction, 2006)
College of Law Nominee, University of Iowa's Hancher-Finkbine Medallion
Iowa Governor's Volunteer Award
Iowa Student Bar Association
Class Agent, Iowa Law School Foundation
Editorial Board, IOWA LAW REVIEW
Note, After Rants v. Vilsack: An Update on Item Veto Law in Iowa and Elsewhere, 91 IOWA L. REV. 373 (2005)
College of Law Merit Scholar
Semifinalist, Baskerville Moot Court Competition, Moot Court
The University of Northern Iowa (B.A., Finance and Economics, summa cum laude, 2003)
Presidential Scholar
President of the Student Body
Recipient of "Purple and Old Gold Award" as most outstanding graduate in finance
Honor Societies: Omicron Delta Kappa, Beta Gamma Sigma, Phi Eta Sigma

PERSONAL

Born Mason City, Iowa
Court Admissions
Supreme Court of Arizona|
Professional Memberships And Activities
State Bar of Arizona
American Bar Association
Maricopa County Bar Association
Other Professional Experience
Summer Associate, Stinson Morrison Hecker LLP (2005)

COMMUNITY INVOLVEMENT

Lincoln Family Downtown YMCA, Board of Management (2008-Present)
Paradise Valley United Methodist Church

JOHN P. WASZCZAK, PHD — PANELIST

RAYTHEON MISSILE SYSTEMS
DIRECTOR ADVANCED TECHNOLOGIES & SBIR/ STTR
ADVANCED PROGRAMS

Dr. John P. Waszczak is the Director of Advanced Technology and SBIR/ STTR for Raytheon Missile Systems (RMS) in Tucson Arizona. RMS designs, manufactures & services tactical weapon systems for the U.S. and allied governments.

Dr. Waszczak also serves as the SBIR IPT Lead for the Raytheon Company. John has participated as an invited speaker and panelist at numerous national, state and local SBIR conferences, to include the recent congressionally mandated, National Academies' study to identify ways to improve the effectiveness of the government's SBIR Program.

Dr. Waszczak's previous assignments include Director of Material Operations, Deputy Managing Director Hughes UK Ltd., Director Tomahawk Cruise Missile Production Programs, Director Division Planning and Manager Energy Systems. John served as Special Assistant to the U.S. Department of Transportation's, Assistant Secretary for Policy and International Affairs, while a member of the President's Executive Exchange Program during the Carter Administration.

Dr. Waszczak was a recipient of the Hughes Electronics Malcolm R. Currie Innovation Award in 1996 and the Raytheon Leadership Award for Supplier Diversity in 2006. John is an alumnus of Carnegie-Mellon University where he obtained his BS, MS & PhD degrees in Mechanical Engineering with a minor in Economics.

RAY FRIESENHAHN — PANELIST

SBIR AND TECHNOLOGY TRANSITION MANAGER
TECHLINK

Ray Friesenhahn is the SBIR and Technology Transition Manager for TechLink, a Defense-wide Partnership Intermediary, under the auspices of OSD's Office of Technology Transition (DUSD(AS&C)). In this position, he serves effectively as a "Technology Scout" for the Department of Defense, leveraging DoD SBIR and other programs to assist client companies in developing and transitioning innovative technologies to support the Warfighter. Under Ray's guidance, TechLink's DoD SBIR assistance programs now cover 12 states, utilizing expert team support with a focus on rapid transition/commercialization of new technologies, and promoting strategic partnerships with Prime Contractors and DoD laboratories. His program successes recently resulted in a national Tibbetts Award for Outstanding Individual Achievement in support of the SBIR program.

Ray's twenty-plus years of experience includes ten years of Defense industry RD&E in HPM weapon systems and radar components, including development and production of the advanced high-power TWT that enabled the upgraded Patriot Missile System radar. He provided Technology Transfer support for NASA for several years, and has been involved in private sector start-ups. Ray has a B.S. in Physics and an MBA (entrepreneurship & marketing) from UT Austin, with graduate studies at Penn State, where he was appointed Lecturer in Physics.

JOHN L. LOMBARDI, PH.D. — PANELIST

HEAD AND FOUNDER
VENTANA RESEARCH

John Lombardi obtained a Bachelor of Science in Chemistry from Worcester Polytechnic Insititute (Worcester, MA) in 1990. Following college he worked in the advanced organic abrasives research and development group at Norton Company prior to pursuing graduate studies in Materials Science & Engineering at the University of Arizona (Tucson, AZ). His M.S. thesis work centered upon biomimetic processing of polymer composite materials while his doctoral research focused upon developing novel polymer and ceramic composite materials employed in rapid prototyping applications. He maintained a successful materials and process consulting practice during graduate school; servicing a wide range of clients including Speedfam, & Advanced Ceramics Research, Inc (ACR). In 1996 through 2002 he was employed by ACR as a senior research scientist and was responsible for developing several multimillion dollar revenue advanced material and rapid prototyping consumable products for the organization. A signficant portion of his research was funded while serving as a Principal Investigatoron several NSF & DoD sponsored Phase I & II SBIR Contracts. He was a twice recipient of the R &D 100 Award for inventions relating to novel water soluble polymer blends and products derived thereof. In 2002 he started Ventana Research Corporation (South Tucson, AZ), which has evolved into a multimillion dollar defense R &D contracting firm maintaining active efforts in developing novel photocatalytic antimicrobial materials as well as consumable polishing materials for the electronics industry. He holds over 20 foreign and domestic patents in a variety of applied chemistry and materials processing areas.

DR. MATT KIM — PANELIST

CEO, QUANTTERA
CHAIRMAN, ARIZONA NANOTECHNOLOGY CLUSTER

Dr. Matt Kim holds a Ph.D. in Physics from the University of Illinois in Urbana-Champaign and B.S. in Engineering Physics from Cornell University.

Dr. Kim is the Founder and President of QuantTera. QuantTera specializes in developing quantum based devices for photonic applications. Our focus is to develop manufacturable lasers, detectors, driver amplifiers and opto-electronic integrated circuits.

Dr. Kim is chairman of the board of the Arizona Nanotechnology Cluster a non-profit organization for advancing nanotechnology issues in the Phoenix area. In 2006 he received the Chairman's Award at the Governor's Celebration of Innovation in Phoenix for his contributions to Arizona's High Tech Industry.

In 2000 Dr. Kim co-founded MicroLink Devices, Inc., a leading manufacturer of transistors for cellular communications in Niles, IL. At MicroLink he was Vice President of Operations and supervised the transistor manufacturing program which ultimately resulted in vendor qualification at major telecommunication companies.

From 1994 to 2000, Dr. Kim served as Principal staff scientist at Motorola's corporate research laboratory. He demonstrated transistors with very high gain, which were used in Motorola cell phone technology. From 1989 to 1994, Dr. Kim was a senior scientist at Bandgap Technology Corporation where he was in charge of the characterization of transistors and lasers for telecommunication applications.

GRANT ANDERSON — PANELIST

VICE PRESIDENT OF ENGINEERING, CO-FOUNDER
PARAGON SPACE DEVELOPMENT CORP.

A founder of Paragon, Mr. Anderson has 22 years experience designing power, thermal and life support systems for human rated spacecraft. He is presently the Program Manager for the Paragon Lockheed Martin Orion program. He and his team are responsible for interface control and vehicle schematics, as well as specific design responsibility for the service module radiators and overall spacecraft ECLSS tubing. For the last 7 years, Mr. Anderson has lead the Thermal Control System and Environmental Control and Life Support System design for every human rated spacecraft program undertaken by Lockheed Martin. He is currently the Principal Investigator for Diver Breathing and Isolations Systems that allow Navy divers to work in contaminated water. This new diving technology is currently undergoing full up dive testing.

He is the PI for the development of a structurally integral CEV service module radiator technology, as well as single loop thermal control system fluids. The fluids are presently being tested in Paragon's lab. Previous experience includes being Project Design Lead and Cost Account Manager for the ISS Solar Array Program at Lockheed Martin, the largest solar arrays ever built; Cabin design and build of the first CEV mockup, now on display at Johnson Space Center; Engineering lead for experimental flight hardware on five shuttle flights, two Mir missions, a Russian Progress, and the first commercial payload on ISS; he also lead the engineering on a flight qualified Micro-gravity Cell Culture System.

As Project Manager, he was in charge of setting up and staffing the Operations Department of Cargolifter, a large German airship development, which included crew training and simulation, cockpit design, operational scenario and mission rule development. Mr. Anderson holds two degrees from Stanford University in Mechanical Engineering (BS) and Aeronautical and Astronautical Engineering (MS) and is a registered Professional Engineer.

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Snell & Wilmer's Business and Finance Group has substantial experience in all areas of business and finance law, including: public and private securities offerings, venture capital financings, mergers and acquisitions, project financing, and public financing, as well as securities regulation, franchising, corporate organization, maintenance and governance, and government contracting. The Business and Finance Group serves clients ranging in size from *Fortune 100* companies to smaller emerging businesses in virtually every aspect of business law, and as general or special counsel to a substantial number of clients, private and public, large and small, in specific areas on a transactional basis.

For more information, please visit our web site at www.swlaw.com, or contact the following attorneys:

Cynthia Pillote, Partner
602.382.6296
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J. Damon Ashcraft, Associate
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Canada

In 2004 the Government of Canada opened seven new Consulates in the United States including one in Arizona. With offices in both Phoenix and Tucson, there are four Canadian trade commissioners promoting closer trade, commerce, investment and Science & Innovation partnerships between Canadian governments, institutions, agencies and private sector firms, and their counterparts in Arizona. Reporting to the Canadian Embassy in Washington, the Consulate represents Canada and the Canadian business community throughout Arizona and New Mexico.

To assist you with your questions about Canada, please contact:

Dawn Nagle, Trade Commissioner, Nanotechnologies,

Tel: 602-508-3573, dawn.nagle@international.gc.ca

Canada will be host to the 2009 "Nano & Giga Challenges in Electronics, Photonics and Renewable Energy Symposium" in conjunction with the "14th Canadian Semiconductor Technology Conference". For more information on this event hosted by McMaster University, Hamilton, Ontario: please visit our website: http://asdn.net/ngc2009 or contact organizers@asdn.net:

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Joshua Ekstrom
Home School

HIGH SCHOOL

Matthew Irwin
Coronado

COLLEGE

Danny Pupillo
Scottsdale Community College

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