

The Institute for Innovation & Entrepreneurship at UT Dallas was established in April 2006 as a collaborative initiative of the schools of Arts and Humanities; Behavioral and Brain Sciences; Economic, Political and Policy Sciences; Engineering and Computer Science; Management; and Natural Sciences and Mathematics. The Institute's role is that of a facilitator, catalyst and program sponsor – *leveraging the power of ideas and technology to create new ventures and add economic, social and cultural value to our community.*

Nanomedicine: Enterprise and Society

Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers (1 nanometer = 1 billionth of a meter). Nanomedicine is the application of nanotechnology to medicine and is occurring primarily on two fronts, the use of synthetic nanoparticles in the treatment and diagnosis of disease, and the use of new nanoscale instrumentation and manufacturing methods.

Few nanomedicine applications have reached the clinic, but many are in development and will have a large impact in the next decade and beyond. As nanomedicine is reduced to practice, it will affect many sectors of medicine, from diagnosis and treatment to the business of health care and its complex underlying support structures. Nanomedicine also raises ethical and environmental issues. The symposium "Nanomedicine: Enterprise and Society" is a forum to inform the North Texas business and educational communities about nanomedicine and to promote the development of the nanomedicine enterprise in North Texas.

The BioNanosciences Group at The University of Texas at Dallas (UTD) was formed in 2002 and includes faculty, staff, and students from the biological, chemical, physical, and engineering disciplines. Core UTD faculty include Dr. Gregg Dieckmann, Dr. Rockford Draper, Dr. Inga Musselman, Dr. Steve Nielsen, Dr. Paul Pantano, and Dr. Jie Zheng. The Group is engaged in active collaboration with doctors and scientists from the UT Southwestern Medical School and other colleagues from around the world, and has formed active partnerships with local companies interested in bionanotechnology. Research produced by the UTD faculty group and its collaborative partners has resulted in highly cited papers and attracted research support in excess of \$3 million.

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Nanomedicine: Enterprise and Society

Program Agenda

Friday, January 22nd, 2010

7:30 a.m. to 5:00 p.m.

- 7:30-8:15 **Registration/Breakfast**
- 8:15-8:25 **Introduction/Welcome** Dr. Joseph Picken, UTD
- 8:25-8:45 **Overview: Nanotechnology & Medicine** Dr. Inga Musselman, UTD
- 8:45-9:45 **Applications: Imaging and Nanomedicine**
Dr. Dean Sherry, UTD/UTSW
Dr. Jie Zheng, UTD
- 9:45-10:00 **Break**
- 10:00-11:00 **Applications: Targeted Therapies** Dr. Rockford Draper, UTD
Dr. Mark Banaszak Holl,
U of Michigan
- 11:00-11:30 **Ethics and Nanomedicine** Dr. Fabrice Jotterand, UTSW
- 11:30-12:15 **Lunch**
- 12:15-1:30 **Keynote Presentation: Prospects for Nanomedicine**
Dr. James Baker, U of Michigan
- 1:30-2:15 **The Business of Nanomedicine** Dr. Rob Burgess,
Medical Nanotechnologies, Inc.
Dr. Gareth Hughes,
Lynntech, Inc.
Dr. John St. John, ULURU, Inc.
- 2:15-2:30 **Break**
- 2:30-3:00 **Panel: How Can North Texas Become a National Leader in Nanomedicine?**
Dr. Rob Burgess
Dr. Gareth Hughes
Dr. John St. John
Dr. James Baker
Dr. Mark Banaszak Holl
- 3:00-3:30 **UTD Faculty: Introduction of Research Areas and Postdocs/Students Presenting Posters**
- 3:30-5:00 **Student Posters and Networking Reception**

RESEARCH & NEW VENTURE SHOWCASE
JANUARY 22, 2010 – Nanomedicine: Enterprise and Society



Dr. Fabrice Jotterand, Ph.D.

Dr. Jotterand is Assistant Professor (Bioethics/Philosophy) in the Division of Ethics and Health Policy, Department of Clinical Sciences, at UT Southwestern Medical Center at Dallas, TX. He holds a secondary appointment in the Department of Psychiatry (Division of Ethics). Prior to his current position he taught at The Brody School of Medicine in the Department of Medical Humanities (2005-2006) and from 2006 to 2008 was Assistant Professor of Philosophy at the University of Texas at Dallas (with an appointment at UT Southwestern). He was Senior Managing Editor of The Journal of Medicine and Philosophy (2003-2005) and currently serves on the Editorial Advisory Board of the Journal. He is also a member of editorial board.



Dr. James R. Baker, Jr., M.D.

Dr. Baker joined the faculty of the University of Michigan in 1989 and is currently Professor of Medicine and Division Chief of Allergy and Clinical Immunology in the Department of Internal Medicine, Professor of Pathology, and Professor of Biomedical Engineering in the School of Engineering at the University of Michigan. In July 1998, Dr. Baker was appointed Director of the U-M's newly organized Center for Biologic Nanotechnology and in 2001 was inaugurated as the first recipient of the Ruth Dow Doan Endowed Professorship in Biologic Nanotechnology. Following the success of the Center for Biologic Nanotechnology, in April 2005, U-M's Board of Regents formed the Michigan Nanotechnology Institute for Medicine and Biological Sciences (M-NIMBS) and appointed Dr. Baker as its first Director. Under his leadership, M-NIMBS merges academic expertise and institutional resources across the university to develop and market applications for nanotechnology in medicine, the biological sciences and the environment.



Dr. Gareth Hughes, Ph.D.

Dr. Gareth Hughes is Senior Research Scientist at Lynntech and Vice President of Science and Technology at Xanaph, a Lynntech spinout. Prior to Lynntech, Dr. Hughes was Group Leader of Life Sciences at Zyvex Corporation where he led carbon nanotube-based life sciences initiatives and helped launch Medical Nanotechnologies to commercialize nanoparticle-based therapeutics. He received his Ph.D. in Biomedical Engineering from the University of Minnesota, his B.S. in Chemical Engineering from the University of Cincinnati and his M.B.A in Entrepreneurial Studies from the University of Dallas. Since 1994, he has been creating novel medical solutions based on micro- and nanotechnology and has helped launch three startup companies. During the last five years, he has been awarded over five million dollars in federal funding for life sciences development.



Dr. John V. St. John, Ph.D.

John is the Vice President of Research and Development for ULURU, Inc. John has worked with nanoparticles since his undergraduate research at Stephen F. Austin in fullerenes and carbon nanotubes. He attended graduate school at TCU receiving a Ph.D. in Chemistry under Jeff Coffey performing research on the formation of rare-earth ion-doped silicon nanoparticles. He studied polymer chemistry under the direction of Patty Wisian Neilson at SMU as a Dreyfus Post-Doc. As a senior scientist at Access Pharmaceuticals, he studied tissue engineering and developed the technology that would later become Altrazeal Transforming Powder Dressing and became a founder of ULURU, Inc.



Dr. Rob Burgess, Ph.D.

Dr. Burgess brings a strong life sciences background with a particular focus in molecular biology, *in vivo* drug target validation and genetic engineering to Medical Nanotechnologies. He has over fifteen years of experience in the biotech sector, including roles as Vice President, Business Development for Stem Cell Sciences, Vice President, Research and Development for Zyvex Corporation, Director of Scientific Sourcing and New Technologies for Serologicals Corporation and Co-founding Scientist for Lexicon Genetics. Dr. Burgess holds a B.A. in Biochemistry from the University of Texas at Austin and a Ph.D. in Molecular Biology from the University of Texas, M.D. Anderson Cancer Center in Houston. He has received numerous awards, including appointment to the Governor's Blue Ribbon Steering Committee for the Southern California Life Sciences Summit and Visiting Scholar at Georgia Tech University.

For more detailed bios, please visit our web site.

RESEARCH & NEW VENTURE SHOWCASE
JANUARY 22, 2010 – Nanomedicine: Enterprise and Society



Dr. Joseph C. Picken, Ph.D.

Dr. Joseph Picken is the Executive Director of the Institute for Innovation & Entrepreneurship at UTD and a School of Management faculty member, teaching graduate courses in Entrepreneurship, Leadership and Organizational Behavior. He holds an A.B. from Dartmouth College, an MBA from the Amos Tuck School at Dartmouth, and a Ph.D. from UT Arlington. Over a 30-year business career, he has held senior management positions in public and private companies.



Dr. Inga H. Musselman, Ph.D.

Dr. Musselman is Professor of Chemistry and Associate Provost at The University of Texas at Dallas. She is a member of the Alan G. MacDiarmid NanoTech Institute and the BioNanosciences Group. The Musselman Group investigates the fundamentals of image contrast in scanning tunneling microscopy and applies scanning probe and electron microscopy techniques to study the (bio)polymer microstructure associated with peptide/single-walled carbon nanotube composites, fuel cell membranes, and mixed-matrix membranes for gas separations.



Dr. A. Dean Sherry, Ph.D.

Dr. Sherry has a Ph.D. in Inorganic Chemistry from Kansas State University and was a NIH Postdoctoral Fellow before joining UT-Dallas in 1972. He served as the Chair of the Department of Chemistry from 1979-1990. His research interests include ^{13}C metabolic tracers, NMR & MRS to follow intermediary metabolism, imaging agents for MRI and PET, and hyperpolarized ^{13}C substrates to image metabolism in real time. Dr. Sherry is well-known for development of novel MR imaging agents; and was among the first scientists involved with studies of Gd^{3+} chelates as MRI contrast agents, holding one of the earliest patents in this area.



Dr. Jie Zheng, Ph.D.

Dr. Jie Zheng received his Ph.D. from Georgia Institute of Technology and did his postdoctoral research at Harvard University and Howard Hughes Medical Institute before joining UTD as an assistant professor in 2008. His research interest is focused on developing novel luminescent nanostructures for bioimaging. His previous work done at Georgia Tech was licensed to Invitrogen, a leading biotechnology company in the world. His group currently is developing several novel luminescent nanostructures which hold promising applications in bioimaging and sensing. His research is currently funded by UTD start-up program and NIH.



Dr. Rockford K. Draper, Ph.D.

Dr. Draper is a professor at the University of Texas at Dallas with joint appointments in the Department of Molecular & Cell Biology and the Chemistry Department. He is a member of the NanoTech Institute and a cofounder of Medical Nanotechnologies, Inc. His research interests include membrane cell biology and developing the interface between cell biology and nanotechnology. In 2002, he initiated the BioNanosciences Group at UT Dallas that brings together chemists, nanotechnologists, engineers, and biologists to explore biomedical applications of nanotechnology.



Dr. Mark M. Banaszak Holl, Ph.D.

Professor Banaszak Holl earned his Ph.D. at Cornell University in inorganic chemistry in 1991. After a post-doctoral position at the IBM T. J. Watson Laboratory, he joined the faculty at Brown University as an assistant professor the following year & became full to the University of Michigan full professor in 2004. In 2009, he accepted the post of Associate Vice-President for Research. He has received many awards including: the IBM Research Partnership Award, an Alfred P. Sloan Fellowship, and is a Fellow of the American Association for the Advancement of Science.