

The logo for the Brown Forum for Enterprise features a series of black dots of varying sizes arranged in a curved path, starting from a single large dot at the top left and ending with a larger dot at the top right, with a thin grey line connecting the dots.

Brown Forum for Enterprise

Rhode Island Showcase: Cutting-edge Medical Technologies, Biotech Research & Discovery

February 16, 2006

Rhode Island Convention Center

Conference: 1:00 – 6:00 p.m. in Meeting Room 556

Poster Session & Reception: 6:00-7:30 p.m. in the Rotunda Room

EVENT PROGRAM

Event Moderator – Neil Ferraro, Shareholder, Wolf Greenfield & Sacks, P.C.

Event Host – Barry Fogel, Founder and Executive Vice President, LTCQ, Inc

Meeting Agenda:

12:30-1:00 –Registration

1:00-1:15 - Welcome

1:15-1:30 - Ralph Taylor Smith - Battelle Ventures

1:35-1:50 - Yana Reshetnyak - University of Rhode Island

1:55-2:10 - James Padbury - Women & Infants Hospital, Brown University

2:15-2:30 - Alfred Vasconcellos - LCT BioPharma

2:35-2:50 - Kim Boekelheide - Brown University

2:55-3:10 - Richard Hopkins - Rhode Island Hospital, Brown University

3:15-3:35 - Food/Beverage Break

3:35-3:50 - Suzanne de la Monte - Rhode Island Hospital, Brown University

3:55-4:10 - Gregory Jay- Brown University, Rhode Island Hospital

4:15-4:30 - Ted Danse, Neurotech USA, Inc

4:35-4:50 - Justin Fallon - Brown University

4:55-5:10 - Yow-Pin Lim -Rhode Island Hospital, Brown University, Prothera Biologics

5:15-5:30 - Bruce Pratt- Vice President of Science Development, Genzyme Inc.

5:35-6:00 - Q&A

6:00-7:30 - Reception and Poster Session in the Rotunda Room



Featured Speakers:

Ralph Taylor Smith - *Partner, Battelle Ventures*

Prior to entering the venture capital industry, Ralph gained significant experience in R&D, business development and investment banking. He worked previously as a Research Scientist at Bell Labs, in Business Development at Lucent Technologies, and as an Investment Banker on Wall Street at Goldman Sachs and JP Morgan.

At Bell Labs (the AT&T/Lucent R&D unit), Ralph worked almost ten years as a Research Scientist and Technology Manager, focused on semiconductor microelectronics processing, photonics components and fiber-optics devices, advanced materials and nanotechnology. He authored over 40 scientific publications and technical conference presentations, had his research work featured in BusinessWeek and Fortune Magazine and was cited by MIT Technology Review Magazine as one of the top 100 technology innovators in the USA for 1999-2000. In addition to R&D, Ralph worked on business development/strategy teams supporting Lucent Microelectronics (now Agere Systems Inc.) and the Lucent Corporate Ventures group. After Lucent, Ralph made a transition to Wall Street investment banking, working at Goldman Sachs and then at JP Morgan, on mergers/acquisitions, equity offerings and convertible-debt transactions. At Goldman Sachs, Ralph covered the Technology Media & Telecommunications (TMT) industry sector, focusing on semiconductor microelectronics, photonics, communications infrastructure hardware and software. At JP Morgan, Ralph covered the Chemical Technologies industry sector, focusing on Specialty Chemicals, BioPharmaceuticals, Oil & Gas, and Energy/Power. He then joined the investment team at Battelle Ventures.

Ralph gained his academic training from Princeton University and the Massachusetts Institute of Technology (MIT), receiving a PhD in Engineering (Chemical & Biomolecular Engineering focus) and an MBA in Finance (Corporate Finance & Strategic Planning focus). He holds twelve patents, issued for innovations in such areas as semiconductor microelectronic devices, optical-fiber & photonics, fuel cells, flat panel displays, and nanotechnology systems. Ralph was selected as a Kauffman Fellow for 2004-2006 by the Ewing Marion Kauffman Foundation and its affiliated Kauffman Center for Venture Capital Education & Entrepreneurial Leadership.

Yana Reshetnyak, Ph.D. - *Assistant Professor of Physics, University of Rhode Island*

Yana completed her undergraduate and graduate studies in Russia at the Saint-Petersburg State University and at the Institute of Theoretical & Experimental Biophysics Russian Academy of Sciences, respectively. Her Ph.D. is in Physical and Mathematical Sciences with a specialization in Molecular Biophysics. Yana's research is comprised of 2 major topics:

Folding of membrane peptides and design of a new class of delivery agents

Yana's lab studies show how membrane peptides interact with lipid bilayers by inserting and folding. Based on physico-chemical properties of peptides interaction with membrane, they designed a new class of delivery agents for selective molecules translocation into the cell. She studies the membrane peptide pHLIP (pH Low Insertion Peptide), which has various unique properties: it is soluble in aqueous solution, it has the ability to insert spontaneously and quickly (seconds), and reversibly into lipid bilayers in transmembrane helix form only at a low pH. Her group demonstrated that pHLIP indeed translocates molecules across membranes into live cells only at a low pH. Since a high extracellular acidity (low pH) is characteristic of a variety of pathological conditions such as tumors, infarcts, stroke afflicted tissue, atherosclerotic lesions, sites of inflammation or infection, or damaged tissue resulting from trauma, the peptide could prove a novel tool for selective delivery of functional molecules for therapy, diagnostic, gene or cell regulation to targeted cells.

Protein fluorescence spectroscopy

Fluorescence spectroscopy is a traditional method for the study of protein structure and dynamics. Emission spectra of tryptophan residues (natural fluorophores in proteins) are highly sensitive to the environment and can reflect conformational changes in protein molecules. The environment of fluorophore determines the processes, which occur in the excited state after absorption of a photon and as a result, it affects spectral properties. The main goals of Yana's research are to reveal a general correlation between spectral parameters and structural properties of tryptophan residues in proteins and to develop mathematical and statistical methods of spectral and structural data analysis.

James Padbury, M.D. - *Pediatrician-in-Chief, Women & Infants Hospital and Professor & Vice Chair of Pediatrics, Brown University School of Medicine*

Jim Padbury's laboratory is interested in the developmental regulation of expression of the beta 1 Adrenergic Receptor, Placental Biogenic Amine Transporters and IL-10. Each of these genes has novel, developmental modes of regulation that are highly relevant to successful intrauterine growth and development. Jim will speak on Insights into Cardiac Regeneration from a Developmental Model. The beta 1 Adrenergic Receptor is most highly expressed in the myocardium, and the activity of this receptor is tightly regulated; its deregulation results in cardiac hypertrophy and congestive heart failure. Therefore, understanding the regulation of this gene is important and Jim's group has cloned this gene and has identified a possible mechanism to regulate the cardiac cell cycle.

He has been Professor and Vice Chair of Pediatrics at the Brown University School of Medicine since 1995. Jim is also currently the Pediatrician-in-Chief at the Women & Infants Hospital and Program Director of the COBRE for Perinatal Biology. Jim is a member of the Faculty Executive Committee and the Medical Faculty Executive Committee at Women and Infants Hospital of RI and Brown University, respectively. He is currently on the editorial Board of the Journal of Pediatrics and is an editorial reviewer for multiple journals including the Journal of Pharmacology & Experimental Therapeutics and the Journal of Clinical Endocrinology & Metabolism. Jim is also the Chair of the Pregnancy and Neonatology Study Section for the National Institutes of Health.

Alfred Vasconcellos - *President & CEO, LCT BioPharma*

Al Vasconcellos serves as President and CEO of LCT BioPharma. Prior to LCT, Al was President and CEO of Sertoli Technologies Inc., a Sertoli cell therapy company. As Chief Operating Officer of the ETEX Corporation, he transformed a handful of Harvard scientists into a fully integrated company with domestic and international sales in the field of cell and hard tissue regeneration. Al was a co-founder of CytoTherapeutics Inc., established the Strategic Market Development Department for Pfizer in New York City and headed R&D for the anesthesia and surgical care division of Kendall. He is a medically trained engineer with a business degree from Northwestern University.

Kim Boekelheide, Ph.D., M.D. - *Professor, Pathology and Laboratory Medicine, Brown University*

Kim's laboratory uses many basic techniques in biochemistry and molecular and cell biology to investigate interdisciplinary problems in reproductive toxicology/biology. A major issue in environmental health is mixed exposures. The group uses prototypal cell-type specific testicular toxicants to dissect interactions and interdependencies among those cells responsible for successful spermatogenesis. Ongoing experiments evaluate the potential roles of local paracrine growth and death factors in the regulation of spermatogenesis following injury. Knockout and transgenic mice are used to investigate these growth and death factor pathways.

Richard Hopkins, M.D. - *Cardiothoracic Surgeon, Rhode Island Hospital and Professor of Surgery, Brown University School of Medicine*

This academic year marks the 10th anniversary of Dr. Richard Hopkins' appointment as Chief of the Division of Cardiothoracic Surgery for the Brown University School of Medicine. He also holds the endowed Karl E. Karlson, M.D. and Gloria A. Karlson Professorial Chair in Cardiac Surgery and is Director of the Collis Cardiac Surgical Research Laboratory. He holds additional Professorial appointments in other Brown Departments including Pediatrics, Molecular Pharmacology, Physiology, and Biotechnology, and is also an Associate Professor in the Department of Engineering for Brown University. Currently, Richard has been awarded a Sabbatical, which has freed him from the administrative duties of the hospital Chief positions for Cardiac Surgery at the Rhode Island, Miriam and Hasbro Children's Hospitals. During his Sabbatical Richard continues to operate clinically but is limiting his practice to the area of his special focus of structural heart disease which includes congenital heart lesions, complex valve replacement and repair surgeries, heart valve transplants, complex reconstructive surgery, Ross operations, etc. This has allowed him to address three topics of study during his Sabbatical: 1) tissue engineering of cardiac constructs (translational research), 2) game theory and strategic tactical thinking; the art, craft, and science of cardiac surgery, and 3) structure function analysis of cardiovascular research institutes.

Suzanne de la Monte, Ph.D., M.P.H – Neuropathologist, Rhode Island Hospital and Associate Professor of Pathology and Medicine, Brown University

Suzanne de la Monte has had a major research interest in studying the roles of insulin and insulin like growth factors in relation to brain function since 1994. Suzanne was probably the first to recognize the importance of insulin as a factor mediating the survival of neurons in the central nervous system, and the consequences of impaired insulin actions on brain development and function. Her research led to the discoveries that the insulin gene is expressed in the brain, and that in Alzheimer's disease, neurodegeneration is associated with brain insulin deficiency as well as brain insulin resistance. The absence of associated Type 1 or Type 2 diabetes, led to the term, "Type 3 Diabetes", to reflect the selective brain insulin deficiency and insulin resistance in Alzheimer's disease. Suzanne's research has also demonstrated a connection between brain insulin or insulin like growth factor resistance and other forms of neurodegeneration such as alcoholic brain disease. These paradigm shifting concepts could lead to novel approaches to the diagnosis and treatment of Alzheimer's disease, and possibly other types of dementia. Suzanne actively engages Brown Undergraduate and Medical Students in these dynamic research efforts.

Gregory Jay, Ph.D., M.D. - Associate Professor of Medicine and Engineering, Brown University and Attending Physician, Rhode Island Hospital

Dr. Gregory Jay is an Associate Professor in the Department of Emergency Medicine and in the Division of Engineering. Greg is internationally renowned for his work on joint lubrication in confirming the existence of a synovial fluid lubricant which has been designated by the name "Lubricin", and linking its existence to the gene that codes for megakaryocyte stimulating factor. His subsequent studies have implicated both serine and cysteine proteases in the catabolism of this important protein which endows articular cartilage with the lowest coefficient of friction in nature. Presently, Greg's work is focused on determining whether increased friction resulting from loss of this protein is involved in the pathogenesis of early osteoarthritis. His work has been funded by both the National Institute on Aging and the National Institute of Arthritis and Musculoskeletal and Skin Diseases. Greg is a practicing Emergency Physician in the Bridge ED and remains engaged in applied biomedical engineering efforts in the treatment of patients with asthma, anemia and carbon monoxide poisoning. Noteworthy are his efforts to create a continuous pulsus paradoxus monitor as a vital sign in the triage of patients with dyspnea, which is supported by the National Heart, Lung and Blood Institute. Greg received the Young Investigator Award from the Society for Academic Emergency Medicine in 2000 and the Bruce Selya Award in 2004.

Ted Danse - President and CEO, Neurotech USA, Inc

Ted was recently named President and CEO of Neurotech SA and Neurotech USA, Inc. He has over 25 years of life science industry experience, with over 20 in the ophthalmic industry. Previously he was President and CEO of the US ophthalmic pharmaceutical company ISTA Pharmaceuticals Inc. (NASDAQ: ISTA) and was responsible for taking the company public in 2000. Ted has also served as a Director on the boards of several development-stage ophthalmic companies, including Quest Vision Technologies, Inc. that was sold to Advanced Medical Optics in May 2005. His early career was spent in business development roles at Coopervision, Bausch & Lomb and Schering-Plough. He then went on to hold various senior positions in Allergan. Ted holds a BA degree from the University of the Pacific, California, USA and an MBA from Thunderbird, The Garvin Graduate School of International Management, Arizona, USA.

Justin R. Fallon, Ph.D. - Professor of Medical Science, Brown University

Justin has a longstanding interest in developmental neurobiology, learning and memory, and the mechanisms underlying neurological disease.

Justin's lab studies a fundamental problem in neuroscience: understanding how ephemeral episodes of experience are transformed into stable changes in synaptic architecture and efficacy. The creation of such long-lasting synaptic modifications requires new protein synthesis, which in turn is regulated at both transcriptional and translational levels. Moreover, the transcriptional repertoire of the neuron is a function of its developmental stage – in particular the critical period – and its history of activation. A major challenge in unraveling the mechanisms of long term plasticity then is to relate both developmental timing and experience-induced neural activity to the regulation of identified molecules that play key roles in synaptic plasticity.

Fragile X Syndrome (FXS), the most common form of inherited mental retardation, offers a portal to the heart of this problem. The protein product of the Fmr1 gene, FMRP, plays a central role in regulating protein synthesis-dependent synaptic plasticity. Justin's lab has found that Fmr1 transcripts are highly abundant in the developing and adult olfactory bulb and are bi-directionally regulated by olfactory experience. Moreover, we

have found that the chromatin structure of the Fmr1 promoter region is developmentally regulated. The lab is using genetic, cellular and molecular approaches to understand the interplay of synaptic activity and gene expression in shaping neuronal architecture and function.

The focus of Justin's presentation today will be research his lab has done to develop a novel treatment for another neurological disorder, Duchenne's muscular dystrophy. They are characterizing the structure and function of the dystrophin complex, a critical ensemble of proteins that is defective in people with this disease. They have identified a new member of this complex, the proteoglycan biglycan. Recent findings indicate that biglycan is important for signaling at both the neuromuscular junction and at the dystrophin complex. The goals of the lab are to elucidate biglycan function in normal muscle and to use these insights to design novel therapeutics for muscular dystrophy.

Yow-Pin Lim, Ph.D., M.D. – *Research Oncologist, Department of Medicine/Div. Hematology-Oncology, Rhode Island Hospital; Assistant Professor, Brown University School of Medicine; and Co-founder, Prothera Biologics*

Yow-Pin is the co-founder and Chief Scientific Officer of ProThera Biologics, a start-up company in East Providence, RI. He is currently Assistant Professor at Brown Medical School and Research Oncologist in the Department of Medicine/Div. Hematology-Oncology, Rhode Island Hospital. ProThera was formed as a spin-off from technology developed at Rhode Island Hospital with the mission to develop and commercialize protein-based "theranostic" and therapeutic products for various human diseases. Theranostics refers to a new market area with enormous potential for growth which utilizes predictive tests to make critical and personalized treatment decisions. Yow-Pin graduated from the Medical School (Free University Berlin) in Germany and earned MD-Ph.D. degree in 1991. His research focuses on the role of natural serine protease inhibitors in systemic inflammation/sepsis and cancer metastasis. He has generated unique monoclonal antibodies against Inter-alpha Inhibitors (IaI) and has made major contributions to the understanding of these complex molecules in human physiology and in human disease states. He has established an accurate and sensitive immunoassay for IaI in biological fluids and is actively conducting translational studies focusing on the clinical application of IaI as a novel marker and therapeutic agent in sepsis and cancer.

Bruce M. Pratt, Ph.D. - *Vice President of Science Development, Genzyme Inc.*

Bruce M. Pratt is Vice President, Science Development for Genzyme Corporation, with responsibilities in the identification and evaluation of early stage opportunities (primarily therapeutic products) and proactive, selective outreach activities to the academic, biotechnology and life science venture capital sectors. He has worked for Genzyme for 17 years in positions of increasing responsibility in Cell & Protein Therapeutics Research & Development, most recently as Senior Director of Cell Biology. For 2 ½ years, through July 2004, he was based in one of Genzyme's European offices where he identified early stage European research and product opportunities and developed relationships with biotechnology companies and academic centers of excellence. Prior to his work at Genzyme, Bruce worked at Collagen Corporation and Celtrix Pharmaceuticals in Palo Alto California. He earned his Ph.D. from Michigan State University and was a post-doctoral fellow in the Department of Pathology, at Yale University School of Medicine.