



# Developments

## Biotechnology Innovation & Optimization Center

*A KTEC Center of Excellence*

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### Bio Center Spotlight

Dr. John Haslam is the consummate problem solver and teacher according to Valentino J. Stella, University Distinguished Professor of Pharmaceutical Chemistry.

Dr. Haslam, a Research Professor in the BIO Center at KU, has conducted drug formulation and drug delivery research in both an academic and an industrial capacity for more than 40 years. His broad experience and basic approach to research is fundamental to the many successes that have arisen from his efforts.



During Dr. Haslam's research career he has worn many hats. He has nearly thirty-years of industrial drug delivery experience. His industrial experience began at INTER<sub>x</sub> Research Corporation while serving as director of development. In 1980 Merck & Co. purchased INTER<sub>x</sub>, in part for access to expertise in controlled drug delivery systems. During this time, Dr. Haslam lists as one of his accomplishments the work he performed on the formulation development of Teczem<sup>®</sup>, a combination product of immediate release enalapril maleate and sustained release diltiazem malate.

The late Prof. Takeru Higuchi founded INTER<sub>x</sub> and was president during the time that Dr. Haslam worked there. Higuchi was a fervent believer in the principal of sharing scientific knowledge and discovery. Higuchi asked that his senior research team have lunch together daily to discuss developments. Haslam said "Tak would come over from the University to meet with the directors of INTER<sub>x</sub>; John Windhouser and later Art Mlodozienec, Arnie Repta, Ken Himmelstein, Gordon Amidon and others." Haslam said that sometimes Howard Mossberg, Dean of the School of Pharmacy would also join them.

Haslam went on to explain, "We would be there  
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### \$16.2 Million Grant Leads to Formation of the Institute for the Advancement of Medical Innovation

The Ewing Marion Kauffman Foundation announced an \$8.1 million grant to the University of Kansas to establish the Institute for Advancing Medical Innovation, a unique life science proof-of-concept model that draws support from higher education, philanthropy and industry experts to move medical innovations from the lab to the market. To enhance the impact of the Kauffman Foundation's support, the Kansas University Endowment Association will match the grant through contributions from other donors.

The Institute for Advancing Medical Innovation will focus on education and research that advances medical innovations, ultimately accelerating the number and quality of new drugs, medical devices and drug-medical device combinations from the bench to the bedside.

**"We believe this Institute will become a world-class resource and help define best practices in moving innovation to the real world."**

**- Carl Schramm, Kauffman Foundation president and CEO**

The Institute will be guided by an advisory board of independent experts and staffed by experienced drug development and medical device leaders to create an unprecedented collaboration of resources and processes to support the Institute.

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### Partnership Announced with the Leukemia & Lymphoma Society

The University of Kansas has been selected as the major academic drug development partner for the Leukemia and Lymphoma Society (LLS). The LLS has been developing new initiatives that have strengthened the organization's role as the leading private supporter of blood cancer research and provider of programs for patients and their families. LLS has funded more than \$550 million in research since 1949.

Under the arrangement, investigators at LLS will work with members of the KU Cancer Center, Office of Therapeutics, Discovery, and Development (OTDD) and the Biotechnology Innovation & Optimization Center (BIO Center) to study compounds for therapeutic potential. Thus far three projects have been identified for development and research at KU under the Society's Therapy Acceleration Program (TAP). The BIO Center is performing research related to two of the initial three projects.



The projects were identified during a meeting held at KUMC with KU, LLS and Beckloff Associates leadership in March. The LLS attendees included Louis J. DeGennaro, Ph.D., Chief Scientific Officer and Stephanie Berkowitz, PhD, Senior Director of the Therapy Acceleration Program. Michael Beckloff and Diane Beatty, PhD, Vice President, Pharmaceutical Sciences represented Beckloff Associates, Inc.

The representatives from KU included Roy Jensen, MD, Director, University of Kansas  
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## Peterson named Eminent Scholar

The Kansas Bioscience Authority has announced the designation of Blake Peterson, Distinguished Professor of Medicinal Chemistry, as one of its



first two KBA Eminent Scholars. The designation carries with it a \$5 million, 10-year grant from the authority, to be matched by KU.

Peterson joined the faculty in January as a professor in the Department of Medicinal Chemistry, part of KU's nationally third-ranked School of Pharmacy.

He had been at Pennsylvania State University since 1998, and will play a key role in KU's efforts to obtain National Cancer Institute designation as a Comprehensive Cancer Center. His research has led to groundbreaking discoveries in novel drug delivery, particularly with delivery across membrane barriers.

"The bioscience authority is a catalyst for bioscience research, technology transfer and jobs throughout Kansas," said Chancellor Robert Hemenway. "One of the best ways to accomplish that mission is to invest in exceptional researchers who have an entrepreneurial spirit. Dr. Peterson fits that description perfectly."

At Penn State, Peterson's research was funded primarily by the National Institutes of Health and the Dreyfus Foundation. His research is housed in the new wing of KU's Structural Biology Center.

"The Eminent Scholar designation underscores KU's strengths in basic biosciences research, especially cancer research," Hemenway said. "Work in this area can result in new discoveries, economic growth and, best of all, better lives for Kansans."

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## Center of Innovation Business Plan Submitted

The Biotechnology Innovation and Optimization Center (BIO Center), The Office of Therapeutics, Discovery and Development (OTDD), and business consultants have developed a business plan for an Innovation Center in Drug Delivery. The group received a Kansas Bioscience Authority Centers of Innovation planning grant to develop the business plan for an Innovation Center in Drug Delivery.

The Kansas Bioscience Centers of Innovations are designed to enhance the state's international leadership in bioscience clusters such as animal health and drug delivery, the KBA plans to invest \$15 million this fiscal year to develop the centers of innovation. The centers will ensure Kansas bioscience industries have access to cutting-edge technology and talent to develop new products that lead to high commercial payoff and new jobs. They will be industry-led and operate as a consortia of industry, higher education and private research organizations.



The Innovation Center in Drug Delivery would transform outstanding drug-delivery capabilities at KU into an integrated, high-performance drug-delivery organization. Drug-delivery technology allows the right dose of a pharmaceutical to achieve its desired effect at the right time, in the right place, and without undesired consequences.

The Kansas Bioscience Authority provided funding for three planning grants for collaborative research Centers of Innovation. Both the Lawrence and KU Medical Center campuses will participate in launching the proposed centers. KU is the lead institution on the Center of Innovation in Drug Delivery.

The Kansas Bioscience Centers of Innovations are part of a plan that the Kansas Bioscience Authority announced in September that involves \$52 million in new investments during the fiscal year that ends June 30, 2009. The investments will be used to expand life sciences research, foster the formation and growth of startup businesses, and otherwise facilitate expansion of the industry statewide.

The spending plan includes continued support for the Kansas Bioscience Eminent Scholars and Rising Stars program. The goal of this program is to enhance the national eminence of bioscience research programs at Kansas universities, the authority has dedicated \$6.75 million to recruit new eminent scholars and develop promising researchers. Blake Peterson, Distinguished Professor of Medicinal Chemistry, at KU is one of its first two KBA Eminent Scholars.

~ contributions from Kansas City Business Journal

## Partnership Announced with the Leukemia & Lymphoma Society

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Cancer Center; Karen Kelly, MD, Deputy Director, University of Kansas Cancer Center; James Baxendale, KU Center for Technology Commercialization; Brian Blagg, PhD, Associate Professor, Medicinal Chemistry; Roger Rajewski, PhD, Director, BIO Center; Sitta Sittampalam, PhD, Deputy Director, Office of Therapeutics, Discovery & Development (OTDD); and Scott Weir, PharmD, PhD, Director, OTDD.

The Society's commitment to cutting-edge science has contributed to an unprecedented rise in survival rates for some blood cancers. The relative five-year survival rate for people with leukemia, for example, has tripled in the past 40 years. Hodgkin lymphoma is now considered one of the most curable forms of cancer, thanks to radiation, chemotherapy or a combination of the two. This is tremendous progress considering the Foundation reported in its 1955 annual report: "As of this date, Leukemia is 100% fatal. This is almost a unique situation among the many diseases to which man is susceptible."

Research and development activities associated with the LLS TAP were initiated last May at the BIO Center. Initial studies are focusing on development of acceptable drug formulations for preclinical efficacy studies along with studies to aid in the establishment of proper dosing regimens.

~ courtesy University of Kansas Cancer Center

## Institute for Advancing Medical Innovation Formed

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"The Institute's formation represents lessons we have culled from years of studying the models that strengthen the ability to bring new inventions and products to market," said Carl Schramm, Kauffman Foundation president and CEO. "We believe this Institute will become a world-class resource and help define best practices in moving innovation to the real world."

The grant includes seed funds for up to 24 proof-of-concept projects per year. Based upon the recommendations from the advisory board, the Institute may progress with a varying number of projects from year-to-year.

The grant earmarks funding for the Institute for Pediatric Innovation (IPI), which funnels its drug development work through a partnership with KU, Kansas City's Children's Mercy Hospital (CMH) and Beckloff Associates Inc. IPI seeks to improve pediatric care by stimulating development of medical products and medications designed specifically for babies and children.

"We are honored to receive this grant from the Kauffman Foundation to enhance and streamline the incredible efforts taking place at the University of Kansas in discovery and development of medical innovations," said Scott Weir, PharmD, PhD, director, Office of Therapeutics, Discovery and Development at the University of Kansas Cancer Center.

Weir, a 20-year pharmaceutical industry veteran formerly with Marion Laboratories Inc., will head up the Institute as its director. He also serves on IPI's Pharmaceutical Advisory Board and leads KU's pediatric drug development efforts in support of IPI's mission. Weir joined KU almost three years ago to help the University's efforts to achieve National Cancer Institute designation, assuming a role partially funded by the Kauffman Foundation. "These funds will allow us to advance discoveries of drugs, medical devices, and drug-device combinations from concept to patients, allowing us to make a greater impact on the health of our community."

IPI already has identified three drug projects, which will be accelerated by the Institute during the next 12 months. BIO Center staff has already completed formulations work on one of the identified drug compounds.

"There are drug products on the market today that would be useful for children and could be indicated for treating childhood disease," Weir said. "But pediatric forms of things like high blood pressure medicines or medical devices are really not available because large pharmaceutical and medical device companies typically do not have enough of a financial incentive to develop these products," he added.

Weir explained that KU and CMH have developed a pediatric liquid form of an undisclosed hypertension drug that has previously been available only in adult form.

"IPI has said, 'Here's one of the drugs we'd like to make available in children's form,' and now we have worked with Beckloff, Mercy,

and others to chart the plan to bring this product to the market," Weir said. "At this point the product is ready now to leave our labs at KU and go into commercial laboratories and then into the formal drug development process to meet FDA requirements," he added.

In addition to its impact in the medical field, the Institute for Advancing Medical Innovation will serve as a national model for how philanthropy, industry and universities can collaborate to advance university innovations in life sciences.

In recent years the University has recruited veterans from the pharmaceutical industry to serve on medical and scientific teams. This has brought a proven private sector approach to the complex problem of moving university research out of the laboratory and into the market place. The project teams are focusing on the most promising new drugs and treatments.

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**"The University of Kansas and Kauffman Foundation share a commitment to innovation and a mission of service to the community. This generous grant will help us find new treatments and cures and get them to the patients who need them."**

**- Chancellor Robert Hemenway**

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The Institute will encourage greater investment in promising research to allow it to move further in the development process. This will eventually lead to greater interest by pharmaceutical companies and potentially lead to license agreements, spin-out companies, and other investments.

"The University of Kansas and Kauffman Foundation share a commitment to innovation and a mission of service to the community," said Chancellor Robert Hemenway. "This generous grant will help us find new treatments and cures and get them to the patients who need them. Lives will be changed and the health of our region and nation improved as a result of the work that will take place at the Institute."

The grant also will enable expert faculty to educate the next class of drug and medical device development specialists by giving workshops and courses on the drug commercialization process.

"It's gratifying for us at KU Endowment to help the university advance the frontiers of knowledge," said Dale Seufferling, president of KU Endowment. "We're proud to partner with the Kauffman Foundation and look forward to attracting other donors to provide funding for this institute, which represents an unparalleled training opportunity for KU graduate and post-doctoral students."

Duplication of this approach in other regions is an important goal. However, it is noted that the Institute will have an economic benefit in this region. It is assumed that this Institute will play a role in the formation of new pharmaceutical companies in the Kansas City region.

The Ewing Marion Kauffman Foundation is a private nonpartisan foundation that works to harness the power of entrepreneurship and innovation to grow economies and improve human welfare. Through its research and other initiatives, the Kauffman Foundation aims to open young people's eyes to the possibility of entrepreneurship, promote entrepreneurship education, raise awareness of entrepreneurship-friendly policies, and find alternative path-

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## Peterson Named

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The 2004 state statute that created the KBA authorized investment in Eminent Scholars and Rising Star Scholars. The criteria emphasized professional distinction, a high level of research activity, and the potential for commercialization of that research.

Peterson, who recently was also appointed as a Regents Distinguished Professor, received a bachelor's degree from the University of Nevada-Reno and a doctorate from UCLA, both in chemistry. He spent two years as a research assistant at the Swiss Federal Institute of Technology and three years at Harvard as a Damon Runyon-Walter Winchell Cancer Research Foundation post-doctoral fellow. He was an American Cancer Society Research Scholar in 2003 and a Dreyfus Foundation Teacher-Scholar Award recipient in 2004.

The KBA also announced the designation of a second Eminent Scholar. Juergen Richt has joined Kansas State University as a Regents Distinguished Professor in its School of Veterinary Medicine.

~ courtesy University of Kansas University Relation

## IAMI Formed

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ways for the commercialization of new knowledge and technologies. It also works to prepare students to be innovators, entrepreneurs and skilled workers in the 21st century economy through initiatives designed to improve learning in math, engineering, science and technology. Founded by late entrepreneur and philanthropist Ewing Marion Kauffman, the Foundation is based in Kansas City, Mo. and has approximately \$2 billion in assets.

## Haslam: a consummate team player

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to report on the research we were doing and hopefully some good results. Tak would also make suggestions of work he would like to see done."

"On many occasions Tak would bring up research problems and ask the group to contribute their best thinking on how to approach the problems. He would usually have questions following his visits as a consultant to various pharmaceutical companies," Haslam added.

According to Haslam the value of the "free lunches" was that guests could also be invited to present ideas for new research projects. Higuchi was able to stay informed about what was going on in the company, and the staff would be able to work together to solve problems and to contribute their ideas to the ongoing research.

Dr. Haslam continued his formulation development research at Oread, Inc., Lawrence.

According to Valentino J. Stella, University Distinguished Professor of Pharmaceutical Chemistry, Haslam applies very basic principals to solving problems. Stella said that Haslam has an inquiring mind that gets to the nuts and bolts of a process then applies that process to problem solving.

Stella joked that Haslam's approach to problem solving is very much a "CSI-type" approach. His approach involves breaking the problem into small pieces. He then uses his years of experience to methodically tackle each piece of the equation. Soon he has dissected the problem and identified potential solutions.

Dr. Haslam received his Ph.D. from the University of Utah and was granted an NIH Postdoctoral Fellow Stipend at Cornell University for his postdoctoral training. In 1973, Dr. Haslam began his industrial career at Interx in Lawrence, Kansas. Prior to that Haslam served as an assistant professor of Chemistry at KU. He later worked for Oread Laboratories, also in Lawrence.

It was in 1996 that Dr. Haslam was given the opportunity to return to the academic arena. This has allowed him to contribute to the pharmaceutical research area by conducting research and by teaching graduate students.

Stella attributed a large number of dissertations to the role that Dr. Haslam played in the graduate students experience here at KU. Haslam is a skillful teacher. He is always kind and encouraging. He helps the students to identify the problem, then aides the students as they identify how to approach the problem, always guiding them toward the direction of the simplest experiments that will get them the results and the answers that they seek. Stella said he "has a great deal of respect for John's interaction with students. He is the consummate team player."

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