A groundbreaking research program underway at the University of Missouri–Kansas City (UMKC) is exploring the idea that bones and muscles biochemically “talk” to each other.

What’s more exciting is that the research could potentially lead to new ways of thinking about and treating the loss of bone mass (osteoporosis) and weakening muscles (sarcopenia), two diseases that plague the elderly and are of special interest to the massive, and rapidly aging, baby boomer generation.

UMKC’s interdisciplinary research team is being led by Dr. Lynda Bonewald, Curators’ Professor and Director of the UMKC Center of Excellence in Dental and Musculoskeletal Tissues and Director of the Bone Biology Research Program at the School of Dentistry. In July, UMKC received a five-year, $8.3 million grant from the National Institute of Aging (part of the National Institutes of Health) to fund the team’s research.

“We proposed the idea that muscle and bone could be cross talking to each other,” Bonewald said. That premise was the focus of the recent Topical Meeting of the American Society for Bone & Mineral Research (ASBMR), July 17 and 18, which was held for the first time in Kansas City.

(continued on page 2)
The meeting introduced the concept that “instead of thinking of bone and muscle separately, we should start to look at them as a unit,” Bonewald said. “Additionally, when we start to devise treatments and therapies, should we be thinking about therapeutics that could target both bone and muscle simultaneously?”

A NEW APPROACH

Her background in immunology and hematology prompted Dr. Bonewald to take a unique approach to bone research. The established method when she entered the field in the late 80’s was to study osteoclast cells, which resorb bone, and osteoblast cells, which make bone. Both cell types are found on the bone’s surface.

“However, if you look inside the bone, there are these other cells, but when I asked what they did, I was told, ‘Oh, they’re just placeholders; you don’t want to focus on those.’ As a biologist, I just couldn’t believe that those cells weren’t doing anything,” Bonewald said.

Her curiosity about these cells, called osteocytes, led to the difficult task of removing the delicate cells from within the bone for study. Bonewald’s work evolved to identifying specific markers on the osteocytes that weren’t expressed on the other bone cells, which has created “an explosion in the field” and a great deal of interest in osteocyte biology and function.

“Osteocytes control bone formation, telling the osteoblasts to make more bone and the osteoclasts to resorb or remove bone,” Bonewald said. “We showed that osteocytes could act as an endocrine cell to create factors that would target other tissues. So it made sense to ask if the bone could make factors that would target muscle, and possibly the muscle could make factors that would target bone.”

The possibility of crosstalk between muscle and bone is suggested in the aging process when muscles begin to weaken and bone mass is lost. These symptoms often occur simultaneously, and Bonewald’s research team is exploring whether the tissues are failing at the same time, or if one could be failing more quickly and affecting the tissue of the other.

The members of Bonewald’s team include investigators from the UMKC Schools of Dentistry, Nursing, and Computing and Engineering, representing a variety of fields. In addition, the team includes collaborators at University of Missouri - Columbia (MU), Missouri University of Science and Technology and University of Kansas Medical Center (KUMC). She believes that the unique perspectives these different researchers bring to their projects have helped contribute to the team’s success to date.

“When you bring different researchers to a team, they think differently and can see unique ways to work together to move toward answering key questions. That’s where we make the big leaps in discovery,” Bonewald said.

Making new discoveries is not the only challenge her team faces, however. Taking those discoveries and more quickly translating them for clinical applications so that they can become new patient treatments is also an important goal.

“A question that more and more of us are trying to address is: ‘How can we shorten the time from a basic discovery to actually producing an application for patients?’ A discovery can take five, 10 or 15 years before it actually makes it to the patient,” Bonewald said. “We call that time between discovery and application the ‘valley of death’ because it takes so long and requires large financial investments.”

A possible solution to this problem is the proposed Translational Medicine Institute in Kansas City, one of the Big 5 initiatives selected by the Greater Kansas City Chamber of Commerce. The Institute would ensure that promising new discoveries are more quickly translated into patient treatments and cures. Patients would reap the benefits of greatly improved health care and reduced health care costs.

Bonewald believes that the interest in bone and muscle research will continue to grow, not just in Kansas City, but also nationally and internationally. “Looking at bone and muscle as a unit is a new frontier,” she said.

Likewise, translational medicine is another frontier that Kansas City is eager to explore and conquer.
KC Animal Health Corridor Events Overview

The KC Animal Health Corridor recently showcased its leadership in the growing animal health industry with four annual events held in Kansas City in August.

The four events – the Animal Health Research Symposium, Animal Health Investment Forum, Animal Health University/Industry Technology Transfer Event, and the KC Animal Health Corridor Homecoming Dinner – provide opportunities to present new products and technologies, to discuss innovations and collaborations, and to network with industry leaders, academic researchers, and potential investors. The events are scheduled to coincide with the annual Central Veterinary Conference, also in Kansas City.

BRINGING INNOVATIONS TO MARKET FASTER

More than 160 attendees learned of efforts underway to more quickly bring animal health discoveries to the marketplace. This year’s Symposium, “Fast Forward: Accelerating Innovation to Commercialization,” provided a variety of case studies from university, corporate and government leaders who discussed how they are overcoming challenges and creating new approaches to speed the delivery of animal health treatments and technologies.

A VENUE FOR NETWORKING AND LICENSING

Three new universities joined the returning seven from 2011 to present their latest innovations available for licensing to companies. This year’s Animal Health University/Industry Tech Transfer Event attracted representatives from more than 70 companies’ research and business development departments, an increase over last year’s attendance.

CREATING FUNDING OPPORTUNITIES

The Animal Health Investment Forum provides a one-of-a-kind opportunity for companies to present their new products and technologies to potential corporate investors and venture capital funds. During its four years, the Forum has helped presenting companies raise more than $60 million and secure several licensing deals.

WELCOME TO COWTOWN!

More than 750 people received a Midwest welcome filled with Kansas City barbecue and country music at the KC Animal Health Corridor Homecoming Dinner, the Homecoming Hoedown. In addition to a fun social gathering, the event provided an important networking opportunity for those in the animal health industry. Since 2006, the Corridor has attracted more than 1,300 new jobs and nearly $1 billion in capital investment.
More than 160 researchers, government officials, industry experts and academics from across the United States gathered in Kansas City on August 27, 2012 for the sixth annual Animal Health Research Symposium to discuss innovation and collaboration in animal health.

The 2012 symposium, “Fast Forward: Accelerating Innovation to Commercialization,” was presented by the Kansas City Area Life Sciences Institute (KCALSI), the KC Animal Health Corridor, Kansas State University and the University of Missouri and coincided with the annual Central Veterinary Conference.

“Translational research is at the forefront of our efforts to expand economic opportunities through life science innovation,” said Dr. Wayne Carter, President and Chief Executive Officer of KCALSI Institute. “By bringing national and regional experts together in the heart of the KC Animal Health Corridor, the KCALSI and our partners created a unique and important opportunity for collaboration.”

Symposium attendees heard about innovative approaches to accelerating commercial development within academic centers and the animal health industry. This year’s exciting program also featured opportunities to engage with researchers applying translational medicine for both human and animal health.

The symposium opened with an international focus on the intersection of social justice and sustainability in a profit-driven market. Dr. Guy H. Palmer, Regents Professor of Pathology and Infectious Diseases at Washington State University, described his work in Africa, specifically addressing the bottleneck created in developing countries by the lack of infrastructure.

Dr. Paul Dale shifted the group’s focus by discussing how to identify and design products that can move quickly and effectively from idea to implementation. Dr. Dale, the Director of the University of Missouri Biodesign and Innovation Program, discussed his program’s approach that relies on proximity promoting collaboration. In this yearlong program, medical, engineering and business
fellows work together to create solutions to identified human and animal health needs.

Moving from concept to creation, Dr. Linda Rhodes, the Chief Scientific Officer of Aratana Therapeutics, discussed her company’s unique business model to streamline the path to regulatory approval. Aratana Therapeutics, a Kansas City-based startup develops innovative therapies for dogs and cats. Dr. Rhodes stressed that her company’s success is due in large part to the pool of talent available in the KC Animal Health Corridor in Kansas City. Dr. Rhodes also outlined the challenges that innovators face, including competition for resources, regulatory hurdles, risk aversion and changes in priorities.

Attendees then were able to apply this information to specific case studies presented by government and academic experts. Dr. Marvin J. Grubman, Supervisory Research Chemist at the USDA and Agricultural Research Service at Plum Island Animal Disease Center, discussed research on foot-and-mouth diseases that led to the development and licensing of the first molecular FMD vaccine licensed for livestock use in the United States. Kansas State University Distinguished Professor T. G. Nagaraja added to the idea that unmet needs with economic consequences are the future of animal health. Dr. Nagaraja discussed liver abscesses in cattle – a top 10 concern of the packing industry, according to Dr. Nagaraja - and the research that led to the understanding that the pathogenesis of the disease has led to an immunoprophylactic approach as an effective option to control these abscesses in feedlot cattle.

Wrapping up the morning session, Dr. Philip J. Bergman, the Director of Clinical Studies for VCA Antech and Medical Director for the Katonah-Bedford Veterinary Center, discussed a new therapeutic vaccine for canine oral malignant melanoma. Dr. Bergman noted that dogs with malignant melanoma are good models for advanced human melanoma, citing several factors including that tumors are locally aggressive and rely on immune-competent hosts.

The symposium concluded with a presentation by Dr. James Cook, the William & Kathryn Allen Distinguished Professor in Orthopaedic Surgery and the Director of the Comparative Orthopaedic Laboratory at the University of Missouri. Dr. Cook shared with attendees how the University of Missouri is taking a highly collaborative approach to developing orthopaedic treatments for both humans and animals.

Participants in this year’s Animal Health Research Symposium left with a better understanding of the innovation landscape, recommendations on how to drive business demand and insight on how to bring products to market in a timely and resource-efficient manner. Throughout the day-long symposium, featured speakers discussed how innovations move from idea to marketplace, including the important role of translational research.

Please visit [www.kclifesciences.org](http://www.kclifesciences.org) to view a photo gallery from this year’s event.
The seventh annual KC Animal Health Corridor Homecoming Dinner, the “Homecoming Hoedown,” held August 27, welcomed the animal health industry to come home to its cowtown roots in Kansas City.

More than 750 animal health executives, representing 181 animal health companies from around the world, attended the Homecoming this year at Hale Arena, home of the 113-year-old American Royal. Guests gathered for a cocktail reception, Jack Stack BBQ dinner and updates on important developments in the KC Animal Health Corridor. The evening culminated with an appearance by country music legend Kix Brooks.

Following opening music entertainment from Rex Hobart and The Misery Boys, guest host Craig Wallace, chair of the KC Animal Health Corridor Advisory Board and Chief Executive Officer of Ceva U.S. Holdings, gave an update on efforts to stimulate innovation and new business growth in the Corridor. He updated guests on the National Bio- and Agro-Defense Facility (NBAF) being built in Manhattan, Kan., and highlighted the new BioResearch Central initiative that is putting a spotlight on an important cluster of clinical research organizations based in the KC metro.

Guests also heard from Bob Marcusse, president and Chief Executive Officer of the Kansas City Area Development Council. Marcusse detailed successful recruitment and expansion projects that bring the Corridor’s total job attraction to more than 1,300 and capital investment to nearly $1 billion since 2006.

Marcusse also had the honor of announcing a brand new success – ATS Animal Health Training Solutions, a training and development company dedicated exclusively to the needs of animal health industry professionals, will locate its national corporate training center in the KC Animal Health Corridor.

Kix Brooks closed the evening’s event with storytelling and a performance of several songs from his iconic career as a member of Brooks & Dunn.

Please visit KCanimalhealth.com to view a photo gallery from this year’s event.

George Heidgerken, Corporate Senior Vice President, Boehringer Ingelheim GmbH and Global Head, Boehringer Ingelheim Animal Health; Pat McCown, Chief Executive Officer, McCownGordon Construction

IRON PAW AWARD

The KC Animal Health Corridor is proud to honor George Heidgerken, former KC Animal Health Corridor Advisory Board chair, and Corporate Senior Vice President, Boehringer Ingelheim GmbH, Global Head of Boehringer Ingelheim Animal Health with the 2012 Iron Paw Award. George has been a key supporter in the Corridor since its inception.

Since the launch of the KC Animal Health Corridor, more than 100 animal health companies from around the world have evaluated the Corridor for relocation or expansion opportunities. Additionally, 24 animal health organizations have been successfully recruited or expanded in the Corridor, creating more than 1,300 new jobs, $74 million in new payroll and nearly $1 billion in new capital investment.

George was instrumental in the establishment of the Workforce Development Taskforce, and his commitment to the KC Animal Health Corridor has helped develop the initiative into what it is today.
The third annual Animal Health University/Industry Technology Transfer Event enjoyed continued growth and expansion with three more universities joining the event.

The University of Illinois, South Dakota State University and Purdue joined the seven returning participants: Kansas State University (K-State), University of Missouri, Iowa State University, University of Nebraska, Oklahoma State University, Colorado State University (CSU) and Texas A&M.

This year’s event also experienced increased industry attendance with more than 70 company representatives from research and business development.

K-State and Colorado State University each announced unique collaborative programs during the panel discussion. K-State will match industry funding for research in the areas of emerging foreign animal diseases and zoonotic diseases conducted at the University. CSU will match industry funding on projects using CSU intellectual property. This year’s panel discussion was moderated by Dr. Wei Lu, Global Swine Biological R&D group at Ceva Sante Animale.

The Tech Transfer Event is designed to introduce companies to new university innovations that are available for licensing. In addition, the Event provides a networking venue focused on animal health to help establish new business relationships. The Tech Transfer Event is organized by the Kansas State University Institute for Commercialization, the KC Animal Health Corridor, and KCALSI.
When physicians at Children’s Mercy Hospitals and Clinics work to diagnose an inherited disease in their young patients, they have access to an amazing diagnostic tool that no other children’s hospital in the world currently provides.

With just a single drop of blood, the staff of the Center for Pediatric Genomic Medicine, led by Dr. Stephen F. Kingsmore at Children’s Mercy, can produce a genetic test that scans for 600 severe genetic childhood diseases and provides results in four to six weeks. Working closely together, the Center’s staff and physicians can then determine the cause of the illness and the most effective treatment for the child.

It was only 12 years ago that the first human genetic blueprint was meticulously created by hundreds of scientists, working nearly 10 years and at a cost of $3 billion. Fast forward to 2012, and Dr. Kingsmore’s team has developed a comprehensive genome-sequencing test that screens for 600 genetic diseases at a cost of $1,250.

“This test, which sequences the entire genome, is intended to replace individual tests that cost up to $5,000 apiece,” Kingsmore said. “So the patient is getting the equivalent of 600 individual gene tests for a cost of $1,250.”

Reading the child’s genome information – or DNA code – reveals far more patient information than ever before. Kingsmore compares it to “practicing medicine with a blindfold on and now we’re taking the blindfold off.”

“Up until now, medicine has been practiced without any understanding of the patient’s genetic code,” he said. “This next generation of medicine, individualized medicine, is being invented right now. There are centers across the United States that are starting to use genome information in medical practice. But we’re the first in a children’s hospital.”

After deciding to focus specifically on inherited childhood diseases, Kingsmore’s team of physicians, scientists and pathologists began working on the genetic test. The 600 diseases were selected from more than 3,500 genetic disorders because “they represent the working needs of a physician who studies childhood genetic diseases.” Their test will soon be available to physicians around the world, as it was recently licensed by Illumina, Inc. in San Diego.

“We want Children’s Mercy to be a pioneer in developing new technologies, and once we’ve validated them in clinical practice, we’ll offer them to our patients first and then make them available to other physicians,” Kingsmore said.

The Center’s genetic test has already made a difference in diagnosing and treating numerous patients at Children’s Mercy Hospital. Two young brothers were suffering from a severe inflammatory bowel disease that also affected the boys’ growth and development. A variety of treatments were tried unsuccessfully, and the younger boy eventually had to be fed intravenously.

“We did our testing and identified the DNA change that was causing the disease,” Kingsmore said. “Because we knew how the disease was caused, we could determine that a bone marrow transplant would be an effective treatment.” Physicians are now working with the boys’ parents to explain and schedule the treatment.

The work underway at the Center for Pediatric Genomic Medicine is slowly being publicized, and physicians around the world have begun asking for assistance in diagnosing children’s diseases. For example, Kingsmore and a colleague recently received email requests from physicians and researchers in Saudi Arabia, Turkey, India and Florida over a three-day period. However, those inquiries are likely to dramatically increase.

A white paper describing a new method to provide genetic information within just two days for seriously ill babies in the neonatal intensive care unit of Children’s Mercy Hospital has just been published in Science Translational Medicine. Kingsmore’s team built a software system – called SSAGA: Symptom and Sign Assisted Genome Analysis – that enables a neonatologist to enter the baby’s symptoms, which then directs the computer to analyze specific regions of the genome and guides the pathologist on the areas to interpret. The support to pursue this type of work is what attracted Kingsmore to Children’s Mercy Hospital.

“We needed to be in a large, excellent hospital that also believed in what we believe – that genetic testing is the future of medi-

(continued on bottom of page 9)
This September marked the opening of the Elizabeth J. Ferrell Fetal Health Center in its permanent space in the new Elizabeth Ann Hall Tower at Children’s Mercy Hospitals and Clinics.

The Center specializes in care of babies diagnosed with complex congenital defects. Children’s Mercy is one of the only free-standing children’s hospitals in the country to also deliver these high-risk babies.

The new 12,000 square-foot unit is more than double the center’s previous space, and includes two specialized delivery/operating rooms, four labor and recovery rooms, and a Perinatal Clinic space adjacent to the Special Delivery Care Service. Developed in collaboration with the University of Missouri-Kansas City School of Medicine, the Center, by design, has direct bridge access to the Children’s Mercy Level IV Neonatal Intensive Care Unit (NICU) and special access to the Truman Medical Center Obstetrics unit via the new Gary Dickinson Family Bridge of Hope. There are also obstetricians and obstetrical nurses at the hospital 24 hours per day.

“The demand for the delivery service continues to grow, so we’re thrilled to have the expanded space,” said Timothy Bennett, MD, Medical Director of the Fetal Health Center and Vice Chairman of the Department of Obstetrics and Gynecology at UMKC School of Medicine. “Parents of high-risk newborns can rest assured knowing their babies will have access to all necessary subspecialists and pediatric surgeons, immediately after birth. There is also peace of mind for mom who can stay together with her baby after delivery.”

Since the Center opened in March 2011, 122 births have been supported in addition to 300 integrated consultations. “We’re counseling a lot of families about abnormalities,” Dr. Bennett said. “The good news is many of those babies are able to deliver with their local health care provider, with our expertise in helping them design the proper delivery plan. For the 122 who delivered here, we’re proud to say we’ve done our best to provide excellent care, not only fetal and neonatal care, but maternal care as well.”

“Community support is important, and KCALSI was one of the first organizations to say we believe in your work,” Kingsmore said.

“What we’re doing is a little bit ahead of the curve. Ninety-nine percent of the healthcare innovation in this country happens either in a region from Boston to New Jersey, or from San Francisco to San Diego,” he said. “Some people just can’t believe that this could be happening in Kansas City. What we’re doing in genetic testing is unique, and we’re one of the first in the world to do some of things we do.

“The goal is to simplify genome testing, shrink it down and reduce the cost so that in the future, this will be a simple, routine test.”
Taking place November 15, 2012, at the Ritz Charles Convention Center in Overland Park, Kansas, the BioResearch Central Summit is designed to bring together leaders in non-clinical, pre-clinical and clinical research – including CROs, CSPs, academic medical centers, clinical sites and pharmaceutical, biopharmaceutical, and medical device companies – to discuss strategies for advancing clinical research throughout our region and, more importantly, for accelerating the development of innovative new products to improve human and animal health worldwide.

**What is the format for the Summit?** The day-long agenda includes keynotes and podium presentations, as well as interactive panel discussions, combined with networking opportunities that focus on making connections and learning more about the CROs in the KC region.

**Who should attend?** The Summit is designed to benefit professionals involved with CROs, CSPs, academic medical centers, clinical sites, as well as pharmaceutical, biopharma and medical device companies.

**How to register?** Registration is $200 per person and registration is available online.

**Interested in exhibiting?** Exhibit spaces are available for $300, which includes an individual Summit registration. You can register online.

**Interested in sponsorship?** If you would like to become a Summit sponsor and highlight your company’s leadership, please contact Angela Kreps via email or by phone (913) 706-4168.

BioResearch Central is the result of years of research and appreciation of the tremendous CRO asset base that we have in the region. This Summit is an excellent opportunity for these CROs to network, focus their business objectives and create new opportunities through regional collaboration. It is also a great opportunity to hear novel ways to accelerate deliverables including patient recruitment, leveraging social media and bringing risk management into the CRO/CSP space. It’s all about speed to market and bringing new medicine to patients faster.

Wayne O. Carter, DVM, PhD, DACVIM, President and Chief Executive Officer
Kansas City Area Life Sciences Institute

The BioResearch Central Summit is business-focused; it’s about accelerating the growth of our companies. The CRO community is excited about this program, they have come together to make the program meaningful, and this is definitely a must-attend event.

Kelly Patrick Gillespie, Executive Director
Missouri Biotechnology Association, MOBIO
More than 200 attendees had an opportunity to learn about the latest technologies available for licensing by some of Missouri's top research institutions at the 2012 Missouri Technology Expo held September 20 at the University of Missouri's Christopher S. Bond Life Sciences Center. This was the third year for the event, which was sponsored by the MU Office of Technology Management and Industry Relations (OTMIR).

“MU has been recognized for being among the very best in the world in many areas of research, including plant and animal sciences, family and community medicine, comparative medicine, nuclear science and radiochemistry,” said Rob Duncan, MU’s Vice Chancellor for Research. “We are strong in collaborative research and in our efforts to translate these research results to inventions and innovations that improve the quality of life for us all. We are in the top quarter of all universities in revenue derived from licensing our intellectual property, and we have been very successful in helping build new companies that are commercializing these innovations. Our students are involved at every stage of this process with close faculty mentorship, and some of our top students have gone on to lead these exciting new high-tech companies upon graduation.”

A total of 20 inventions were presented from the University of Missouri System, including 10 in the very early stage and in need of a business person to start a company, and 10 companies that were seeking investment. There were also ample opportunities for networking throughout the day.

“Our goal is to grow this event by providing a forum for researchers, entrepreneurs, investors and business development professionals to interact, creating the foundation for exciting and lucrative commercialization events,” said Chris Fender, Director of OTMIR.

The morning plenary session featured Tom Schlafly, Partner in the Thompson Coburn law firm and President of The Saint Louis Brewery, Inc., as the keynote speaker. As the largest American-owned brewery in St. Louis, The Saint Louis Brewery brews Schlafly Beer. Mr. Schlafly authored the book, “A New Religion in Mecca: Memoir of a Renegade Brewery in St. Louis,“ reflecting on his journey of establishing Schlafly Beer and turning it from the first micro-brewery in Missouri to having distribution in 12 states and growing.

Rebecca Rone, Coulter Translational Partnerships Program Co-Director, briefed lunch attendees on the recent announcement of the awards that will fund five projects that are using biomedical engineering solutions to meet the needs of patients. Selected in 2012, the projects involve 10 co-investigators from MU’s School of Medicine and College of Engineering. The new funding, provided by a $5 million partnership between MU and the Wallace H. Coulter Foundation, will help turn discoveries made in laboratories into new products and services for patients. The projects include development of a tool for treating burn victims, a technique for detecting neurodevelopmental disorders, and creation of better methods to identify and treat patients with lung or colorectal cancer.

The afternoon keynote speaker was Gregg Scheller, who is currently the Chief Executive Officer of Katalyst Surgical, LLC, and chairman of the board of directors of Kogent Surgical, LLC. Katalyst is a medical device company focused on the development of surgical products for ophthalmology; Kogent is focused on neurosurgical products.

New to the event this year was a “Student Elevator Pitch” competition organized by the Collaboration, Leadership and Innovation for Missouri Business (CLIMB), an MU student group. Judges with business and investment experience listened to nine pitches made by students from universities around the state.

The event concluded with a Scientific Partnership and Resource Connection (SPARC) reception where the winners of the student competition were announced and prize money awarded. A niche product – the HVAC Strap – was the winner, beating out high-tech inventions. Second place went to Parts Finder, an online advertising vehicle.

Reception attendees sampled Veggie Chicken Strips, served as kabobs seasoned with cilantro and lime or peanut sauce, as well as soy-marinated strips. The Beyond Meat company, which recently placed a production facility in Columbia, MO, produces the strips based on technology licensed from MU.
Asma Zaidi, PhD, Professor of Biochemistry at Kansas City University of Medicine and Biosciences (KCUMB) translates her excitement for science into critical research in brain aging and neurodegeneration.

World trained, Zaidi did postdoctoral training in Paris and Rio de Janeiro. In 2007, she joined KCUMB where she has established collaboration on campus, the Aging and Neurodegeneration Group, to take a collective interdisciplinary approach toward tackling this immensely complex area of research.

Dr. Zaidi believes that calcium plays a key role in dictating neuronal health. Neurons in the aging brain and in age-related pathologies have impaired ability to precisely regulate intracellular calcium. Her research revealed, for the first time, a progressive age-dependent decline in activity and protein levels of the synaptic plasma membrane Ca2+-ATPase (PMCA), a calcium transporter critical for regulating calcium. Zaidi has recently shown that PMCA is a target in Parkinson’s disease (PD) as well. Loss of PMCA increases neuronal susceptibility to a variety of biochemical stresses and causes accelerated cell death.

Currently there are no known strategies to protect, prevent and/or reverse changes in PMCA, but Zaidi’s findings that dietary flavonoids such as resveratrol and epigallocatechin gallate, present in red wine and green tea, respectively, prevent PMCA damage caused by PD mimetics, create hope for affected patients.

Based on a growing body of evidence that the sense of smell is impaired almost a decade prior to the appearance of clinical symptoms, Zaidi is examining the role of calcium in the accelerated susceptibility of the olfactory system in PD. Her latest research could result in a very useful diagnostic tool for catching the disease early before irreversible brain damage occurs.

However, according to Zaidi, “her work is not limited to her bench.” Her passions extend to youth as well. As part of KCUMB’s Score 1 for Health program, Zaidi conducted a project with 20 eighth graders on the efficiency of common antacids, and she is collaborating with the biology department at William Jewell College to train undergraduate students as part of an R15 application to the National Institutes of Health.

Asma Zaidi, PhD, Professor of Biochemistry at Kansas City University of Medicine and Biosciences

Working Toward a World Without Cancer: MRIGlobal Marks Milestone of 43rd Year of Research for NCI

The National Cancer Institute (NCI) estimates that 1,638,910 Americans will be diagnosed with cancer this year. Some of the researchers supporting the NCI are right here in Kansas City at MRIGlobal.

This summer, MRIGlobal was awarded its 12th consecutive contract from the NCI to operate the Anti-Cancer Chemicals and Pharmaceutical Formulations Analysis Program. The contract marks 43 years of MRIGlobal’s operation of the program.

In those 43 years, MRIGlobal has completed more than 2,000 analytical reports on small organic molecules, complex antibiotics, proteins and other compounds.

MRIGlobal’s work entails analyses that support the development of anti-cancer chemicals and pharmaceuticals that are typically in pre-approval phases. Under the requirements of the U.S. Food and Drug Administration, MRIGlobal analyzes bulk pharmaceutical substances and formulated drug products. Among other complex technical tests, researchers use spectroscopy, chromatography, and electrochemical analyses to investigate these drugs.

That’s not all MRIGlobal does in cancer research. MRIGlobal holds a contract with the National Institutes of Health (NIH) Division of Cancer Prevention. MRIGlobal’s 90,000 square foot North Kansas City facility is home to the NIH Centralized Chemopreventative Agent Repository and Drug Chemistry Support program.

Under the 5-year, $28 million program, MRIGlobal performs analyses that support the development of anti-cancer chemicals and pharmaceuticals.

“Working toward a world without cancer is a big responsibility. We feel grateful for the opportunity to play a role in helping patients and researchers. The results of this program could be transformative,” said Roger K. Harris, Ph.D., MRIGlobal Associate Vice President and Director of Product Development and Repository Management.

The North Kansas City Repository for MRIGlobal is also responsible for acquiring, tracking, storing, researching, and distributing the agents.

“The chemopreventive agents to be tested are chemical and biological materials – investigational agents, drugs, drug products, active and inactive pharmaceutical ingredients – and ultimately will be formulated as drug products for human clinical trial use,” said Roger K. Harris, Ph.D., MRIGlobal Associate Vice President and Director of Product Development and Repository Management.

The North Kansas City Repository for MRIGlobal is also responsible for acquiring, tracking, storing, researching, and distributing the agents.

“Cancer research is one of MRIGlobal’s longest continually running programs,” Harris added.

MRIGlobal’s history book notes the Institute was doing cancer research almost a decade prior to the appearance of clinical symptoms, Zaidi is examining the role of calcium in the accelerated susceptibility of the olfactory system in PD. Her latest research could result in a very useful diagnostic tool for catching the disease early before irreversible brain damage occurs.

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Under the 5-year, $28 million program, MRIGlobal performs analyses that support the development of anti-cancer chemicals and pharmaceuticals.
The Kansas City Animal Health Corridor advisory board appointed Kostas Kontopanos as chairman and Scott Bormann as Vice Chairman, effective January 2013. Kontopanos, President of Hill’s Pet Nutrition succeeds Craig Wallace, Chief Executive Officer of Ceva Holdings Inc. Bormann is Vice President of U.S. Commercial Operations for Merck Animal Health.

Bayer HealthCare LLC is buying the U.S. animal health business of Teva Pharmaceutical Industries Ltd. in a deal valued around $145 million. The deal, announced September 14, includes a factory in St. Joseph with about 300 employees.

UMKC School of Nursing has received a three-year, $1.5 million federal grant to help improve medical services at two area community health clinics. The nursing school, working with UMKC’s dental and pharmacy schools, will create clinical teams of faculty and students from the three schools and members of the clinical staffs of Samuel Rodgers Health Center and Hope Family Health Center. The teams will work together to develop more comprehensive health care plans for patients at the clinics.

Overland Park-based Vince & Associates Clinical Research has received a five-year contract with the Food and Drug Administration that could be worth $5 million. The company will conduct so-called “bioequivalence” studies on generic and branded drugs, such as those treating epilepsy, to see if the substances used in each essentially are the same. This is the second contract announced in two weeks. On September 18, Vince & Associates reported a five-year, $9.7 million award from the National Institute of Drug Abuse of the National Institutes for Health to develop new medications to treat substance abuse.

There are many exciting research projects and innovators in our region, yet many of us remain unaware of their importance. Expert Exchange seeks to spread the news and put a face and voice to the powerful expertise making our region great. Discoveries in science and medicine are often made more quickly and the impact is greater if they are made through collaboration rather than individually. Similarly as we continue the regional development of Translational Research, collaboration in cross-functional areas is critical to accelerating innovations from bench to bedside. We hope you find this regular series informative, engaging and stimulating of collaborations that are possible in our region. We welcome your feedback and suggestions of experts we should highlight. The inaugural feature in this series is Dr. Stephen Kingsmore at Children’s Mercy Hospitals and Clinics.

View video »
KANSAS CITY UNIVERSITY OF MEDICINE AND BIOSCIENCES

Jeffrey N. Joyce, PhD joins KCUMB as Vice President for research. He comes to KCUMB from the Maricopa Integrated Health System (MIHS) in Phoenix, where he was Director of the Research Division since 2007. He also was appointed Research Professor of Neurology and Psychiatry at the University of Arizona College of Medicine – Phoenix and associate professor in the School of Biological and Health Systems Engineering at Arizona State University. Prior to his tenure at MIHS, Joyce served as Associate Director of Sun Health Research Institute in Sun City, Ariz., and Senior Scientist at Thomas H. Christopher Parkinson’s Disease Research Center. With expertise in central nervous system drug discovery, Joyce’s work has led to target development for drug discovery in both schizophrenia and Parkinson’s disease. He has been awarded more than 25 federal, state and pharmaceutical industry grants and has served on multiple review boards for National Institutes of Health and Veteran’s Administration. Joyce earned a Bachelor of Science in biology/pyschology cognate from the University of Illinois at Urbana-Champaign and a Doctor of Philosophy in physiological psychology from the University of Florida. He completed a postdoctoral fellowship at the University of California, Irvine.

Marc B. Hahn, DO, was appointed as KCUMB’s executive Vice President for Academic and Medical Affairs, Provost and Dean of the College of Osteopathic Medicine. Dr. Hahn formerly served as Senior Vice President for Health Affairs and Dean of the College of Osteopathic Medicine at the University of New England (UNE) since 2009. He also served on the UNE faculty as a professor of anesthesiology. Prior to his tenure at UNE, Dr. Hahn was Senior Vice President for Health Affairs at the University of North Texas Health Science Center at Ft. Worth and dean of the Texas College of Osteopathic Medicine. Dr. Hahn’s academic career is preceded by extensive clinical practice that began at Walter Reed Army Medical Center in Washington, D.C., as an anesthesiology intern and resident. He completed a fellowship in pain management at the National Institutes of Health and later became Chief of Pain Management Service at Walter Reed. He eventually served as chief of the Pain Medicine and Palliative Care Division at the Milton S. Hershey Medical Center in Hershey, Pa. A graduate of Syracuse University with a Bachelor of Science degree in biology, Dr. Hahn earned a Doctor of Osteopathic medicine from Des Moines University. He is board certified in anesthesiology by both the American Board of Anesthesiology and the American Osteopathic Board of Anesthesiology. He also holds sub-specialty board certifications in pain medicine by the American Board of Anesthesiology and the American Board of Pain Medicine and has served as anesthesiologist for two U.S. Presidents, Ronald Reagan and George H.W. Bush.

Robert W. Flaherty, PhD, was appointed as KCUMB’s Vice President for Institutional Effectiveness and Accreditation Compliance. He formerly served as Special Assistant to the President for Planning and Accreditation at Baker University. Prior to that, he was the Associate Dean of Baker University’s College of Arts and Sciences. He currently serves as a peer reviewer for the Higher Learning Commission, the accrediting body for higher education in the Midwest region. Flaherty holds a Bachelor of Science degree in psychology from the University of Washington and Master of Arts and Doctor of Philosophy degrees in social psychology from The Ohio State University. He also holds a Master of Business Administration degree from Baker University.

TRUMAN MEDICAL CENTER

Truman Medical Centers appointed Mark McPhee, MD, MHCM, as Senior Vice President of Clinical Coordination. In this role, Dr. McPhee will be responsible for direct oversight of nursing, behavioral health services, practice management and professional services. Prior to joining Truman Medical Centers, Dr. McPhee was a founding partner of Mid-America Gastro-Intestinal Consultants, GI Diagnostics and Plaza Gastroenterology Associates. He has also served as Chief Academic Officer, Chief Medical Officer/Vice President for Medical Affairs and as Senior Vice President and Chief Operating Officer of Saint Luke’s Health System in Kansas City, Mo.

MIRGLOBAL

John Barsa has joined MIRGlobal as Vice President of Government Relations. Barsa, formerly a consultant in private practice and principal of Barsa Strategies, will be responsible for expanding MIRGlobal’s presence in government business areas. Barsa previously worked as the Director, Public Liaison, in the Department of Homeland Security and in Business Development for General Dynamics, and in Intergovernmental Relations for the Battelle Memorial Institute. He formerly worked on Capitol Hill as a lobbyist for the Aerospace Industries Association.

Barsa has a degree in International Relations from Florida International University; he also has attended Syracuse University’s Maxwell School of Citizenship and Public Affairs and George Washington University’s Elliot School of International Affairs.

SAINT LUKE’S HOSPITAL

Leonardo J. Lozada, MD has been appointed Chief Physician Executive for Saint Luke’s Health System, effective November 12. Dr. Lozada will play a central role in alignment and integration strategies across the 11-hospital health system. He was previously Chief Medical Officer and Senior Vice President of Medical Affairs at Riverside Methodist Hospital in Columbus, Ohio. Prior to that, he was Chairman of the Department of Anesthesiology at Eastern Maine Medical Center, and was a staff neuroanesthesiologist and section head for anesthesiology for minimally invasive surgery at the Cleveland Clinic Foundation. He holds a Master in Business Administration degree from Duke University. Fellowship trained in neuroanesthesiology at the Mayo Clinic and the Cleveland Clinic Foundation, Dr. Lozada received his medical degree from Central University of Venezuela in Caracas.

Jani L. Johnson was recently appointed as President and Chief Executive Officer for Saint Luke’s South Hospital. Johnson’s career with Saint Luke’s Health System began as a staff nurse at Saint Luke’s Mid America Heart Institute. She was promoted to various management and senior director positions and in 2002 became Vice President of the cardiovascular service line for Saint Luke’s Health System and the Heart Institute. Johnson holds nursing degrees from Methodist School of Nursing in Omaha, Neb., and a Bachelor of Science in nursing from Webster University. She earned a Master of Nursing from the University of Missouri-Kansas City.

Katherine A. Howell, RN, BSN, MBA was named Senior Vice President and Chief Nurse Executive for Saint Luke’s Health System. She will be responsible for the structure and continued advancement of nursing practice across the health system. Howell joined Saint Luke’s Health System in 2001 and served in various leadership roles before she was named Saint Luke’s South Hospital Chief Executive Officer in 2009. She previously worked at Swedish American Health System in Rockford, Ill., and St. Joseph Medical Center in Wichita. She holds a Bachelor of Science in nursing from Marymount College and a Master in Business Administration from Northern Illinois University.

KANSAS STATE UNIVERSITY

Jim E. Riviere, DVM, PhD, DSc(hon), ATS represents Kansas State University’s first member of the National Academy of Sciences. Dr. Riviere was appointed as the McDonald Chair of Veterinary Medicine and University Distinguished Professor of Anatomy and Physiology at K-State. He previously served as (continued on page 15)
the Burroughs Wellcome Fund Distinguished Professor of Pharmacology and the director of the Center for Chemical Toxicology Research and Pharmacokinetics at North Carolina State University. His work looks at risk assessment of chemical mixtures, absorption of drugs and chemicals across skin, and the food safety and pharmacokinetics of tissue residues in food producing animals. Riviere holds six patents, has authored/edited 10 books and 490 scholarly publications in pharmacokinetics, toxicology and food safety, and received more than $19 million as principal investigator on extramural research grants. He is a fellow of the Academy of Toxicological Sciences, a member of Phi Beta Kappa, Phi Zeta and Sigma Xi honoraries, and has served on the Science Board of the Food and Drug Administration. He currently is chair of the Institute of Medicine’s Committee on Strengthening Core Elements of Regulatory Systems in Developing Countries. He is also a member of the Kansas City Area Life Science’s Scientific Advisory Committee. Among his honors are the 1991 Ebert Prize from the American Pharmaceutical Association, the Harvey W. Wiley Medal and FDA Commissioner’s Special Citation, and the Lifetime Achievement Award from the European Association of Veterinary Pharmacology and Toxicology. The editor of the Journal of Veterinary Pharmacology and Therapeutics, Riviere is co-founder and co-director of the USDA Food Animal Residue Avoidance Databank – or FARAD – program. He served as Director of North Carolina State University’s Graduate Program in Biomathematics. Riviere earned his Bachelor of Science in biology summa cum laude and a Master of Science in endocrinology with distinction from Boston College. He earned a DVM and a PhD in pharmacology from Purdue University. He was awarded an honorary DSc from Purdue in 2007.

Nancy Monteiro-Riviere, PhD joins K-State University as Regents Distinguished Research Scholar, College of Veterinary Medicine and University Distinguished Professor of Anatomy and Physiology. She is a world leading researcher in absorption of chemicals and nanomaterials through skin. She holds two patents, has authored two books and 286 publications, manuscripts and book chapters in the fields of skin toxicology, nanotechnology and nanomaterials. She also is a fellow of the Academy of Toxicological Sciences and was recently elected to the academy’s board of directors. At North Carolina State University, she was a professor of investigative dermatology and toxicology in the Center for Chemical Toxicology Research and Pharmacokinetics in the department of clinical sciences. Dr. Monteiro-Riviere is a member of Sigma Xi and Phi Zeta honor societies. She received the inaugural Purdue University Distinguished Women Scholars Award in 2011. She served on the NIEHS Scientific Advisory Committee on Alternative Toxicological Methods, on the International Council on Nanotechnology, as well as a NATO workshop on nanomaterial risk assessment. She was selected to participate in the National Academy of Sciences Keck Future’s Initiative Workshop on Nanoscience and the National Research Council’s committee reviewing the federal strategy on environmental health and safety research needs of engineered nanoscale materials. She serves on numerous editorial boards for journals in the fields of toxicology, nanotoxicology, nano-medicine and transdermal drug delivery. She earned her Bachelor of Science in biology cum laude from Stonehill College and her Master of Science and Doctor of Philosophy in anatomy and cell biology from Purdue University. She completed two years of postdoctoral work at the Chemical Industry Institute of Toxicology Centers for Health Research in Research Triangle Park, N.C.

Patrick Williams, PhD, Research Assistant Professor, joins Kansas State University with more than 20 years of experience in the development of new analytical methods and instruments for bio-molecular testing. He is currently working on the development and validation of new assays for foodborne pathogens and emerging animal diseases based on the use of LAMP and HyBeacons Probe technology. This research includes innovative sample preparation chemistries and PCR based assays for the traditional foodborne pathogens, as well as new assays for juice and wine spoilage organisms. In addition to these projects, Dr. Williams has worked on the AOAC National Committee for Bio-Threat Agents. He was recently designated a Kansas Public Health Leadership Scholar with the Kansas State Public Health Leadership Institute. In this role, he has been involved in the study and development of new policies related to food safety and public health. Dr. Williams has provided technical leadership as the branch chief of the Armed Forces DNA Technology Development Program of the Armed Forces Institute of Pathology, served on the National Scientific Review Board for the Human Genome Project and numerous NIH Study Sections on technology development. In addition, he has directed scientific research programs for the development of equestrian immunoassays to environmental agents and biological toxins. Dr. Williams conducted research on heavy metals for the EPA, the USDA, 3M, and the DoD. Dr. Williams has worked on the editorial board of the Journal of Applied and Theoretical Electrophoresis and is a member of the American Chemical Society, the American Society of Microbiology, the International Association of Food Protection, and the American Society of Parasitology.

CRITITECH
Matthew McClurey has been named Chief Operating Officer, and will be responsible for the daily operations of CritiTech and help develop and implement the company’s long-term growth strategy. Since 2010 McClurey was the president of the Bioscience and Technology Business Center (BTBC) at the University of Kansas, a KU-based high-tech business incubator network that includes four facilities and 24 total companies in Lawrence and Kansas City. Under his leadership, the BTBC added 24 companies, including household names like Garmin, Archer Daniels Midland and Assurant, as well as growth companies like Propylon, BrightEHR and Mencuro Therapeutics. McClurey is also the co-founder of Mid-America Angels, a Kansas City-based angel investor network that has attracted approximately 95 high-net worth individuals as members and has invested nearly $10 million in regional companies since its inception five years ago. Prior to joining the BTBC, he was president and Chief Executive Officer of the Lawrence Regional Technology Center (LRTC) whose clients raised over $180,000,000 in early stage capital during his tenure. McClurey came to the LRTC having held positions at the Kansas Technology Enterprise Corporation where he was the vice president of portfolio management and Deloitte Consulting where he was a senior consultant providing strategy consulting services to Fortune 1000 companies. McClurey received his J.D. and M.B.A. from the University of Kansas and his B.A. in Business from Benedictine College.

Gary E. Clapp PhD has been named Vice President of Technical Operations. He will help the company manage its drug development and production operations. Clapp comes to CritiTech from the Institute for Industrial and Applied Life Sciences (“IIALS”) where he served as President and Chief Executive Officer. At IIALS, Clapp worked with numerous life sciences companies helping them successfully transition from research and development focused operations to fully compliant drug development operations. Clapp has extensive expertise and a successful track record in planning, building and managing pharmaceutical development and laboratory operations in regulated environments. He has demonstrated the ability to design, build, validate, and expand laboratory and development operations that must perform in the highly regulated FDA, cGMP/GLP environments. He also has been working extensively with new and emerging pharmaceutical organizations as they plan their growth expansions. Clapp received a BS/ACS in Chemistry from Mankato State University and a PhD in Chemistry from Oregon State University.
Where is the U.S.A. Companion Animal Market Going? Drivers, Trends, Key Issues, and Opportunities Shaping the U.S.A. Companion Animal Industry
Date: Oct. 22, 2012
Time: 8:30 a.m. - 12:30 p.m.
Location: K-State Olathe
Register »

Producers, Animals, and Consumers: Animal Welfare in U.S. Food Animal Production
Date: Oct. 22, 2012
Time: 1:30 p.m. - 5 p.m.
Location: K-State Olathe
Register »

Midwest Energy Conference
Date: Oct. 23 – 25, 2012
Location: Kansas City Convention Center
Register »

KCUMB Research Symposium
Date: November 1, 2012
Time: 10:30-11:30am
Location: Weaver Auditorium
Keynote: Diane Harper, MD, MPH, MS
More information »

BioResearch Central Summit
Date: Nov. 15, 2012
Location: The Ritz Charles Conference Center
Register »

2012 Clinical Advances in Pediatrics
Date: Nov. 13-16, 2012
Location: Children’s Mercy Hospital, Kansas City, MO
More information »

KCALSI Annual Dinner
Date: May 7, 2013
Location: Sheraton Kansas City Hotel at Crown Center
More information »