Health Discoveries Transcend Species, Provide Entrepreneurial Opportunities

Mizzou Advantage will expand pioneering work in the convergence of human and animal health

July 22, 2010

Story Contact(s): Kelsey Jackson, JacksonKN@missouri.edu, (573) 882-8353

COLUMBIA, Mo. —Whether initially developed for humans or animals, new health technologies often benefit more than one species. In the last few years, University of Missouri researchers have discovered that a genetic mutation responsible for a disease in dogs is the same mutation that causes Lou Gehrig's Disease in humans, they also have developed biological joints for dogs that use living tissue that can also be used in humans, and used a common method in human medicine to treat eye tumors in horses' eyes. Discoveries such as these improve the quality of health for both humans and animals and often lead to innovative entrepreneurial opportunities.

Identified as an initiative in the Mizzou Advantage, "One Health, One Medicine: The Convergence of Human and Animal Health" will expand on MU's pioneering work in the convergence of human and animal health and connect it with research and instruction in health care delivery, health policy, medical ethics, health care business models and the culture of healthy living. During a three-year process, MU faculty, students and alumni identified MU's top competitive assets, or unique strengths, that set MU apart from other universities. These assets underlie five dynamic initiatives that collectively are called the Mizzou Advantage. Carolyn Henry, the facilitator for the One Health, One Medicine, believes the initiative will provide a forum for intensive interactions among campus faculty to facilitate new collaborations.

"This is an excellent opportunity to create an environment that will foster transformational research in animal sciences, laboratory animal, veterinary and human medicine, bioengineering, social sciences, health policy, bioinformatics, the MU Research Reactor, the Bond Life Sciences Center and the Dalton Cardiovascular Science Center, just to name a few," Henry said. "The list is quite literally limited only by our imagination. Growth in these areas will spur economic development, create new business related to biotechnology, deliver unique services to Missouri and improve the level of health research at MU."

MU has budgeted $6 million to increase the impact of the Mizzou Advantage by funding various projects driven by networks of collaborators, including faculty members, centers, departments, corporate partners and other universities.

An example of one of the projects is the "Clinical Interaction between Stress, Diet, Genetics and Inflammation in the Etiology of Autism." Led by David Beversdorf, Matthew Will and Kevin Fritsche, the project will examine prenatal stress and diet, genetic stress markers, fatty acid profile and immunological markers in families of children with autism and families of children without autism. The researchers hope their cross-disciplinary research will yield a better understanding of the possible causes of autism.

"The animal model used in this study will help us advance the knowledge of autism in humans," Beversdorf said. "We expect to generate important data from this project and have a better understanding of what interventions could prevent this disorder."

Another Mizzou Advantage-funded project is "A 21st Century Program in Cancer Research: Targeting Metastatic Cancer Cells to Improve Diagnosis and Therapy." The research aims to better understand the process that allows tumor cells to become metastatic. Faculty members from the College of Engineering, Department of Statistics, Bond Life Science Center, School of Medicine and Department of Biological Sciences will collaborate on this project.

"This study will result in a greater understanding of metastatic disease and may provide the means for personalized cancer therapy," said Paul Dale, professor of clinical surgery.
In addition, Henry believes Mizzou Advantage will lead to unique, cross-disciplinary degree and certificate programs that will give students a lead in the job market.

"Students are going to benefit by getting broader exposure to multiple fields and industries," Henry said. "Mizzou Advantage will provide opportunities for expanded course offerings that will give students huge payoff in the future."

The Mizzou Advantage was created to increase MU's visibility, impact and stature in higher education, locally, statewide, nationally and around the world. An important first step in initiating the program is a round of grants, totaling more than $900,000, that will fund 26 networking and other projects. MU officials' goal is that Mizzou Advantage will strengthen existing faculty networks, create new networks and propel Mizzou's research, instruction and other activities to the next level.

http://munews.missouri.edu/news-releases/2010/0722-health-discoveries-transcend-species-provide-entrepreneurial-opportunities/