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Making Strides in Arthritis Research

By Jeremy Diener

The Comparative Orthopaedic Laboratory at the University of Missouri-Columbia recently received nearly \$820,000 from two donors to fund the groundbreaking arthritis research conducted at the lab. Researchers at the lab have developed several unique models that allow in-depth study of arthritis without the need for using research animals.

The first gift is an unrestricted gift from the Iams Company. It will fund a research assistant professor position at the lab.

"This gift is absolutely vital to our growth and success," said James Cook, director of the lab, professor of veterinary medicine and surgery, and William C. Allen Endowed Scholar for Orthopaedic Research. "We have chosen to use the money to fund a research assistant professor who will focus on understanding and diagnosing arthritis toward finding a cure. The position is at the heart of the lab's mission and work, and allows us to really be on the leading edge of orthopaedic research."

The Iams gift, which totals \$461,203, will be split into payments made over a five year period. Iams, a division of Procter & Gamble and a leading provider of pet foods and pet care products, became interested in supporting the Comparative Orthopaedic Laboratory because of the lab's use of in-vitro models for the study of osteoarthritis — a method that avoids the use of research animals while still offering useful, relevant and timely data.

"The Comparative Orthopaedic Laboratory's in-vitro methods are at the forefront of medical science both in the potential for developing pet foods that might alleviate the pain of arthritis as well as in the breakthrough it represents for making progress without animal testing," said Allan Lepine, a nutritionist with Iams.

The second gift, \$320,000 from Robert and Judi Reeves of Columbia, will establish the Robert and Judi Reeves Endowment in Arthritis Diagnostics. It will fund projects, personnel and equipment directly related discovering ways to diagnose arthritis before it is symptomatic and while it is still reversible or curable, Cook said.

"We already are working on these projects by trying to find molecular and imaging markers that tell us if arthritis is going to occur, what joints it will involve, and how bad it will be," Cook said. "This is very exciting work as it could completely revolutionize medicine and treatment of arthritis."

One of the major benefits of the endowment, Cook said, is that it will help fund preliminary work that researchers hope will lead to larger grants. The lab is one of only a handful of comparative orthopaedic laboratories in the world dedicated to arthritis research.

Robert Reeves said he and his wife wanted to establish the endowment because the research conducted in the lab has the ability to cause sweeping changes in diagnosis and treatment of arthritis. He feels that the team of researchers in the lab are highly motivated to succeed.

"I feel like they are excited about their work," Reeves said. "They are doing



The Robert and Judi Reeves' gift supports projects dedicated to discovering ways to diagnose arthritis before it is symptomatic. Above are members of the Reeves family and Comparative Orthopaedic Laboratory Director James Cook, fourth from left. *Randy Mertens photo*



excellent work in several areas, but two really stand out. First, they're making progress toward the longer-term goal of growing tissue to use in arthritis treatment rather than using metal. Second, and more applicable now, is their work at the molecular level to help in diagnosing arthritis extremely early. That has the potential to help millions of people."

Cook said the laboratory is one of only a handful of labs in the world that uses a comparative approach to develop and test in-vitro models for osteoarthritis that mimic the disease as it occurs in real life in people and animals.

"Osteoarthritis in dogs applies well to humans because the same changes are seen in both species on all levels; it just happens faster in dogs," Cook said. "This is a major advantage in that we can compress the time frame for finding answers. The dog has been used as the model for human osteoarthritis for at least four decades and has been validated to be a good model. The great thing is that we can use dog cells and tissues from the model and apply them directly to both humans and dogs for clinical implications."

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