Charles A. O'Brien, Ph.D.

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Dr. O'Brien received his doctorate in Microbiology and Immunology from the University of Oklahoma Health Sciences Center in 1990 and completed postdoctoral training in the Department of Cell Biology at Yale University. He joined the Division of Endocrinology in the UAMS College of Medicine in 1994.

The primary focus of Dr. O'Brien's laboratory has been to understand the cellular and molecular mechanisms that control bone remodeling, especially in conditions such as glucocorticoid excess and aging. Most recently, the team's efforts have focused on osteocytes. Dr. O'Brien and colleagues have found that osteocytes produce RANKL, a factor that is essential for the differentiation of osteoclasts. Therefore, changes in RANKL production may be important for different types of pathological bone loss.

In all of these studies, Dr. O'Brien's lab utilizes genetically-modified mice, which have become an area of particular expertise. He has directed the UAMS Transgenic Mouse Facility since 2004. Dr. O'Brien has designed and generated transgenic mice since 1997, gene-targeted mice since 2004, and gene-edited mice since 2014. This core has produced over 300 founder mice from more than 40 different DNA constructs and provides other essential services related to the maintenance of genetically-modified mouse strains.

Another major focus for Dr. O'Brien is the development and mentoring of junior faculty. The division has a strong record of helping early-stage investigators develop productive programs and achieve independent federal funding. In 2018, Dr. O'Brien received P20 funding from NIH/NIGMS to expand these efforts and to develop a new Center for Musculoskeletal Disease Research, which he directs.

Dr. O'Brien has been continuously funded as a Principal Investigator by the NIH since 1998 and by the Veteran's Administration since 2009. He has published 87 peer-reviewed papers and has a GoogleScholar h-index of 57.

Complete list of published work also in GoogleScholar:

https://scholar.google.com/citations?user=Z0VRQHQAAAAJ&hl=en