

# SEMINAR SERIES

Supported by The Department of Biomechanics and  
The Center for Research in Human Movement Variability (MOVCENTR)



## Porcine Models of Pancreatic Cancer

Featuring Dr. Mark A. Carlson  
University of Nebraska Medical Center



Friday, Feb. 18 | 12:00 - 1:15 pm | Via Zoom

<https://unomaha.zoom.us/j/92012305734>

### PRESENTATION ABSTRACT

The rationale for large animal cancer models is to have platforms for diagnostic/therapeutic device development otherwise not achievable in murine models; and (2) to have a highly-predictive preclinical models in which anti-cancer therapies could be vetted/optimized prior to a clinical trial. The advantage of using swine for cancer modeling is that this species mimics human genomics, epigenetics, physiology, metabolism, inflammation and immunology, and size remarkably well (in particular, better than mice), with reasonable compromises towards cost and husbandry. Recently, a porcine genome map was generated, and further coverage, annotation, and confirmation is ongoing. Genetic manipulation of pigs (including knockouts, tissue-specific transgenics, inducible expression) with similar tools as used in the mouse is becoming more routine, with new gene-edited porcine models continually emerging. The pig has a proven track record in biomedical research as a mimic of human biology (in particular, superior to rodents) and is relatively close to human size, all of which makes the pig favorable for cancer modeling.

### ABOUT DR. CARLSON

Dr. Carlson is a Professor of Surgery at the University of Nebraska Medical Center in Omaha, Nebraska, with a courtesy appointments in the Department of Genetics, Cell Biology and Anatomy, and an adjunct appointment in the Department of Biomechanics at the University of Nebraska at Omaha. He also has a part-time appointment in the Surgery Department at the Omaha VA Medical Center. Dr. Carlson is Principal Investigator of federally-funded research laboratories at UNMC and the OVAMC, performing basic and preclinical research on solid tumors, limb ischemia, hemostasis, wound healing, and biomaterials, with interest in the use of large animal models. In addition, Dr. Carlson is the Director of UNMC's Center for Advanced Surgical Technology (CAST), which focuses on developing novel surgical technologies for the clinic, along with research in education, training, and surgical outcomes. Dr. Carlson received an MD from Case Western Reserve University in 1989, and then completed a residency in General Surgery at the Medical College of Wisconsin in 1995. He then went on to complete two Fellowships, one in Minimally Invasive Surgery at MCW in 1996 and then one in Wound Healing at the University of Texas Southwestern Medical Center in 1999. Dr. Carlson is an active surgeon whose clinical interests include Minimally Invasive Surgery, Foregut Surgery, Abdominal Wall Reconstruction, Colorectal Surgery, and Emergency General Surgery.

more info at [cobre.unomaha.edu](http://cobre.unomaha.edu)

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