

SEMINAR SERIES

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ELASTIN, ARTERIAL MECHANICS, AND STENOSIS

Featuring Dr. Jessica Wagenseil
Washington University



Friday, Feb 4 | 12:00 - 1:15 pm | BRB 167

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

PRESENTATION ABSTRACT

Elastin is an extracellular matrix protein responsible for elastic recoil in the large arteries. Mutations in the elastin gene cause functional haploinsufficiency leading to supravalvular aortic stenosis (SVAS). Features of SVAS include focal aortic narrowing (stenosis), increased arterial stiffness, and hypertension. Mouse models of SVAS have been developed to study disease mechanisms, progression, and possible treatments. This talk will present work in mouse models with reduced elastin levels investigating the interplay between elastin amounts, arterial stiffness, and hypertension, one of the main cardiovascular risk factors associated with SVAS. Data on hemodynamic interventions to alter arterial stiffness and associated wall remodeling will also be discussed. Lastly, recent work on cell-type specific elastin contributions to stenosis formation will be presented.

ABOUT DR. WAGENSEIL

Jessica Wagenseil, D.Sc. is a Professor of Mechanical Engineering and Materials Science at Washington University. Dr. Wagenseil studies cardiovascular mechanics, specifically focusing on cardiovascular development, extracellular matrix and microstructural modeling. Her work is important for determining clinical interventions for elastin-related diseases and for designing better protocols for building tissue engineered blood vessels. Her work has been funded by the National Institutes of Health, National Science Foundation, American Heart Association, and the Marfan Foundation. She received the American Society for Matrix Biology Iozzo Award for Mid-Career Investigators in 2020. She is also the Vice Dean for Faculty Development and the Associate Chair of the Diversity, Equity, and Inclusion Committee at the McKelvey School of Engineering.

more info at cobre.unomaha.edu

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