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INM COLLOQUIUM

"MEMBRANE DOMAIN BIOGENESIS AND FUNCTION"

Prof. Dr. Anne Kenworthy
University of Virginia School of Medicine, Charlottesville, USA

Tuesday, May 21, 2019, **2:15 pm**

INM, Leibniz-Saal, Campus D2 5
Host: Prof. Dr. Niels de Jonge

Membranes are a defining feature of cells and can be exploited in a variety of technological applications. While all membranes share a characteristic bilayer morphology, their lateral organization can be surprisingly complex. The mixtures of lipids and proteins found in biological membranes, for example, often self-assemble laterally to generate a variety of higher order complexes and domains ranging from nanometers to microns in size. However, the underlying principles that govern the assembly and function of these structures remain enigmatic. Our group is addressing this gap in knowledge using a variety of biophysical, biochemical, and cell biological approaches through studies of two related yet distinct classes of membrane domains: membrane rafts and caveolae. Both caveolae and rafts are localized within the plasma membrane of cells, form in a cholesterol-dependent manner, regulate a variety of cellular processes, and are linked to human disease. Yet, rafts are small, dynamic, and lipid-based, whereas caveolae are long-lived, morphologically well-defined, and built from specific protein components. In this talk, I will discuss our recent efforts to understand how these intriguing nanodomains form and function at the cellular level, including how they are exploited by pathogens to gain entry into cells, the structural basis of caveolae assembly, and our search for new approaches to pharmacologically manipulate rafts.

SHORT BIO

Dr. Anne Kenworthy received a B.A. in Biology from Kenyon College in 1989 and Ph.D. from the Department of Cell Biology at Duke University Medical Center in 1994. After completing postdoctoral fellowships at The Johns Hopkins University and the National Institutes of Health, in 2001 she joined the faculty in the Department of Molecular Physiology and Biophysics at Vanderbilt University School of Medicine where she rose through the ranks to full Professor. In 2018 she moved her laboratory to the University of Virginia School of Medicine where she currently serves as Professor and Associate Director of the Center for Membrane and Cell Physiology. Dr. Kenworthy's research is focused on understanding the structure, dynamics, and function of caveolae and lipid rafts in cell membranes. Toward this goal, her group has developed quantitative approaches to study membrane domains and protein and lipid dynamics in cells using live cell imaging. She has also served the scientific community at large through her roles as a Permanent Member and Chairperson of the Biochemistry and Biophysics of Membranes Study Section at NIH, Co-Chair of the Program Committee of the 62nd Annual Meeting of the Biophysical Society, and Associate Editor of Cell Biophysics at Biophysical Journal.

You are invited to have coffee with the speaker 15 minutes before the talk starts.

SFB 1027

KONTAKT

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