

UT Southwestern Medical Center

New National Academy Members

April 27, 2020

To the UT Southwestern Community:

It is my privilege and pleasure to announce the election today of Drs. Sean Morrison, Kim Orth, Michael Rosen, and Sandra Schmid to the National Academy of Sciences (NAS), one of the highest honors attainable by American scientists. Their election is also an unprecedented honor for UTSW, since this is the first time we have had more than two faculty elected in the same year.

Dr. Sean Morrison is Director of the Children's Medical Center Research Institute at UT Southwestern and Professor of Pediatrics, and he holds the Kathryne and Gene Bishop Distinguished Chair in Pediatric Research at Children's Research Institute at UT Southwestern and the Mary McDermott Cook Chair in Pediatric Genetics. He is known for his significant discoveries in stem cell biology, particularly at its interface with cancer. The Morrison laboratory studies the mechanisms that maintain stem cell function in adult tissues and the ways in which cancer cells hijack these mechanisms to enable neoplastic proliferation. A better understanding of these mechanisms offers the potential to yield new regenerative medicine and cancer therapies. Dr. Morrison is a Howard Hughes Medical Institute (HHMI) Investigator, and he was elected to the National Academy of Medicine in 2018.

Dr. Kim Orth is Professor of Molecular Biology and Biochemistry, and she is a W. W. Caruth, Jr. Scholar in Biomedical Research and holds the Earl A. Forsythe Chair in Biomedical Science. She is also an HHMI Investigator whose discoveries have advanced the understanding of the basic biochemical mechanisms underlying many bacterial infections by identifying new ways that invading bacteria hijack and deregulate a cell's signaling systems. The Orth lab studies how pathogens manipulate host cells for their own benefit and survival. In a study on the *Vibrio parahaemolyticus* bacterium that causes foodborne illness, she showed that the microbe injects a toxin into host cells that remodels the cell's membrane structure, causing it to engulf the bacteria. Once inside, bacteria grow and divide until the host cell ruptures.

Dr. Michael Rosen is Professor and Chair of Biophysics and holds a secondary appointment in the Cecil H. and Ida Green Comprehensive Center for Molecular, Computational, and Systems Biology. He holds the Mar Nell and F. Andrew Bell Distinguished Chair in Biochemistry and is also an HHMI Investigator. His research helped determine how cells compartmentalize processes without the use of membranes. These phase-separated structures are involved in many cellular mechanisms in health and in disease,

and represent a fundamental process of protein phase transitions within the cell. His lab uses biophysical techniques to understand the formation, regulation, and functions of biomolecular condensates – cellular compartments that concentrate much like the way oil and water droplets separate in a flask.

Dr. Sandra Schmid is Professor and Chair of Cell Biology and holds the Cecil H. Green Distinguished Chair in Cellular and Molecular Biology. She is internationally recognized for her research on endocytosis – how cells take in nutrients and other molecules. She studies the molecular mechanisms and regulation underlying clathrin-mediated endocytosis, the major pathway for uptake into the cell and a critical regulator of cell-cell and cell-environment communication. A pioneer in defining the GTPase dynamin as a catalyst of membrane fission, Dr. Schmid recently discovered isoform-specific functions of dynamin that are activated in cancer cells.

The National Academy of Sciences is a private, nonprofit institution that recognizes achievement in science by election to membership, and – with the National Academy of Engineering and the National Academy of Medicine – provides science, engineering, and health policy advice to the federal government and other organizations.

We are honored that the National Academy of Sciences has recognized the importance of these faculty members' research in stem cells, cancer biology, microbial pathogens, biophysics, and fundamental cellular processes.

With today's elections, UT Southwestern Medical Center is now the proud home of 25 members of the prestigious National Academy of Sciences – a distinction reserved for only the most elite academic medical centers.

Please join me in congratulating our esteemed colleagues on this exciting news.

Daniel K. Podolsky, M.D.
President, UT Southwestern Medical Center