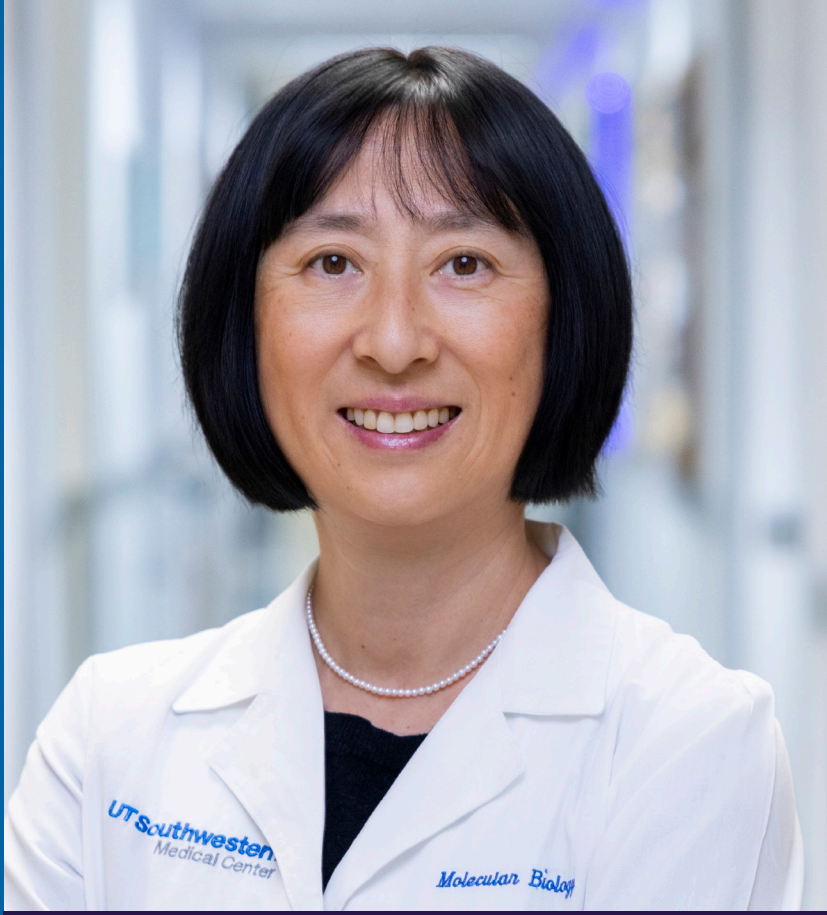
PRESIDENT'S LECTURE SERIES



Elizabeth Chen, Ph.D.

How Two Cells Become One

Thursday, Feb. 26, 2026
4 p.m. Lecture, Reception to Follow
Tom and Lula Gooch Auditorium
utsouthwestern.edu/pls

UT Southwestern
Medical Center

ABOUT THE PRESIDENT'S LECTURE SERIES

The President's Lecture Series was established to recognize the importance of UT Southwestern staff in enabling the Medical Center to achieve its mission and goals. The faculty excels in education, research, and patient care only with the contributions of staff, whose work, directly and indirectly, supports faculty endeavors.

The lectures selected for this series provide an opportunity for the employees of UT Southwestern to learn more about the research discoveries, clinical advances, and other contributions of the Medical Center's most accomplished scientists, physicians, and senior leaders. Three times each academic year, leading experts present a President's Lecture, discussing in nontechnical terms the basics of their research and clinical programs and their implications for good health and medical care.

The President's Lecture Series is offered in appreciation and respect for the work and dedication of UT Southwestern staff.

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

ABOUT THE LECTURE

During her talk, Elizabeth Chen, Ph.D., Professor of Molecular Biology and Cell Biology, will trace her groundbreaking work uncovering the molecular choreography of cell-cell fusion – a process essential for conception, placental formation, immune defense, bone remodeling, and skeletal muscle development and regeneration. From revealing how fusion partners build actin-driven projections to bring their membranes together to demonstrating that the same fusion machinery operates from fruit flies to zebrafish and mice, Dr. Chen's research is redefining how scientists understand this fundamental biological event and its role in disease.

Cell-cell fusion – in which two or more cells merge into one – is necessary both for life itself and continued good health. For example, sperm and egg fuse at conception; the outer lining of the placenta is one giant cell created from the fusion of billions of cells; and muscle fibers form through the fusion of hundreds or thousands of precursor cells called myoblasts.

While the products of these fusion events were known to scientists for decades, exactly how cells fuse had largely remained a mystery. Over the course of her career, Dr. Chen has sought answers to the myriad scientific questions about cell fusion, helping to elucidate the molecular mechanisms behind the process across multiple model systems as well as how it can go awry in several diseases.

Over the past decade, she has uncovered how the invading fusion partners make projections at the fusogenic synapse by strengthening their actin cytoskeleton using a protein called dynamin. She and her colleagues have subsequently uncovered the choreographic steps in generating the projections.

"Studies in my lab are mainly curiosity driven. But they also inevitably have disease connections, because defects in myoblast fusion and other cell fusion events would result in conditions such as congenital myopathy, infertility, and osteopetrosis," Dr. Chen said. "Our hope is that eventually, we will not only understand the mechanisms of cell fusion, but also provide new therapeutic options for these conditions."

ABOUT THE SPEAKER

Elizabeth Chen, Ph.D., Professor of Molecular Biology and Cell Biology, has had a long-standing interest in cell-cell fusion, which is essential for fertilization, skeletal muscle development, bone resorption, immune response, placental formation, and stem cell-mediated tissue regeneration. Understanding the underlying mechanisms of cell fusion could ultimately aid in the development of new therapies for various diseases, including congenital myopathies, infertility, osteopetrosis, immune disorders, and cancer.

Her lab has discovered the asymmetric fusogenic synapse as a conserved and general cellular structure mediating muscle cell fusion in flies, zebrafish, and mice, as well as the fusion of nonmuscle cells. Using a multifaceted approach including genetics, cell biology, biochemistry, and biophysics, her lab has also uncovered novel mechanisms underlying actin dynamics, actin bundling, invasive protrusion formation, and mechanobiology.

Dr. Chen and her research team have established a new conceptual framework for cell-cell fusion and advanced our understanding of this important cellular process in the development, regeneration, and physiology of multicellular organisms.

Her honors include the WICB Mid-Career Award for Excellence in Research from the American Society for Cell Biology (ASCB) and the National Established Investigator Award from the American Heart Association. In addition, she was a Searle Scholar, a David and Lucile Packard Fellow, and a Howard Hughes Medical Institute Faculty Scholar. She was elected as an ASCB Fellow in 2022 and as ASCB President for 2027.

Dr. Chen received her undergraduate degree in biology from Peking University and her Ph.D. in developmental biology from Stanford University. She was a Helen Hay Whitney postdoctoral fellow in the laboratory of Eric Olson, Ph.D., Chair of Molecular Biology at UTSW, where she initiated her independent project investigating the mechanisms underlying cell-cell fusion. Dr. Chen is a member of both the Hamon Center for Regenerative Science and Medicine and the Harold C. Simmons Comprehensive Cancer Center.

ABOUT THE NEXT SPEAKERS

Thursday, Apr. 16, 2026

Deborah Farr, M.D., Associate Professor of Surgery, and **Heather McArthur, M.D., M.P.H.**, Professor of Internal Medicine, member of the Division of Hematology and Oncology, and Clinical Director of the Breast Cancer Program in the Harold C. Simmons Comprehensive Cancer Center, share a singular mission: delivering exceptional care and advancing treatment for patients facing breast cancer.

Dr. Farr, a surgical oncologist, focuses her research interests on surgical resident education and disparities among different populations of breast cancer patients. She has published several scholarly articles, and her accolades include membership in the Alpha Omega Alpha Honor Medical Society; nomination to the Association for Women Surgeons Excellence in Surgery Residency; and the Southern Illinois University Department of Surgery's Excellence in Teaching Award for four years in a row.

She earned her M.D. at Michigan State University College of Human Medicine, and she completed a surgery residency at Southern Illinois University and a breast surgical oncology fellowship at Northwestern University's Lynn Sage Comprehensive Breast Center. She also holds a bachelor's degree in biochemistry, with honors, from Northwestern University.

Dr. McArthur, a medical oncologist, holds the Komen Distinguished Chair in Clinical Breast Cancer Research. She focuses on innovations in the diagnosis and treatment of breast cancer and has a special interest in developing immunotherapy strategies. She also has held several leadership positions in the field and serves on various committees.

Originally from Canada, she received her bachelor's degree from the University of British Columbia in Vancouver. She earned her M.D. at the University of Toronto and completed internal medicine residency training at the University of Calgary. She then received advanced training through a medical oncology fellowship at the University of British Columbia and an advanced clinical research fellowship in breast cancer at Memorial Sloan Kettering Cancer Center in New York. Dr. McArthur also holds an M.P.H. with a focus on clinical trial design from Harvard University.