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News Release

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German Joins TTUHSC's Growing List of Senior Members for National Academy of Inventors

Neuroinflammation, a swelling of brain tissue increasingly associated with Alzheimer's and Parkinson's disease, can limit blood flow to areas in the brain. This disruption in blood supply to the brain can inhibit the body's natural disease-fighting mechanisms and has been linked to dopamine, a key chemical messenger of the nervous system.

There is increasing interest in determining whether modulating dopamine levels at the inflammation site can stop or even reverse neurodegeneration. To help make that determination, Nadia German, Ph.D., director of the Medicinal Chemistry program at the Texas Tech University Health Sciences Center (TTUHSC) Jerry H. Hodge School of Pharmacy, and former TTUHSC Department of Pharmaceutical Sciences colleague Constantinos Mikelis, Ph.D., received a U.S. patent in 2022 for a chemical that targets the brain's dopamine transporter (DAT), one of the ways by which dopamine levels in the brain can be controlled.

To recognize this and other significant contributions to biomedical science and engineering, German has been named to the National Academy of Inventors (NAI) 2025 class of Senior Members. She will be inducted June 23-26th during the Senior Member Induction Ceremony at NAI's 14th Annual Conference in Atlanta.

The NAI is a member organization comprising U.S. and international universities and governmental and non-profit research institutes with more than 4,600 individual inventor members and Fellows spanning more than 260 institutions worldwide. The 2025 class of Senior Members is comprised of 162 emerging inventors from NAI's Member Institutions. It represents the largest class of NAI Senior Members to date who come from 64 NAI Member Institutions across the nation. Combined, they are named inventors on more than 1,200 U.S. patents.

During her career, German has received several patents with the Texas Tech University System and another she received before coming to TTUHSC.

"At TTU and TTUHSC, I have two major families of patents: compounds to treat pain and compounds to treat neuroinflammatory conditions and cancer," German added.

In addition to her patents, German was among 21 researchers and companies selected in 2023 to join the Accelerator for Cancer Therapeutics, a Texas Medical Center Innovation (TCMi) program that supports investigators and early-stage biotechnology companies conducting innovative and novel work in cancer

therapeutics. The nine-month Accelerator for Cancer Therapeutics program is funded by the Cancer Prevention and Research Institute of Texas and partners with the Gulf Coast Consortia and the University of Texas Medical Branch.

German's TCMi project focused on developing a small molecule treatment for triple-negative breast cancer and translating cancer therapeutics from the preclinical to clinical phases of development. In short, she identified a class of polypharmacology compounds with selectivity to cancer cells over non-cancerous breast epithelial cells. In addition, these compounds significantly reduce toxicity toward non-cancerous cells when used in combination with known chemotherapeutics such as doxorubicin, cisplatin and others. This advantage can potentially translate to a much safer treatment and increased survival rate for patients with metastatic triple-negative breast cancer, one of the most aggressive breast cancer types.

She also earned recognition in 2023 as Outstanding Faculty of the Year and Outstanding Mentor of the Year for the TTUHSC Graduate School of Biomedical Sciences, demonstrating how important mentoring is to her career. She said the NAI Senior Member designation is important to her personally and professionally because it recognizes her contributions to the field of medicinal chemistry and drug discovery.

"It reinforces my commitment to this field, but it also connects me to a network of innovators, allowing for new collaborations and opportunities to translate my research into real world clinical applications," German said.

German joins a growing list of TTUHSC faculty inventors recognized by NAI for their outstanding innovations in biomedical science. That recognition began in 2018 when Samuel Prien, Ph.D., a professor of obstetrics and gynecology at the TTUHSC School of Medicine, became the university's first NAI Senior Member. Since then, Lyndsey Penrose, Ph.D., assistant professor of obstetrics and gynecology, and Ted Reid, Ph.D., vice chairman for the School of Medicine's Department of Ophthalmology and Visual Sciences, were named NAI Senior Members in 2023 and Hongjun "Henry" Liang, Ph.D., a professor in the TTUHSC Department of Cell Physiology and Molecular Biophysics, was named a Senior Member in 2024.

In addition, Prien was named an NAI Fellow in 2021, an honor also received in 2023 by P. Hemachandra Reddy, Ph.D., a professor in the School of Medicine's Department of Internal Medicine, and in 2024 by Hiranmoy Das, Ph.D., a professor of pharmaceutical sciences at the TTUHSC Jerry H. Hodge School of Pharmacy.

As TTUHSC's newest NAI Senior Member, German thanked the Texas Tech University Office of Research Commercialization for their continuous support with initiating and advancing patents from her research group. She also appreciates the help and support from Lance McMahon, Ph.D., TTUHSC chief research officer and executive vice president for research and innovation, and Tom Abbruscato, Ph.D., who chairs TTUHSC's Department of Pharmaceutical Sciences.

"They have been very supportive of the research program at the pharmacy school, making our jobs as researchers and innovators so much easier," German said. "And, of course, I'm thankful to Dean Grace Kuo for providing us with the support at the School of Pharmacy level. It is a big team of people that supports us as researchers, and I am very grateful for that."

- 30 -