
C-Path Partners with University of Arizona on Translational Research of Parkinson's Disease in Women

Two-year project will use New Approach Methodologies to examine sex-specific differences in the cellular biology of Parkinson's disease

TUCSON, Ariz., October 6, 2026 — Critical Path Institute® (C-Path) today announced a research collaboration with the University of Arizona to investigate the cellular mechanisms that drive Parkinson's disease in women. The two-year project, led by Lalitha Madhavan, M.D., Ph.D., Professor of Neurology, at the University of Arizona, will compare brain cells grown from women and men living with Parkinson's to look for biological differences that may help explain why the disease presents and progresses differently between the sexes.



The work is part of C-Path's Global Evidence in Medicine for Parkinson's Disease (GEM-PD) initiative, launched in March 2025 to address how Parkinson's uniquely affects women based on sex-specific biological factors that may influence disease progression, symptoms, and treatment. This collaboration represents the real-world evidence (RWE) workstream within GEM-PD and advances C-Path's broader vision of addressing unmet needs in research and drug development.

Women with Parkinson's report that their experience in living with the disease varies as compared to men, including in time to diagnosis and symptom burden of non-motor vs motor symptoms. The incidence and prevalence of the disease are greater in men, who carry an approximate 1.5 to 2 times greater risk of developing Parkinson's compared to women, according to a [2015 analysis of baseline data from the NIH Exploratory Trials in Parkinson's Disease Long-term Study-1 published in PLOS ONE](#). Women are under-represented in clinical and experimental studies of Parkinson's and much remains to be elucidated regarding the disease's biological underpinnings of sex differences, according to a [2025 review in biology of sex differences](#) published in Nature.

Researchers at the University of Arizona will differentiate cortical neurons from well-characterized female and male sporadic Parkinson's induced pluripotent stem cell (iPSC) lines obtained through the Parkinson's Precision Medicine Initiative (PPMI), a landmark longitudinal observational study sponsored by The Michael J. Fox Foundation for Parkinson's Research. Following review by the study's Biospecimen Review Committee, PPMI cell lines are made available to qualified investigators to enable biomarker research, therapeutic development, drug screening and disease modeling. Those neurons will be compared against age- and sex-matched controls across cellular, functional, and proteomic endpoints, using established cellular assays, quantitative proteomics, and electrophysiological analyses.

"C-Path and the University of Arizona have a long history together, and this new phase of our partnership further accelerates our commitment to understanding how Parkinson's affects women," said Kristen Swingle, M.S., C-Path's President and Chief Operating Officer. "The specialized neurons Dr. Madhavan's lab will

grow in Tucson are essential to answering questions that clinical information alone cannot, and we are proud to deepen our investments in human-relevant research models that share our commitment to scientific rigor. We are grateful to the University of Arizona for bringing its stem cell expertise to important projects like this one.”

“The University of Arizona is proud to continue to work with C-Path after years of success together, and we share a strong commitment to understanding this disease in the people it affects,” said Madhavan. “With C-Path’s newest commitment, we are pleased to apply our stem cell program to create human-derived models that make vital scientific questions, such as mechanisms of Parkinson’s in women, possible to answer.”

The project uses a New Approach Methodology (NAM), a category of human-cell-based and non-animal research models that address limitations of traditional preclinical systems. In addition to the project with Dr. Madhavan, C-Path has prioritized NAMs applications in drug development through its New Approach Methodologies Developer Coalition.

The multi-year partnership with Dr. Madhavan extends from April 2026 through June 2028 across four defined milestones. The researchers expect to share their results at scientific conferences such as the International Society for Stem Cell Research and the AD/PD meeting, culminating in a primary research paper.

“Addressing sex-specific biology is an essential and long-overdue step in Parkinson’s research,” said Diane Stephenson, Ph.D., Vice President of Neurology at C-Path and Executive Director of the Critical Path for Parkinson’s Consortium. “This foundational work delivers the mechanistic evidence required to elevate how clinical trials are designed and ensure new therapies are evaluated with greater precision.”

To learn more about GEM-PD, visit <https://c-path.org/program/critical-path-for-parkinsons/>.

Founded in 2005, as a public-private partnership in response to the FDA’s Critical Path Initiative, C-Path’s mission is to lead collaborations that advance better treatments for people worldwide. Globally recognized as a pioneer in accelerating drug development, C-Path has established numerous international consortia, programs and initiatives that currently include more than 1,600 scientists and representatives from government and regulatory agencies, academia, patient organizations, disease foundations and pharmaceutical and biotech companies. With dedicated team members located throughout the world, C-Path’s global headquarters is located in Tucson, Arizona, and C-Path’s Europe subsidiary is headquartered in Amsterdam, Netherlands. For more information, visit c-path.org.

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