



## Hope Funds for Cancer Research

Press Release

### Study Co-Authored by Hope Funds Alumnus Suggests Embryonic Origins of Testicular Cancer

For Immediate Release  
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**Newport, RI - December 30, 2019** - A former Hope Funds for Cancer Research Fellow working at the Whitehead Institute at Massachusetts Institute of Technology is co-author of a study published by the National Academy of Sciences, which deepens the understanding of the reproductive process, with implications for the study on the origins of some reproductive tract cancers, including testicular cancer.

Peter K. Nicholls, PhD, a postdoctoral fellow working in the laboratory of Dr. David C. Page at the Whitehead Institute, MIT, co-authored the study with Dr. Page as described in a release from the Whitehead Institute, "Committed to Reproduction." [Click Here to Read the Release.](#)

Dr. Nicholls is a 2015 Hope Funds for Cancer Research Fellow.

"This research overturns a widely accepted dogma in the field of germline development, and emanates from a hypothesis I first proposed in my 2015 Hope Funds fellowship application," said Dr. Nicholls. "Briefly, we find that, rather than being one of the first lineages to be committed in development, germ cells may be the very last cells to be committed in embryogenesis. My findings resolve a number of longstanding questions in the field, and suggest a common cellular origin for germ cell tumors in both sexes."

"We are excited and proud to learn of this important study by Dr. Nicholls and the Page Laboratory," said Leah Rush Cann, Chair of the Executive Committee, the Hope Funds for Cancer Research.

The founders of Hope Funds for Cancer Research aimed to fund outstanding postdoctoral researchers as the most productive and cost effective way of supporting important research in the most challenging and understudied cancers.

"The Hope Funds fellowships have become a critical bridge for these outstanding scientists to remain focused on research at a time when research funding is extremely scarce," said Mrs. Cann. "The fellowships not only support three years of research, but, as demonstrated by Dr. Nicholls and others, also help facilitate a lifetime of making discoveries."

#### About Peter K. Nicholls, PhD

Dr. Nicholls is a postdoctoral associate at the Whitehead Institute, in the laboratory of David Page, MD. Dr. Nicholls' project focuses on identifying the embryonic origin of germ cells tumors (GCTs) of the reproductive tract, a cancer that predominately affects young men and women.



In recent years, significant advances in molecular biology have led to a much clearer understanding of the characteristics of testicular and ovarian GCTs. Despite this, the cellular origin of these tumors remains speculative. To address this deficiency, he is studying the process by which embryonic primordial germ cells (PGCs) - precursor cells to both eggs and sperm - undertake normal development. When these embryonic PGCs do not develop appropriately, mice develop GCTs in both the testis and ovary. Dr. Nicholls' current work suggests that the origin of both ovarian and testicular tumors arises from a common failure to undertake normal embryonic development. In ongoing work, he is identifying genetic factors that control the development of GCTs. Combining genetic and molecular approaches, these results create a new understanding of the developmental origin of GCTs. Understanding the origin of these tumors will transform the scientific approach to studying these disorders, as well as offer opportunities to understanding the well-documented increase in these tumors over recent decades. This project addresses germ cell tumors of the ovary, testis and the midline. Dr. Nicholls received his Bachelor of Biomedical Science from Monash University in Clayton, Australia with honors and his Doctorate of Philosophy in Biochemistry and Reproduction from Monash University and Prince Henry's Institute. Dr. Nicholls studied at Frontiers in Reproduction at Marine Biological Laboratory, Woods Hole, MA.



#### **About the Page Laboratory**

David C. Page is the Director of the Whitehead Institute for Biomedical Research, Professor of Biology at MIT, and an Investigator of the Howard Hughes Medical Institute. A graduate of Swarthmore College, he earned his MD from Harvard Medical School and the Harvard-MIT Health Sciences and Technology program. He joined the Whitehead Institute, as the first Whitehead Fellow, in 1984. Dr. Page's laboratory explores fundamental differences between males and females in health and disease, both within and beyond the reproductive tract. His honors include a MacArthur Prize Fellowship, Science magazine's Top Ten Scientific Advances of the Year (1992 and 2003), the Francis Amory Prize of the American Academy of Arts and Sciences, and the March of Dimes Prize in Developmental Biology. He is a Member of the National Academy of Sciences, the National Academy of Medicine, and the American Academy of Arts and Sciences.

#### **About Hope Funds for Cancer Research**

Hope Funds for Cancer Research was formed in 2006 by a group of concerned individuals who have experience in oncology, intellectual property law, investment banking, philanthropy, sociology, and the arts to establish a funding vehicle that would take a rational scientific, medical, and investment approach to granting money to the most interesting and promising research efforts to address the most difficult-to-treat cancers, including pancreatic, lung, liver, sarcomas, esophageal, brain, gastric, and ovarian cancers, and rare lymphomas, leukemias and MDS. These cancers are insidiously aggressive illnesses that kill most of their victims within months, even with aggressive chemotherapy. The Trustees of the Hope Funds for Cancer Research believe that funding research that could lead to breakthroughs in these areas and increase life expectancy in these types of cancers is at the core of our mission. The Hope Funds for Cancer Research is a 509 (a)(1) charity under 501(c)(3) of the Internal Revenue Service's code. For additional information about the organization, please visit <http://www.Hope-Funds.org> or call 401-847-3286.

*Hope Funds for Cancer Research: Advancing Innovative Research in Understudied Cancers*

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