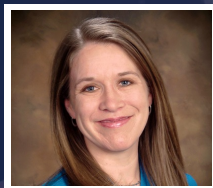


Creating Diagnostic and Therapeutic Tools for Rare Blood Diseases and Cancer



Christy Haynes
Professor Chemistry University of Minnesota

CURRENT RESEARCH

How analytical and materials chemistry has societal, environmental, and medical applications

While our understanding of the biological processes of the human body is vast, researchers are still uncovering basic principles that are leading to advancements in health, inquiry, and technology. Dr. Christy Haynes, of the University of Minnesota, is an exemplary example of the ways in which seeking to understand basic scientific concepts is leading researchers towards important tools for diagnostics and therapeutics for a variety of illnesses ranging from rare blood diseases to cancers. Dr. Haynes has specifically focused her research on exploiting analytical and materials chemistry principles to create new measurement methods, open new therapeutic avenues, and ensure safe use of new materials classes.

Dr. Haynes and her group use nanoparticles to try to make therapeutics or microelectrodes to measure fundamental properties in cells that are involved in diseases while ensuring that environmental sustainability remains a priority in the creation of such technologies. Therefore, her research has medical, environmental, and societal implications including: informing drug design to avoid unwanted blood clots, introducing entirely new modalities to treat cancer, sensing biological analytes within the complete matrix of human blood, informing how to use the new class of nanomaterials without causing environmental harm, and educating researchers who will continue to advance towards scientific discoveries.

Current projects include:

- Revealing critical behavior in blood platelets: Platelets are critical actors in making our blood clot when it's needed and when it's not. This process is driven by chemical messenger molecules secreted by and to the platelets. Dr. Haynes' research is...

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AFFILIATION

 University of Minnesota

EDUCATION

- Ph.D. in Chemistry 2003, Northwestern University
- M.S. in Chemistry 1999, Northwestern University
- B.A. in Chemistry 1998, Macalester College

AWARDS

- Taylor Award for Distinguished Research from the University of Minnesota, 2014
- Kavli Foundation Emerging Leader in Chemistry Lecture, 2013
- Pittsburgh Conference Achievement Award and One of the "Brilliant 10" chosen by Popular Science Magazine, 2012
- Joseph Black Award from the Royal Society of Chemistry, 2011
- Alfred P Sloan Fellow: Arthur Findeis Award, 2010

RESEARCH AREAS

Life Science, Oncology / Cancer, Oncology / Cancer, Drug Development

FUNDING REQUEST

Your contributions will support the continued research of Dr. Haynes as she creates new measurement methods, therapeutic avenues, and ensures safe and sustainable use of new materials classes. Your donations will support the necessary cost of about one million dollars for 20 researchers, equipment, travel, facilities fees, and publications. Dr. Haynes' research is at a critical moment and her most exciting science of her career is likely to occur in the next ten years.