Harnessing Nature's Abilities in the Next Generation Technologies

François Baneyx

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CURRENT RESEARCH

Sustainable, cost-effective technologies improve health results

Nature has gifted us with remarkable living systems that can withstand extreme environments, perform intricate functions, and work collaboratively with other systems. Researchers are working to emulate nature's "green" strategies for the production of new materials, devices, and therapies. Leading this effort is Dr. Francois Baneyx, of the University of Washington, who believes that "nothing beats the efficiency and economy of living systems." While historically, his work has aimed to understand how proteins fold in the cell with a focus on the role of molecular chaperones, Dr. Baneyx and his team are now using these insights to dive deeper into the nascent field of bionanotechnology. For the last fifteen years, his group has investigated how proteins can be used to control the formation of complex inorganic structures that have extraordinary properties. Through a deepening understanding of such properties, Dr. Baneyx hopes to engineer materials and systems, inspired from nature's designs, that will have an impact on medicine, electronics, physics, and more.

Dr. Baneyx's research not only illuminates the exciting repertoire of tools that can be modeled after nature but has also helped to manufacture materials that are more efficient, cost effective, sustainable, and helpful. By engineering products from scratch, Dr. Baneyx and his team are able to harness the structure of a material in a way that helps people most. Dr. Baneyx argues that basic research is the most exciting thing a researcher can do because it gives the world the "ability to think about potential ways to apply fundamental knowledge to helping people." As he and his team break new grounds, they also work towards applications that parallel the...

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AFFILIATION

University of Washington

EDUCATION

- Ph.D. in Chemical Engineering 1991, The University of Texas at Austin
- Ingénieur ENSIGC (now ENSIACET), École Nationale Supérieure des Ingénieurs Génie Chimique,Toulouse, France,1984-1986

AWARDS

- Fellow, American Association for the Advancement of Science (AAAS), 2013
- Guest Editor: Biotechnology Journal Nanobiotechnology versus Bionanotechnology special issue, 2012
- Conference co-chair: UEF Biochemical and Molecular Engineering XVII: Emerging Frontiers, 2011
- UW College of Engineering Faculty Innovator Award: Research, 2010
- Bill and Melinda Gates Foundation Grand Challenge Exploration Award, 2008

RESEARCH AREAS

Technology, Chemistry, Electronics / Sensors, Materials Science / Physics

FUNDING REQUEST

Your contributions will support the continued research of Dr. Baneyx, of the University of Washington, as he creates new materials, devices, and therapies. Donations will support the $750K-$1M each year required for personnel, materials, supplies, and travel. Donations of $100K would be a helpful contribution as they could help pay for a student or postdoc to continue their education. In choosing to donate, you will play a role in developing sustainable materials that will largely impact our future.