**John Dabiri**

Professor of Civil & Environmental Engineering and of Mechanical Engineering at Stanford University

Former Dean of Undergraduate Students

Director, Center for Bioinspired wind energy

California Institute of Technology

B.S.E. summa cum laude, Mechanical & Aerospace Engineering
  Princeton University, 2001
M.S., Aeronautics - California Institute of Technology, 2003
Ph.D., Bioengineering with Aeronautics minor -California Institute of Technology, 2005

***Biography***

John Dabiri was born in 1980 shortly after his parents immigrated to Toledo, Ohio from Nigeria in 1975. His father was a mechanical engineer and taught mathematics at a local community college. His mother was a computer scientist who started a software development company in addition to raising John and his two siblings. Dabiri’s passion for engineering started while watching his father do engineering work.

John graduated high school in 1997 from a small Baptist high school where he graduated first in his class. He applied to only one school and was accepted there; Princeton. His early work and interest there involved rockets, jets and helicopter design. The summer after his junior year he did a Summer Undergraduate Research Fellowship in Aeronautics at Cal-Tech. One summer project involved how swimming jellyfish create vortices which started his work in biomechanics.

***Research***

John has many different areas of research but this section will focus on how he incorporated the hydrodynamics of jellyfish into the development of a vertical-axis wind farm. The wind energy industry is scaling up to harvest more energy. However, Dabiri believes that problems associated with large turbines (design difficulties, building costs, increasing areal needs (turbines are sometimes erected a mile apart to ensure good wind flow), eyesore complaints and accidental animal deaths) can be avoided through innovation.His center, with 24 close vertical axis turbines, is his step towards more economical harvesting of wind energy. Noting that there is constructive interference in the hydro-dynamic wakes of schooling fish, Dabiri suggested that extracting energy from flow vortices could aid more than locomotion.His models of the energy extraction mechanism are applicable to the design of systems like wind farms. Design of an array of vertical axis turbines led to about an order of magnitude increase in power output per area.Dabiri partnered with Windspire Energy for use of three of 24 turbines that stand approximately 30 feet tall by 4 feet wide.He started a company, Scalable Wind Solutions, to commercialize the software used to optimally place the turbines. This has also led to the Navy funding development of an underwater craft that propels on these concepts which needs 30% less energy.

***Awards, Honors, & Special Recognitions***

* 8 NSF grants in 5 different areas
* Finalist for Rhodes and Marshall Scholarship
* 2010 MacAruther Fellowship Award winner
* Young Investigator Award from Office of Naval Research
* One of Popular Science magazines *“Brilliant 10”* scientists in 2008
* Bloomberg Businessweek magazine listed him amount its 2012 Technology Innovators

*Information on this biography was taken from personal correspondences, his biography at* [*http://dabirilab.com/dabiri*](http://dabirilab.com/dabiri) *and Wikipedia.*