

## Mark A. DePristo, Ph. D.

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### OBJECTIVE:

- Leadership position in research and technology development in medical and population genetics

### SUMMARY:

- Manages team of 10-15 computational biologists and software engineers
- Leads team in the Medical and Population Genetics program at the Broad Institute of Harvard and MIT in the development of methods to apply next-generation DNA sequencing technologies in medical genetics
- Leads the analysis team for the 1000 genomes project at the Broad to apply these tools to characterize all common human genetic variation
- Business experience in the life sciences as a business strategy consultant
- Former Marshall Scholar, NSF fellow, and Damon Runyon Cancer fellow at Cambridge University and then Harvard University
- Expertise in DNA sequencing technology, analysis methods, medical genetics, experimental and computational biology and computer science, structural biology, systems biology, scientific computing, program design and development, and artificial intelligence

### EXPERIENCE:

#### **Group Leader, Medical and Population Genetics, Nov. 2008 — present Broad Institute of Harvard and MIT, Cambridge, MA**

- Managed a team of 10-15 Ph.D.-level computational biologists, bioinformatic analysts, and software engineers
- Lead this team in the development of methods to apply next-generation DNA sequencing technologies in medical genetics
- Lead the analysis team for the 1000 genomes project at the Broad to apply these tools to characterize all common human genetic variation
- Myself and members of my team have presented their work at professional conferences throughout the world, contributed fundamental analyses to international research projects and their publications, and helped build a production quality pipeline for the analysis of next-generation DNA sequencing data at the Broad

#### **Associate Consultant, Life Sciences Specialist, March 2008 — Oct. 2008 L.E.K. Consulting, Boston, MA**

- Providing fundamental business strategy advice to biotechnology, pharmaceutical, medical device, and private equity companies based on qualitative and quantitative analyses of markets, competitors, and customers

**Damon Runyon Cancer Research Fellow, Aug. 2004 — Dec. 2007**  
**Harvard University**

- Research into bacterial antibiotic resistance evolution and malaria evolution using experimental, theoretical, and computational approaches in biochemistry, population genetics, and molecular biology under the supervision of Prof. Daniel L. Hartl and Prof. James J. Collins
- Damon Runyon Fellowship (1 of 50 fellows from 500 applicants, 2005)

**Research Assistant, Aug. 1997 — May 2000**  
**Northwestern University**

- Autonomous Mobile Robotics Group under Prof. Ian Horswill
- Developed a Scheme language compiler in collaboration with Microsoft Corp.
- Developed a vision system for mobile robots in collaboration with Sony Corp.

**EDUCATION:**

**Ph. D. in Biochemistry, Aug. 2000 — May 2004**  
**University of Cambridge**

- Supervised by Prof. Sir Tom L. Blundell
- Thesis: *ab initio* conformational sampling for protein structure determination, analysis, and prediction
- Cambridge Overseas Trust Award (for outstanding overseas students, 2003)
- National Science Foundation Fellowship (1 of 1000 fellows out of 10,000 applicants, 2002)

**B. A. in Computer Science and Mathematics, Sept. 1996 — May 2004**  
**Northwestern University**

- Graduated Magna Cum Laude with honors (GPA of 3.9/4.0)
- Marshall Scholarship (1 of 40 scholars from 1000s of nominees, 2000)
- Barry Goldwater Scholarship (1 of 300 scholars from 1,100 nominees, 1998)

**ACCOMPLISHMENTS, BUSINESS EXPERIENCE, AND LEADERSHIP:**

- Ten first author and another ten co-authored publications in peer-reviewed journals, including Nature (2005) and Science (2006)
- Mentored five graduate and one undergraduate students through the design, implementation, presentation, and publication of multi-year research projects
- Skipper of racing and cruising yachts in Boston, England, and New Zealand
- Excellent communication, presentation, and writing skills, including public speaking at scientific conferences and biotechnology and pharmaceuticals companies; invited reviews of scientific literature
- Business experience: commercialized protein structure prediction software with Tripos Inc.; member of MIT clean energy forum; invited speaker at biotechnology and pharmaceutical companies

**SKILLS:**

- Analysis of complex data, including statistical inference and Markov Chain Monte Carlo; mathematical modeling of complex phenomena such as biochemical reactions and cellular physiology
- Experimental biology: molecular cloning, genetic engineering, protein biochemistry, molecular evolution, microscopy, and cell physiology
- Expert computer user and programmer in C/C++, Java, Lisp, Python, PHP, SQL, Office, Matlab, and R; implemented interactive websites and software in use by thousands of scientists worldwide; high-performance scientific computing; mobile robotics and artificial vision and image processing

**MISCELLANEOUS:**

- Volunteering: representative on Marshall Scholar selection committee, sponsored cancer research charity race, taught introduction to science and mathematics to K-12 students visiting Cambridge University
- Extracurricular activities: avid skier/snowboarder, squash player, traveler, accomplished photographer, and competitive sailor

**REFERENCES:**

- Available upon request