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IAN FOSTER

NARRATIVE

I am a computer scientist whose work at the intersection of computing and the sciences has produced both practical technologies that have seen wide adoption and concepts and methods that have proven influential in research and education. My research interests span a range of topics in parallel, distributed, and data-intensive computing. A unifying theme is a desire to use the power of rapid communication to accelerate discovery, whether by linking people with remote computers and data, accelerating complex computational processes, or enabling distributed virtual teams. I pursue use-inspired basic research, meaning that I employ challenging practical problems to motivate and focus work on hard problems in computer science. Over the years, these practical problems have come from such fields as environmental science, economics, high-energy physics, biomedicine, and engineering. I often build sophisticated artifacts (software and distributed systems) in order to apply, evaluate, and disseminate new concepts and methods. Thus, my work frequently involves large teams of disciplinary scholars, computer scientists, and software engineers.

EDUCATION

1985 - 1988   Imperial College   London, United Kingdom
PhD, Computer Science and Diploma of Imperial College

1977 - 1979   University of Canterbury   Christchurch, New Zealand
BSc (Hons I), Computer Science

PROFESSIONAL EXPERIENCE

2006 -   Argonne National Laboratory   Argonne, IL
                 The University of Chicago   Chicago, IL
Director and Senior Fellow, Computation Institute (CI); Argonne Distinguished Fellow; Arthur Holly Compton Distinguished Service Professor of Computer Science; Senior Fellow, Institute of Genomic and Systems Biology; Fellow, Institute of Molecular Engineering

[Previously: Asst. Scientist 1989-1992, Scientist 1992-1997, Senior Scientist 1997-2008, Math & Computer Science Division, Argonne; Assoc. Professor 1996-2000, Professor 2000-2006; Dept of Computer Science, University of Chicago]

- Lead the Computation Institute, a cross-institutional, multi-disciplinary research institute with more than 100 Fellows, 80 staff, many postdocs and students, and an annual budget of ~$20M
- Conduct research in distributed, parallel, and data-intensive computing, and publish technical articles that have seen more than 90,000 citations, yielding an h-index of 113[*]
- Pioneer new technologies that have seen wide adoption, including grid computing (technologies, infrastructures, and applications), parallel climate models (e.g., Parallel Community Climate Model), and parallel programming languages (e.g., Swift)
- Establish and manage major computer science and computational science projects, including Earth System Grid, Grid Physics Network, International Virtual Data Grid Laboratory, Open

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[*] *H-index is a commonly used measure of scientific impact. According to http://www.cs.ucla.edu/~palsberg/h-number.html, mine is in the top 10 within computer science, as of 2013*

Science Grid, TeraGrid, Center for Enabling Distributed Petascale Science, and Center for Robust Decisionmaking on Climate and Energy Policy

- Lead the establishment of the international Globus Alliance open source community, and the development of the Globus Toolkit and Globus Online services, from inception to their adoption by a broad spectrum of national and international projects
- Establish the Open Grid Forum, and play a leadership role in various other national and international projects and organizations
- Serve on national and international advisory committees, including the US Ocean Observatory Initiative and UK eScience Program
- Supervise the work of research staff and graduate students
- Teach graduate and undergraduate classes in computer science

1985 - 1998   Imperial College   London, U.K.

Research Associate, Department of Computing

- Conduct research in concurrent logic programming systems
- Develop programming language technology, commercialized as Strand

OTHER PROFESSIONAL EXPERIENCE

Founder, Board Member, Chief Open Source Strategist, Univa Corporation

Technical Advisory Board, CancerIQ (2013-), EMC Corporation (2010-), IOCOM Corporation (2005-2009), Entropia (2000-2004)

PUBLICATIONS AND PRESENTATIONS

More than 500 article and technical reports, and six books, in distributed and parallel computing, computational science, and programming languages. More than 100 keynote talks and seminars worldwide. See https://www.researchgate.net/profile/Ian_Foster/publications/

The Grid: Blueprint for a New Computing Infrastructure, I. Foster and C. Kesselman (Eds), Morgan-Kaufmann, 1999 and 2003 (2nd edition).

Designing and Building Parallel Programs: Concepts and Tools for Parallel Software Engineering, I. Foster, Addison-Wesley, 1995.

SELECTED RECOGNITION

Inaugural ACM HPDC Lifetime Achievement Award, 2012; IEEE Tsutomu Kanai Award, 2011; D.Sc. (Honoris Causa), CINVESTAV, Mexico, 2010; Fellow, Association for Computing Machinery, 2009; GridWorld "Industry Leadership Award," 2006; Network World's 50 Most Powerful People in Networking, 2005; D.Sc (Honoris Causa), University of Canterbury, NZ, 2005; InfoWorld Innovator, 2003, 2004, 2005; Fellow, American Association for the Advancement of Science, 2004; R&D Magazine Innovator of the Year, 2003; University of Chicago Distinguished Service Award, 2003; MIT Technology Review, one of "Ten Technologies That Will Change the World," 2003; British Computer Society Lovelace Medal, 2002; Fellow, British Computer Society, 2002; Federal Laboratory Consortium Technology Transfer Award, 2002; R&D100 "Most Promising New Technology" Award, 2002; Gordon Bell Award, 2001; Global Information Infrastructure "Next Generation" Award, 1997; Best Paper Award, 1995 Supercomputing Conference; British Computer Society Award for Technical Innovation, 1989.