

# Curriculum Vitae: Seán Ó hÉigeartaigh

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## Areas of Specialisation

Research: Emerging technologies, risk, artificial intelligence, technology policy, genomics, synthetic biology, evolution, horizon-scanning and foresight, expertise elicitation and aggregation.

Professional: Management and strategy (research, staff and financial), research/grant funding, philanthropic fundraising, media and outreach, policy engagement, collaborations.

## Positions held:

- October 2014 - present: Executive Director, Centre for the Study of Existential Risk (<http://cser.org>), University of Cambridge
- September 2013 – April 2015 Senior Academic Manager (deputy directorial role), Future of Humanity Institute (<http://www.fhi.ox.ac.uk>) & its constituent research programmes, University of Oxford
- September 2011 – April 2014: Academic Project Manager, Oxford Martin Programme on the Impacts of Future Technology (<http://www.futuretech.ox.ac.uk>), Oxford Martin School.

## Education, committees and honours:

- PhD in Genome Evolution (awarded June 2012), Wolfe Bioinformatics Laboratory (Trinity College Dublin)
- Postgraduate Diploma in Statistics, 1st class hon. (2007) Trinity College Dublin
- BA (Mod) Human Genetics, 1st class hon. (2006) Trinity College Dublin
- Trinity College Dublin Foundation Scholarship, 2004-2009
- Chair of the Steering Committee for the FHI-Amlin Collaboration on Systemic Risk
- Founding member of Cambridge Hub of the World Economic Forum Global Shapers Network

## Grants currently held:

- Co-I, *Managing Extreme Technological Risks*, a £1.8M research project to develop a methodology for the management of risks from emerging technology.
- Co-I, *Towards a Science of Extreme Technological Risk*, a £0.8M (combined funding sources) complementary research project examining high-impact technologies.
- Co-I, *Extreme Technological Risk and the Global Environment* (£0.3M).
- Co-I, *Strategic Research Centre for AI Policy* (£1M); joint project with Oxford University.

## Selected professional accomplishments

### Centre development and management:

From 2013-2015 I successfully established the Centre for the Study of Existential Risk in collaboration with its Founders and Academic Director, and became its first Executive Director.

From 2011-2015 I functioned in a deputy directorial capacity at FHI, during which I increased the FHI's staff from 5 to 16 full-time staff, increased our operating efficiency, research output and global impact, and more than doubled FHI's annual budget. I put in place and oversaw a team of project managers and administrators, including a Director of Research and Director of Operations to whom I transferred my responsibilities upon moving on.

**Grants and fundraising:** Since moving into grants and fundraising in January 2013 I have led on successful efforts totalling over £6 million in value (academic, philanthropic and industry) for high-impact research on emerging risks and related topics, and have contributed to other successful efforts.

**Research management and collaboration:** In addition to launching CSER, and running the OMS Programme on the Impacts of Future Technology, I have led or been centrally involved in the establishment of three new collaborative research projects since 2013: the FHI-Amlin Collaboration on Systemic Risk, the Global Priorities Project, and collaboration between FHI and CSER on Existential Risk. The FHI-Amlin Collaboration is noteworthy as the first instance of an active research collaboration between the business risk sector and Oxford's Philosophy Faculty.

**Policy engagement:** I am regularly consulted by policymakers, including members of the UK, German, Swiss, Singapore and US governments, on topics ranging from technology policy to counter-terrorism.

*Full list of consultations available on request.*

## **Selected research**

### **Policy Reports:**

Price, Huw & ÓhÉigeartaigh, S. S. "Policy, Decision-Making and Existential Risk". Case study in *Innovation: Managing Risk, Not Avoiding It*; The Government Chief Scientific Adviser's annual report for 2014 (P117).

Beckstead, N., Bostrom, N., Bowerman, N., Cotton-Barratt, O., MacAskill, W., ÓhÉigeartaigh, S.S. & Ord, T. "Unprecedented Technological Risks" (2014). Policy brief requested by UK government. Redacted version online at: [http://bit.ly/UTR\\_report](http://bit.ly/UTR_report)

### **Selected Publications:**

ÓhÉigeartaigh, S. S., Armisén, D., Byrne, K. P., & Wolfe, K. H. (2014). SearchDOGS Bacteria, Software That Provides Automated Identification of Potentially Missed Genes in Annotated Bacterial Genomes. *Journal of Bacteriology*, 196(11), 2030-2042.

Armstrong, Stuart, Kaj Sotala, & ÓhÉigeartaigh, S. S. "The errors, insights and lessons of famous AI predictions—and what they mean for the future." *Journal of Experimental & Theoretical Artificial Intelligence* (2014): 1-26.

Maguire, S. L., ÓhÉigeartaigh, S. S... & Butler, G. (2013). Comparative genome analysis and gene finding in *Candida* species using CGOB. *Molecular biology and evolution*, 30(6), 1281-1291.

ÓhÉigeartaigh, S. S., Armisén, D., Byrne, K. P., & Wolfe, K. H. (2011). Systematic discovery of unannotated genes in 11 yeast species using a database of orthologous genomic segments. *BMC genomics*, 12(1), 377.

*Full list available on request*

### **Selected workshop presentations and public talks:**

“Artificial Intelligence: Near and Long-Term Impacts” *The Opportunities and Risks of Artificial Intelligence* (Policy leaders’ workshop on AI held by the Centre for Science and Policy), March 2015

“The Future of Artificial Intelligence: Opportunities and Challenges” *The Technology Forum* (Invite only technology industry event), March 2015

“Foresight in Biotechnology” *Managing Risk in Biotechnology Innovation* (Closed door UK-German policy workshop organised by the Foreign and Commonwealth Office), October 2014.

“Artificial Intelligence: Risks and Trajectories” *Pint of Science Festival*, Dublin, May 2014

“Technological Risk: The 21st Century’s Greatest Challenge” *The World In 50 Years And How Do We Get There*, Dutch Future Society & AIA, April 2014

“Existential Risk as an Interdisciplinary Challenge” *TEDx Hasselt*, March 2014

*Full list available on request.*

### **Selected Workshops and conferences organised:**

*Extreme Technological Risks*. One day high-level workshop involving CSER’s advisers, German policymakers and leaders of the major German research networks. Topics included artificial intelligence, biotechnology, horizon-scanning and policy responses. (September 2014)

*Winter Intelligence Conference*. The largest conference on artificial general intelligence and its impacts held to date in Europe. (December 2012)

*Full list available on request*

### **Selected Media:**

“Hollywood global warming dramas can be misleading” *New York Times*, opinion piece (July 2014)

“Killer robots’: Are they really inevitable? (interview) *BBC news online* (June 2014)

“Synthetic Biology and other benign technologies that could have a dark side”, *Futurista*, (March 2014)

“Will the Spread of Automation and Robotics Mean the End of the White-collar Worker?” *CityAM* (February 2014)

“What’s Google Worried About?” (interview), *RealClearTechnology*, (February 2014)

“3D printing technology – trajectory and risks” (interview) *How it Works Magazine* (January 2014)

“Promising postgrads of the near future” *New Scientist* (2013);

“How are humans going to become extinct?” (interview) *BBC news online* 2013 (one of BBC website’s most-read articles of 2013);

*Full list available on request.*

### **Other services:**

Co-supervisor for undergraduate HPS research paper (Markus Andjerlung): “*Making Decisions Under Radical Uncertainty – A Gain-of-Function research case study*” (2015)