

Curriculum Vitae

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Name: Leslie Ann Goldberg

Date of Birth: 30 May 1966

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Academic Qualifications (MA Oxford 2014 by resolution; BA Rice 1987; PhD Edin 1992)

- **PhD**, University of Edinburgh (Department of Computer Science), 1992
 - Thesis Title: *Efficient Algorithms for Listing Combinatorial Structures*.
 - Fellowships: US National Science Foundation Graduate Fellowship, Marshall Scholarship. (The Marshall Scholarship is supported by the government of the UK. It was offered to thirty graduates of US universities in 1987.)
- **BA**, Rice University, 1987 (Summa Cum Laude)
 - Degree Course: Computer Science (single honours), Political Science (single honours).
 - Scholarships and Awards: Outstanding graduate, School of Engineering; Outstanding student, Department of Computer Science; National Merit Scholarship.

Employment History

- **Department of Computer Science, University of Oxford**
 - From October 2021, Head of Department
 - From July 2013, Professor of Computer Science and Senior Research Fellow, St. Edmund Hall
- **Department of Computer Science, University of Liverpool.**
 - Aug. 2006 – June 2013 Professor
- **Department of Computer Science, University of Warwick.**
 - Oct. 2003 – Aug. 2006 Reader
 - Oct. 2000 – Sept. 2003: Senior Lecturer
 - Oct. 1995 – Sept. 2000: Lecturer and Warwick Research Fellow
- **Algorithms and Discrete Mathematics Department, Sandia National Laboratories, USA.**
 - 1993 — Sept. 1995: Senior Member of Technical Staff
 - 1992 — 1993: Research Fellow

Prizes and honours

- *Best Paper Prize 2017*. 12th International Symposium on Parameterized and Exact Computation (IPEC 2017). Leslie's paper "A Fixed-Parameter Perspective on #BIS" with R. Curticapean, H. Dell, F. Fomin and J. Lapinskas won the best-paper prize.
- *Suffrage Science Award Maths and Computing 2016*. This scheme "celebrates women in science for their scientific achievement and for their ability to inspire others". It was initiated in 2011 by the MRC (Medical Research Council) Clinical Sciences Centre. Leslie was one of the initial 12 award winners in maths and computing (which started in 2016).
- *Best Paper Prize 2016*. 43th Int'l Colloquium on Automata, Languages and Programming (ICALP 2016). My paper "Amplifiers for the Moran Process" with Galanis, Göbel, Lapinskas, and Richerby won best-paper prize for Track A (Algorithms, Automata, Complexity and Games), which had 319 papers submitted.
- Awarded an ERC Advanced Grant, 2014.
- elected member of the European Academy of Sciences *Academia Europaea* 2014.
- *Best Paper Prize 2012*. ICALP 2012. My paper "The Complexity of Computing the Sign of the Tutte Polynomial (and consequent #P-hardness of Approximation)" with Jerrum won best-paper prize for Track A which had 249 papers submitted.
- *Best Paper Prize 2010*. ICALP 2010. My paper "Approximating the partition function of the ferromagnetic Potts model" with Jerrum won best-paper prize for Track A which had 229 papers submitted.
- *Best Paper Prize 2006*. ICALP 2006. My paper "On Counting Homomorphisms to Directed Acyclic Graphs" with Dyer and Paterson won best-paper prize for Track A which had 230 papers submitted.
- 1991–1992 *UK Distinguished Dissertations in Computer Science* (one of three winners)

Short term and invited positions

- Visiting Scientist, Simons Institute for the Theory of Computing, Berkeley, Counting Complexity and Phase Transitions, January-May 2016.
- Visiting Scientist, Centre de Recerca Matemàtica (CRM), Barcelona, Probabilistic Techniques in Computer Science, September 2009
- Visiting Fellow, Newton Institute for Mathematical Sciences, Combinatorics and Statistical Mechanics, June 2008
- Visiting Researcher, Mathematics Sciences Research Institute (MSRI), Berkeley, Probability, Algorithms and Statistical Physics, March-May 2005
- Visiting Fellow, Newton Institute for Mathematical Sciences, Computation, Combinatorics and Probability, July-August 2002

Recent and Upcoming Invited Keynote or Plenary Talks

- 28th Int'l Computing and Combinatorics Conference (COCOON 2022)
- 49th Int'l Conference on Automata, Languages, and Programming (ICALP 2022)
- 41st Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2021)
- 30th Int'l Symposium on Algorithms and Computation (ISAAC 2019)
- 36th Int'l Symposium on Theoretical Aspects of Computer Science (STACS 2019)
- 43rd Mathematical Foundations of Computer Science (MFCS 2018)
- 14th Latin American Theoretical Informatics Symposium (LATIN 2018)
- 27th Int'l Workshop on Combinatorial Algorithms (IWOCOA 2016)
- Foundations of Genetic Algorithms XIII (FOGA 2015)
- Max Planck Institute for Computer Science Distinguished Lecturer Series, Sept 2014
- 8th Int'l Conference on Language and Automata Theory and Applications (LATA 2014)
- 13th Int'l Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2010)

Chair Functions and Steering Committees at International Conferences

1. **PC Chair** 15th International Workshop on Randomization and Computation, RANDOM 2015, Princeton, USA, August 2011.
2. **PC Chair** 35th International Colloquium on Automata, Languages and Programming (ICALP 2008, Iceland) Track A: Algorithms and Complexity
3. Steering Committee ICALP 2018–2022

Editorial Boards

1. Journal of the ACM (JACM), Area editor for “Randomized Algorithms and Probabilistic Analysis of Algorithms” April 2018– March 2020.
2. Journal of Discrete Algorithms, (co)-Editor-in-Chief 2014–2017
3. SIAM Journal on Computing (SICOMP) 2008 – 2016
4. LMS Journal of Computation and Mathematics 2010 – 2012
5. ACM Transactions on Algorithms 2004–2013
6. Journal of Algorithms 2000–2003

PhD Students and Postdocs

- **Marc Roth:** Postdoc from Oct 2021
- **Andres Herrera Poyatos:** PhD from Oct 2019 (supervised with A Galanis)
- **James Stewart:** PhD Oct 2018 - present (supervised with A Galanis)
- **Jacob Focke:** PhD 2020. (supervised with S Živný) Now Postdoc at CISPA.

- **Kuan Yang:** PhD 2020. (supervised with A Galanis) Now Assistant Professor Shanghai Jiao Tong University.
- **David Richerby:** Postdoc. Now Lecturer at the University of Essex.
- **John Lapinskas:** Postdoc. Now Lecturer at the University of Bristol.
- **Miriam Backens:** Postdoc. Now Lecturer at the University of Birmingham.
- **Andreas Galanis:** Postdoc. Now Associate Professor at the University of Oxford.
- **Andreas Goebel:** PhD 2016. Now Researcher at HPI.
- **Colin McQuillan** PhD 2013. Now at Imagination Technologies.
- **Antony McCabe:** PhD 2012 (supervised with P Goldberg). Now Senior Researcher at University of Liverpool.
- **Marcus Jalsenius** PhD 2008. Now a Data Scientist at Telia.
- **Kasper Pederson** PhD 2008. Now a Senior Consultant at SunGard.
- **Russ Martin:** Postdoc. Now at the Data Incubator, Washington DC.
- **Edith Elkind:** Postdoc. Now Professor at the University of Oxford.
- **Steven Kelk:** PhD 2003. Now Associate Professor at Maastricht University.
- **Tom Friedetzky** Postdoc. Now Associate Professor at Durham University.
- **Petra Berenbrink** Postdoc. Now Professor at Hamburg.
- **Hesham Al-Ammal:** PhD 2000. Now Dean of the College of IT at University of Bahrain.
- **Mary Cryan:** PhD 2000. Now Lecturer at Edinburgh University.

Publications

See <http://www.cs.ox.ac.uk/people/leslieann.goldberg/publications.html>.

Research Grants

- L.A. Goldberg, “Mapping the Complexity of Counting”, ERC Advanced Grant 334828. 1 March 2014 – 31 August 2019; 2,499,093 Euros.
- M. Dyer, L.A. Goldberg, and M.Jerrum, “Computational Counting” The project consists of 3 EPSRC Grants. Leslie’s is EP/I011528/1. 1 March 2011 - 28 February 2014, GBP 327,205
- S. Schewe (Principal Investigator) L. Goldberg and T. Shenton (co-investigators) “Synthesis and Verification in Markov Game Structures”, July 2010 - August 2013. EPSRC EP/H046623/1 GBP 335,487
- P. Goldberg (Principal Investigator) L. Goldberg and P. Krysta (co-Investigators) “Efficient Decentralised Approaches in Algorithmic Game Theory”, EPSRC EP/G069239/1, 01/10/2009 - 30/09/2012 GBP 398,269 (this project is joint with an EPSRC grant of Artur Czumaj at Warwick).
- M. Dyer, L.A. Goldberg, and M. Jerrum, “The Complexity of Counting in Constraint Satisfaction Problems”, this project consists of 3 EPSRC Grants. Leslie’s is EP/E062482/1, 01/12/2007 - 30/11/2010, GBP 191,813.

- P. Goldberg (Principal Investigator), L.A. Goldberg (co-Investigator), “Algorithmics of Network-sharing Games”, EPSRC GR/T07343/02, GBP 53,457, 14/08/2006 - 13/01/2008
- M. Paterson (Principal Investigator), A. Stuart, L. Goldberg, and B. Chen (co-Investigators), “The Centre for Discrete Mathematics and its Applications”, EPSRC Science and Innovation Grant, GBP 3,768,168 1/10/06–30/09/12 EPSRC Grant EP/D063191/1
- M. Dyer, L.A. Goldberg, and M. Jerrum, “Discontinuous Behaviour in the Complexity of randomized Algorithms”, This project consists of 3 EPSRC Research Grants. Leslie’s is GR/S76168/01, 19 Jan 04 - 18 Jan 07. GBP 107,361. (Final overall assessment: Outstanding)
- L.A. Goldberg, EPSRC Research Grant, GR/R44560/01, Analysing Markov-chain based random sampling algorithms, 15 Oct 01 – 14 Oct 03. GBP 82,911.74 (Final overall assessment: Outstanding)
- M. Paterson (principal investigators at the Warwick site) and H. Djidjiv and L.A. Goldberg and P. Goldberg and Alexandre Tiskin (other investigators at the Warwick site), IST Programme of the EU, Contract IST-1999-14186, ALCOM-FT, 1 June 00 – 1 June 03.
- M. Dyer, L.A. Goldberg, and M. Jerrum, “Sharper analysis of randomised algorithms: a computational approach”, This project consists of 3 EPSRC Research Grants. Leslie’s is GR/M96940, 1 Apr 00 to 31 March 03. GBP 66,793. (Final overall assessment: Outstanding)
- L.A. Goldberg, EPSRC Research Grant GR/L60982, “Design and Analysis of Contention-Resolution Protocols”, 1 Oct 97 – 30 Sept 00, GBP 16,377. (Final overall assessment: Outstanding)
- M. Paterson (principal investigator at the Warwick site) and L.A. Goldberg and S. Muthukrishnan (other investigators at the Warwick site), ESPRIT Project 20244, ALCOM-IT, “Algorithms and Complexity in Information technology”, Jan 96 – Jun 99.
- L.A. Goldberg, Warwick Teaching and Research Innovations Grant 0951CSA, “Computer Algorithms for Constructing Evolutionary Trees”, 20 August 1996 – 19 August 1997, GBP 1,500.
- E. Brickell, J. DeLaurentis and L.A. Goldberg (principal investigator), “Optical Communication for Future High Performance Computers,” Laboratory Directed Research and Development Grant, 1995, Sandia National Labs, \$571,000.
- J. DeLaurentis and L.A. Goldberg, “Random Structures and Algorithms.” US Department of Energy’s Office of Scientific Computing, 1995, \$180,000.
- L.A. Goldberg, P.W. Goldberg, C.A. Phillips and T. Warnow (principal investigator), A New Approach to Protein Function and Structure Prediction, Laboratory Directed Research and Development Grant, 1994, Sandia National Labs, \$629,000.

External Research Committees

1. Vice President of the EATCS (European Association of Theoretical Computer Science) 2016–2020. Elected member of the Council 2009–2013, 2013–2017 (Chair of the Publications Committee 2012–16, and of the Awards Committee 2013–14).
2. Chair, EPSRC ICT Prioritisation Panel 2019
3. ERC Consolidator Grant Committee PE6
Computer Science and Informatics ERC-2015-CoG and ERC-2017-CoG

4. Specialist Advisor to sub-panel 23, Computer Science and Informatics, 2008 Research Assessment Exercise (RAE)

Public Understanding of Mathematics and Computer Science

- In Our Time, Alan Turing, Radio 4, 15 Oct 2020 Hosted by Melvyn Bragg <https://www.bbc.co.uk/programmes/m000ncmw>
- New Scientist “Instant Expert” day on mathematics, 1 April 2017 <https://www.newscientist.com/event/the-mathematical-world/>
- *Algorithm Complexity and P vs NP* The Training Partnership “Computer Science in Action” 24 Nov 2016 UCL (698 students) and 7 Dec 2016 Warwick (475 students) <http://www.thetrainingpartnership.org.uk/study-day/computer-science-in-action/>
- Algorithms and their Limitations, Hay Festival, 29 May 2016 <https://www.hayfestival.com/p-10763-leslie-ann-goldberg.aspx>
- In Our Time, P vs NP, Radio 4, 5 Nov 2015. Hosted by Melvyn Bragg <http://www.bbc.co.uk/programmes/b06mtms8?> This episode was chosen as one of the Listeners’ Top 10 programmes to mark the 750th edition <http://www.bbc.co.uk/programmes/articles/wvSdFMv6yP0m6W5J8xyhBh/the-in-our-time-listeners-top-10>
- The Secret Rules of Modern Living: Algorithms, BBC Four, 24 Sept 2015 Presented by Marcus du Sautoy <http://www.bbc.co.uk/programmes/p030s6b3>