

# Martin Leslie

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## Mathematical Analyst

PhD mathematician with exceptional problem-solving skills and deep knowledge of many mathematical and computational tools and techniques. Experience in engineering research, biology and education. Excellent oral and written communication skills.

### Education

PhD in Mathematics, The University of Arizona (August 2007 – August 2013)

- Wrote dissertation “Hypermap-homology quantum codes” under the supervision of Dr. Marek Rychlik. Dissertation is available at <http://arxiv.org/abs/1310.5376>

BSc (Honours) in Mathematics, University of Queensland (February 2002 – November 2006)

- Received University Medal (given to graduates within top 1% of Faculty of Science).

### Experience

Research Consultant, Streamscale (January 2014 – May 2014)

- Designed, prototyped and documented new methods for error-correcting codes using probabilistic and algebraic methods.

Content Writer – Math, Shmoop (August 2013 – September 2013, January 2014 – March 2014)

- Wrote pre-algebra questions and geometry lessons aligned with common core standards.

Technical Expert, EEB department, The University of Arizona (August 2013 – January 2014)

- Worked on a biological modeling project studying cellular differentiation in volvocine algae.

Teaching Associate, The University of Arizona (August 2007 – May 2013)

- Sole instructor for undergraduate courses of 35 students including College Algebra, Precalculus, Calculus I, Calculus II and Vector Calculus and was also a teaching assistant for a graduate Abstract Algebra class.
- Received above average student evaluation of overall teaching effectiveness in all courses taught in final four years.

Support Analyst, Digital Instinct (February 2007 – July 2007)

- Worked for Digital Instinct (an Australian company making rostering software) doing technical support by phone and email.
- Carried out testing, documentation and training.

### Technical Skills

Platforms: Windows, Mac OS X, Linux

Languages: Matlab (including object-oriented), Python, C, HTML and CSS, Bash scripting, SQL

Tools: Matlab, LaTeX, SVN and Trac

Techniques: Probabilistic modeling, graphical models and belief propagation, neural networks

### Selected Relevant Coursework

Probability Theory, Discrete Stochastic Processes, Continuous Stochastic Processes, Probability and Statistics, Scientific Computing, Functional Analysis, Information Theory, Software Engineering.

## **Selected Publications and Presentations**

- Leslie M. Hypermap-Homology Quantum Codes. *International Journal of Quantum Information* Vol. 12, No. 1 (2014).
- Leslie M, Shelton DE and Michod RE. The effects of generation time on the convexity of a viability-fecundity tradeoff: implications for evolutionary transitions in individuality and applications to volvocine algae. *In Prep.*
- October 29, 2013. The role of life history tradeoffs in the evolution of cell specialization. Tuesday Seminar, Department of Ecology and Evolutionary Biology, University of Arizona.
- February 21, 2012. The quantum capacity of the depolarizing channel. Information Theory Seminar, Department of Mathematics, University of Arizona.

## **Citizenship**

Australian citizen, currently in the US on F-1 student visa. I am eligible for the E3 visa which is specifically for Australian professionals working for US employers. This visa works similarly to the Canadian TN Visa and requires one form to be completed - the Labor Condition Application. See the information at <http://canberra.usembassy.gov/e3visa.html> or the video at [https://www.youtube.com/watch?v=\\_NPo\\_9y6qUA](https://www.youtube.com/watch?v=_NPo_9y6qUA)