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EDUCATION

2007	**B. Math.**	Scientific Computation/Applied Mathematics	University of Waterloo
2005	**Ph.D.**	Medical Biophysics	University of Toronto
1998	**B. Sc.**	Molecular Biology and Molecular Genetics	University of Toronto

PROFESSIONAL PREPARATION

2012 - 2013 **Mathematical modeller** **Immunetrics** - Pittsburgh, PA
Developed and optimized models that predict the trajectory of human immune system function and the response of 'virtual' patient populations to cutting-edge therapies

- Scoped and implemented several components of bacterial infection (sepsis) and rheumatoid arthritis models; Vital for predicting the response to medical intervention and drug therapy
- Worked closely with software team to adapt and debug optimization and machine learning tools; Critical aids in efficient model building, validation, and optimization
- Independently developed *R* suite enabling team members to process and visualize output of optimization tools; Streamlined characterization and tuning of 'virtual clinical trials'
- Cultivated team-based, time-restricted approaches to problem solving

2007 - 2011 **Postdoctoral Associate** **Biomedical Engineering** - Duke University
Developed novel 'wet' laboratory and computational methods to illustrate how biological networks are coordinated to ensure that cells safely, reliably, and efficiently control their growth

- Single-handedly developed a novel experimental approach that boosted the quantity, accuracy, and granularity of data extracted from cell growth experiments; Used to reveal a novel mechanism preventing the type of 'runway' cell division observed in many tumours
- Independently developed Matlab software suite to explore and visualize the range of behaviours performed by biological networks; Used to show that networks can 'multitask' but this often comes at the cost of performance accuracy
- Honed ability to identify important questions, deploy multidisciplinary approaches to parse and interpret complex data, and concisely communicate 'stories' derived from data

1998 -2005 **Doctoral candidate** **Medical Biophysics** - University of Toronto
Investigated how the cell-cell communication gene Placental Transforming Growth Factor beta (*PTGF-*β) is regulated in cells and how it prevents runaway growth of cancer cells

- Established the cellular communication network used to turn the *PTGF-*β gene on and off; This established *PTGF-*β as a major component of the native 'cell-suicide' mechanism exploited by the class of therapies aimed at selectively triggering death in cancer cells
- Identified strengths of quantitative, formal approaches to extracting understanding from complex systems and large data sets

TECHNICAL SKILLS

Computational

- Extensive use of Matlab, R, Linux, XPP-AUTO (bifurcation software)
- Regular use of MySQL, Python, Java
- Familiarity with HTML, C/C++
- Selected course work: Numerical Solutions of Large Sparse Systems of Equations, Computational Statistics & Data Analysis, Computational Inference, Applied Linear Models

Laboratory

- Really need to justify this being here- why does anyone care about the wet lab exp?
- Single-cell, quantitative measurements using flow cytometry and fluorescent microscopy
- Engineering of synthetic adenoviral and retroviral gene delivery systems
- Design and engineering of synthetic gene circuits in mammalian cell lines
- Well-versed in classic molecular and cellular techniques

SELECTED PUBLICATIONS

Jeffrey V. Wong, Bochong Li, and Lingchong You. "Tension and robustness in multitasking gene networks." *PLoS Computational Biology*. Apr 26. 2012; 8(4):e1002491

Jeffrey V. Wong, Guang Yao, Joseph R. Nevins, and Lingchong You. "Viral-mediated noisy gene expression reveals biphasic *E2f1* response to MYC." *Molecular Cell,* February 4 2011; 41(3):475-485

Jeffrey Wong, Pei-Xiang Li, and Henry J. Klamut. "A Novel p53 Transcriptional Repressor Element (p53TRE) and the Asymmetrical Contribution of Two p53 Binding Sites Modulate the Response of the Placental Transforming Growth Factor-β Promoter to p53." *The Journal of Biological Chemistry*, July 2002; 277: 26699 - 26707

RESEARCH EXPERIENCE

2006	**Research Assistant**	Brian Ingalls (Applied Math, Waterloo)
	'*Design and Construction of a Genetic Clocked Set-Reset Latch*'	
1997-1998	**Research Assistant**	Peter Ray (Molecular Genetics, Toronto)
	'*Cloning Novel Dystrophin-Associated Proteins*'	
1997	**Research Assistant**	Philip Marsden (Medicine, Toronto)
	'*Analysis of Endothelial Constitutive Nitric Oxide Synthase Transcription*'	

SELECTED AWARDS

2010-2011	Duke University Center for Biomolecular & Tissue Engineering	Kewaunee Postdoctoral Award
2005-2006	University of Waterloo Department of Computational Mathematics	Upper-Year Scholarship
2002-2003	Government of Ontario Ministry of Training, Colleges and Universities	Ontario Graduate Scholarship
1997-1998	University of Toronto University College	C.L. Burton Open Scholarship