

# Curriculum Vitae of Pak-Wing Fok

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## EDUCATION

- Ph.D. Mathematics, Massachusetts Institute of Technology 2006.  
Thesis Advisor: R. R. Rosales  
Co-Advisor: D. Margetis
- MSci. Mathematics, Imperial College London 2001.

## EXPERIENCE

- Department of Mathematical Sciences, University of Delaware  
Associate Professor (September 2016 – present)
- Department of Mathematical Sciences, University of Delaware  
Assistant Professor (September 2009 – August 2016)
- Center for Applications of Mathematics in Medicine, University of Delaware  
Associate Director for Education (November 2015 - present)
- Department of Biomedical Engineering, University of Delaware  
Affiliated Faculty Member (June 2012 – present)
- Department of Biomathematics, University of California, Los Angeles  
Postdoctoral Scholar (September 2006 – August 2009)  
Postdoctoral Advisor: Professor Tom Chou
- Applied and Computational Mathematics, California Institute of Technology  
Von Kármán Instructor (October 2006 – March 2009)
- Lawrence Livermore National Laboratory  
Computation Directorate Scholar (Summer 2004, 2005)

## VISITING POSITIONS

- Department of Mathematics, Imperial College London  
September 2018 - December 2018

## Curriculum Vitae of Pak-Wing Fok

- Department of Mathematics, Chinese University of Hong Kong  
January 2010-February 2010
- Applied and Computational Mathematics, California Institute of Technology  
March 2009-August 2009

### GRANTS

#### *Current:*

- Simons Foundation, Collaboration Grant for Mathematicians (\$35,000) “Biomechanical Models for Intimal Thickening and Vulnerable Plaque,” 09/01/2013 – 08/31/2019.

#### *Completed:*

- Delaware-ACCEL SHoRe Award, \$19,003 “Computer Simulations of Atherosclerosis,” 12/01/17 – 05/30/18.
- Center for Teaching and Assessment of Learning and Institute for the Transformation of Undergraduate Education (\$750), BioQUEST Conference Registration and Participation (June 21st – 28th, 2014)
- University of Delaware Research Foundation (UDRF) Grant (\$35,000) “Stochastic models of unfolding proteins,” 06/01/2010 - 05/31/2012.

### AWARDS

- Excellence in Teaching Award nomination, (Spring 2013, University of Delaware).
- Charles and Holly Housman Award for Excellence in Teaching (2006, MIT).
- Akamai Presidential Graduate Fellowship (2002, MIT).
- The Governor’s Prize for Best MSci. Student (2001, Imperial College).

### RESEARCH INTERESTS

- Mathematical modeling of atherosclerosis and mechanisms of plaque formation
- Stochastic processes in biological systems
- Operations Research: supply chain and inventory management, clinical trial models

### PEER-REVIEWED PUBLICATIONS

*Note on authorship order:* the order of authors is a reflection of how much each author contributes intellectually to the paper. The first author usually writes the majority of the paper, the second author makes the next biggest contribution etc. The exception to this rule is that for papers with three authors or more, the final author is often the supervisor or senior member of the research group and originates the idea for the paper.

**Refereed Conference Proceedings**

- 4. N. Mohammad Mirzaei and **P.-W. Fok**, Three Dimensional Finite Element Simulation of Atherosclerosis via Morphoelasticity, *Molecular and Cellular Biomechanics* **16**, Supplemental 2, pp 32 – 33.
- 3. P.-W. Fok, Mechanical model of Glagov remodeling in coronary arteries, 5th International Conference on Computational and Mathematical Biomedical Engineering, Pittsburgh (Volume 1, 2017).
- 2. K. R. Ghusinga, **P.-W. Fok** and A. Singh, Optimal auto-regulation to minimize first-passage time variability in gene expression, 2015 American Control Conference, Chicago
- 1. M. G. Doyle, T. L. Stepien, **P.-W. Fok**, H. Huang, G. Lewis, S. Sivalognathan, R. Vandiver and C. A. Simmons, Numerical Methods for the Calculation of Material Parameter Values for Three-layered Aortic Valve Leaflets. 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013)

**Refereed Journals**

- 29. N. Mohammad Mirzaei and **P.-W. Fok**, Intimal Growth in Cylindrical Arteries: Impact of Anisotropic Growth on Glagov Remodeling, under review.
- 28. **P.-W. Fok** and K. Gou, Finite Element Simulation of Intimal Thickening in 2D Arterial Cross Sections by Morphoelasticity, under review.
- 27. M. Houser and **P.-W. Fok**, Convergence of Sums of Dependent Bernoulli Random Variables: An Application from Portfolio Theory, *Communications in Statistics: Theory and Methods* **48** (23) (2019)
- 26. **P.-W. Fok** and P. Lanzer, Media sclerosis drives and localizes atherosclerosis in peripheral arteries, *PLoS ONE* **13** (10) (2018)
- 25. K. Gou, **P.-W. Fok** and Y. Fu, Nonlinear Tubular Organ Modeling and Analysis for Tracheal Angioedema by Swelling-Morphoelasticity, *Journal of Engineering Mathematics* 112 (1) pp 95 – 117 (2018)
- 24. Y. Zhou and **P.-W. Fok**, Folding Kinetics of Proteins with Multiple Domains: Inference of Transition Rates from Extinction Times, *Journal of Physics Communications* **2** (7) 075002 (2018)
- 23. R. Austin, S. Fones, D. Santoleri, K. Thomsen and **P.-W. Fok**, “Derivation of Explicit Solutions Describing Early Stages of Platelet Activation,” *American Journal of Undergraduate Research* **14** (3) pp 101 – 117 (2017)
- 22. **P.-W. Fok** and R. Sanft, “A Mechanical and Biochemical Model of Injury-Induced Intimal Thickening,” *Mathematical Medicine and Biology* **34** (1) pp 77 - 108 (2017)
- 21. **P.-W. Fok**, “Multi-layer Model of Glagov Remodeling in Coronary Arteries: Differences between In-vivo and Ex-vivo measurements,” *PLoS ONE* **11** (7) (2016)
- 20. A. J. Fleishhacker and **P.-W. Fok**, “An Entropy Based Methodology for Valuation of Demand Uncertainty Reduction,” *Decision Sciences* **46** (6) (2015)
- 19. J. Chang, **P.-W. Fok** and T. Chou, “Bayesian Uncertainty Quantification for Bond Energies and Mobilities Using Path Integrals,” *Biophysical Journal* **109** (5) pp 966 - 974 (2015).
- 18. **P.-W. Fok**, “A Linearly Fourth Order Multirate Runge-Kutta Method with Error Control,” *Journal of Scientific Computing* (2015); doi: 10.1007/s10915-015-0017-4.
- 17. A. J. Fleischhacker and **P.-W. Fok**, “On the Relationship between Entropy, Demand Uncertainty, and Expected Loss,” *European Journal of Operational Research* **245** (2) pp 623 – 628 (2015)
- 16. **P.-W. Fok**, Q. Han and T. Chou, “Reconstruction of a persistent random walk from exit time distributions,” *IMA Journal of Applied Mathematics* **80**(1) pp 1 – 23 (2015) doi: 10.1093/imamat/hxt011

- 15. **P.-W. Fok**, X. Yan and G. Yao, "Analysis of Credit Portofolio Risk using Hierarchical Factor Models," *Journal of Credit Risk* **10** (4) pp 1 – 26 (2014)
- 14. Q. Han and **P.-W. Fok**, "Reconstructing the transition rate function of a Broadwell random walk from exit times," *SIAM Journal on Applied Mathematics* **74** pp 676 - 696 (2014)
- 13. F.-B. Tian, L. Zhu, **P.-W. Fok** and X.-Y. Lu, "Simulation of a pulsatile non-Newtonian flow past a stenosed 2D artery with atherosclerosis," *Computers in Biology and Medicine* **43** pp 1098 - 1113 (2013)
- 12. **P.-W. Fok** and T. Chou, "Reconstruction of the Bellman-Harris branching process from extinction probabilities and number distributions," *Journal of Statistical Physics* **152** (4) pp 769 - 786 (2013) doi: 10.1007/s10955-013-0781-1
- 11. **P.-W. Fok**, "Drift Reconstruction from First Passage Time Data using the Levenberg-Marquardt Method," *Inverse Problems in Science and Engineering* **21** (8) pp 1288-1309 (2013) doi: 10.1080/17415977.2012.757313
- 10. **P.-W. Fok**, "Mathematical model of intimal thickening in atherosclerosis: Vessel stenosis as a free boundary problem," *Journal of Theoretical Biology* **314** pp 23-33 (2012)
- 9. **P.-W. Fok**, "Growth of Necrotic Cores in Atherosclerotic Plaque," *Mathematical Medicine and Biology* **29**(4) pp 301-327 (2012)
- 8. **P.-W. Fok** and T. Chou, "Reconstruction of potential energy profiles from multiple rupture time distributions," *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* **466** 2124 pp 3479-3499 (2010)
- 7. **P.-W. Fok** and T. Chou, "Accelerated search kinetics mediated by redox reactions of DNA repair enzymes," *Biophysical Journal* **96** pp 3949-3958 (2009)
- 6. **P.-W. Fok** and T. Chou, "Interface growth driven by surface kinetics and convection," *SIAM Journal of Applied Mathematics* **70**(1) pp 24-39 (2009)
- 5. **P.-W. Fok**, C.-L. Guo and T. Chou, "Charge-transport mediated recruitment of DNA repair enzymes," *Journal of Chemical Physics* **129** 235101 (2008)
- 4. **P.-W. Fok**, R. R. Rosales and D. Margetis, "Facet evolution on supported nanostructures: Effect of finite height," *Physical Review B* **78** 235401 (2008)
- 3. S. Nowak, **P.-W. Fok** and T. Chou, "Dynamic boundaries in asymmetric exclusion processes," *Physical Review E* **76** 031135 (2007)
- 2. **P.-W. Fok**, D. Margetis and R.R. Rosales, "Unification of step bunching phenomena on vicinal surfaces," *Physical Review B* **76** 033408 (2007)
- 1. D. Margetis, **P.-W. Fok**, M.J. Aziz and H.A. Stone, "Continuum theory of nanostructure decay via a microscale condition," *Physical Review Letters* **97** 096102 (2006)

## COURSES TAUGHT

### *University of Delaware*

- Math 617: Introduction to Applied Mathematics II (Spring 2014, Spring 2015, Spring 2016, Spring 2018)
- Math 616: Modeling in Applied Mathematics (Fall 2010, Fall 2015)
- Math 567: Mathematical Modeling Winter Workshop (Winter 2015, Winter 2016)

## Curriculum Vitae of Pak-Wing Fok

- Math 512: Contemporary Applications of Mathematics (Fall 2016, Fall 2017, Fall 2019)
- Math 460/660: Introduction to Systems Biology (Fall 2013, Fall 2014)
- Math 353: Engineering Mathematics III (Spring 2013, Fall 2015, Fall 2016, Spring 2019)
- Math 302: Differential Equations (Spring 2010, Fall 2011, Fall 2017, Spring 2019)
- Math 260: Integrative Seminar (Spring 2011, Spring 2013, Spring 2014, Spring 2016, Spring 2017, Spring 2018)
- Math 242: Analytic Geometry and Calculus B (Spring 2017, Summer 2017, Summer 2018)
- Math 241: Analytic Geometry and Calculus A (Fall 2009, Fall 2010, Spring 2011, Fall 2011, Fall 2012, Fall 2014, Summer 2016)

### *California Institute of Technology*

- ACM101a, ACM101c: Methods of Applied Mathematics I (Fall and Spring 2008)
- ACM104: Linear Algebra (Winter 2008),
- ACM106b, ACM106c: Introduction to Computational Methods (Winter and Spring 2007)

### *Massachusetts Institute of Technology*

- 18.075: Advanced Calculus for Engineers (Summer 2004, Primary Instructor)
- 18.03: Differential Equations (Spring 2005, Fall 2005, Spring 2006, Recitation Leader)

## REVIEWING ACTIVITIES

- 2019: *Bulletin of Mathematical Biology*, *Journal of Mathematical Biology*, *PLoS ONE*
- 2018: *SIAM Journal on Multiscale Modeling and Simulation*, *Journal of Engineering Mathematics*, *Communications in Statistics: Theory and Methods*, *Journal of Mathematical Biology*, *The Engineering Economist*
- 2017: *SIAM Journal on Multiscale Modeling and Simulation* (2 articles), *Bulletin of Mathematical Biology*, *Journal of Theoretical Biology*, *The Engineering Economist*, *Journal of Engineering Mathematics*
- 2009 - 2016: *Applications and Applied Mathematics*, *AIMS Molecular Science*, *Computers in Biology and Medicine*, *Communications in Computational Physics*, *Hacettepe Journal of Mathematics and Statistics*, *Journal of Mathematical Biology*, *Journal of Medical Devices*, *Journal of Computational Physics*, *Journal of Theoretical Biology*, *Journal of Credit Risk*, *Mathematical Biosciences*, *Mathematical Methods in the Applied Sciences*, *Microvascular Research*, *PLoS ONE*, *SIAM Review*, *SIAM Journal on Multiscale Modeling and Simulation*, *SIAM Journal on Applied Mathematics*.
- Review Editor, *Frontiers in Bioinformatics and Computational Biology*

## SERVICE

### *Organization of Workshops and Conferences*

- Graduate Student Mathematical Modeling Camp (GSMMC), Rensselaer Polytechnic Institute, Troy, NY, 16th - 19th June 2015, Invited Faculty Mentor and Problem Presenter

## *Curriculum Vitae of Pak-Wing Fok*

- SIAM Life Sciences Conference, Charlotte, NC, 4th - 7th August 2014, “Biomechanics in Medicine,” Minisymposium Co-organizer (with Rebecca Sanft)
- SIAM Life Sciences Conference, San Diego, CA, 7th-10th August 2012, “Applications of Mathematics in Atherosclerosis: Diagnosis, Modeling and Prediction,” Minisymposium organizer
- 7th International Congress on Industrial and Applied Mathematics (ICIAM), Vancouver, July 2011. “Mathematical Modeling and Computational Studies for Complex Biological systems,” Minisymposium Co-organizer

### *College Committees*

- Foundational Undergraduate Science Education (FUSE) committee (Spring 2016)

### *University Committees*

- Board of Senior Thesis Readers, University of Delaware (2009-2011)
- Goldwater Scholarship Review Committee, University of Delaware (2011)

### *Departmental Committees at University of Delaware*

- Calculus Instructor Search Committee (Fall 2017 – Spring 2018)
- Colloquium Committee (Fall 2016 (Chair), Fall 2017 – Spring 2018)
- Continuing Track Search Committee (Fall 2016)
- Development Committee (Fall 2019 - Spring 2020)
- Tenure Track Search Committee (Fall 2014 – Spring 2015)
- Probability Search Committee (Fall 2013 – Spring 2014)
- Undergraduate Committee (Fall 2014 - Fall 2015, Fall 2019 - Spring 2020)
- Graduate Committee (Fall 2011, Fall 2012 – Fall 2013)
- Outreach Committee (Fall 2009, Spring 2010)
- Convocation Committee (Fall 2010, Spring 2011)
- NSF Graduate Fellowship Writing Workshop, Organizer (Fall 2011, Fall 2012)
- Applied Mathematics Seminar, Organizer (Fall 2010 – Spring 2014, Fall 2016 - Present)
- Math Club Faculty Advisor (Fall 2015 – present)

### *Other Departmental Service Duties*

- Faculty Advisor/Mentor for 3 teams in Mathematical Contest in Modeling (Winter 2017). Designations: Finalist, Honorable Mention, Successful
- Faculty Advisor/Mentor for Mathematical Contest in Modeling teams (Winter 2015)

**STUDENT ADVISING AND MENTORSHIP***Doctoral Research Supervision*

Student	Title of Thesis	Date Degree Conferred
Hansen Pei (co-advisee with Lou Rossi)	TBD	2021 (expected)
Navid Mirzaei	TBD	2020 (expected)
Yingxiang Zhou	Estimation and Inference in Problems from Imaging and Biophysics	8/2018
Qunhui Han	Simulation and Analysis of First Passage Time Problems	12/2013

*Master's Research Supervision*

Student	Title of Thesis	Date Degree Conferred
Madelyn Houser	Accuracy and Convergence of the Asymptotic Single Risk Factor Model for Credit Portfolio Loss	6/2016

*General Graduate Research Supervision*

Student	Title of Research Project	Dates	Funding/Program
Chen Hua	Pricing Demand Samples in a Newsvendor Model for hit-or-miss loss functions	Summer 2015	UniDel Fellowship
Steve McClure	Mathematical Model of Intimal Thickening	Summer 2011	UniDel Fellowship

*Undergraduate Research Supervision*

Student	Title of Research Project	Dates	Funding/Program
Matt Benvenuto	Compartment Model of Media Sclerosis	Summer 2019	University of Delaware Summer Scholars Program
Rachel Austin	Derivation of Explicit Solutions Describing Early Stages of Platelet Activation	Spring 2017	None: Continuation of MATH512 Capstone Project
Scott Fones	Derivation of Explicit Solutions Describing Early Stages of Platelet Activation	Spring 2017	None: Continuation of MATH512 Capstone Project
Dominic Santoleri	Derivation of Explicit Solutions Describing Early Stages of Platelet Activation	Spring 2017	None: Continuation of MATH512 Capstone Project
Kaitlyn Thomesen	Derivation of Explicit Solutions Describing Early Stages of Platelet Activation	Spring 2017	None: Continuation of MATH512 Capstone Project
Gin Wang	Numerical Method to Price Demand Samples in a Newsvendor Model	Summer 2015	Undergraduate Research Summer Fellowship
Wenbo Min	Completion Times of Clinical Trials	Summer 2014	Chinese University of Hong Kong
Weining Xin	Simulation of a multi-type Bellman-Harris branching process	Summer 2013	Chinese University of Hong Kong/University of Delaware Exchange Program
Olivia Hessling	Estimation of Recruitment Probabilities for Clinical Drug Trials	Summer 2013	University of Delaware Summer Scholars Program
Colleen Moens	Mathematical Modeling of Cholesterol Efflux in Foam Cells	Summer 2012 and Winter 2013	University of Delaware Science and Engineering Summer Scholarship
Kam-Piu Eddy Tsang	Simulation of first passage times for a diffusion process	Summer 2011	Chinese University of Hong Kong/University of Delaware Exchange Program
Nathan Giguere	Oscillations of a nonlinear pendulum	Winter 2011	Independent Study
Dahye Song (co-mentor)	Modeling of DNA repair enzymes	Summer 2008	Caltech SURF (Summer Undergraduate Research Fellowship) program

**PRESENTATIONS AND INVITED TALKS**

- 91. American Heart Association Scientific Sessions, Philadelphia, 18th November 2019, *Thickened Intimas and High Densities of Macrophages are Required for Necrosis in Arterial Sections: Towards a General Computational Framework* (poster)
- 90. New Jersey Institute of Technology, Department of Mathematical Sciences, Applied Mathematics Colloquium, 25th October 2019, *Simulating the Vulnerable Atherosclerotic Plaque through Morphoelasticity*



Curriculum Vitae of Pak-Wing Fok

- 89. Temple University, Department of Mathematics, Applied Mathematics and Scientific Computing Seminar, 18th September 2019, *Morphoelastic Modeling of Intimal Thickening in Arteries*
- 88. Penn State University, Department of Mathematics, Theoretical Biology Seminar, 5th February 2019, *Simulation of Intimal Thickening in Arteries by Morphoelasticity*
- 87. University of Cambridge, Department of Applied Mathematics and Theoretical Physics (DAMTP) BioLunch Seminar, 3rd December 2018, *Simulation of Intimal Thickening in Arteries by Morphoelasticity*
- 86. Imperial College London, Department of Earth Science and Engineering, Computational Geosciences Seminar, 2nd November 2018, *A Gentle Introduction to Nonlinear Elasticity for Finite Elements*
- 85. University of Oxford, Mathematical Biology and Ecology Seminar, 26th October 2018, *Simulation of Intimal Thickening in Arteries through Morphoelasticity*
- 84. University of Edinburgh, Biomathematics Seminar, 2nd October 2018, *Inference of Rates in a Birth-Death Process from Conditional Extinction Times: an Application to Protein-Folding Kinetics*
- 83. Society for Mathematical Biology, University of Sydney, Australia, 12th July 2018, *Arterial Remodeling in Atherosclerosis*
- 82. University of Delaware, Engineering Camp, 28th June 2018, *Pantographs: Scaling, Dimension and Similarity*
- 81. MathCounts Session Presentation, University of Delaware, 10th January 2018, *Star Wars and a Jedi Mind Trick*
- 80. Joint Math Meetings, San Diego, 12th January 2018, *Mucosal Folding and Growth Instabilities in a Finite Element Model of an Atherosclerotic Artery*
- 79. ACCEL Tech Talk, Christiana Hospital, Values Institute, 7th December 2017, *In-Silico Simulations of Atherosclerosis*
- 78. 5th International Conference on Computational and Mathematical Biomedical Engineering (CMBE17), Pittsburgh, 11th April 2017, *Mechanical Model of Glagov Remodeling in Coronary Arteries*
- 77. MathCounts Session Presentation, University of Delaware, 9th January 2017, *Mathematics, Box Office Prediction and the Marvel Cinematic Universe*
- 76. “College Day” presentation to students of Carver High School (Philadelphia), University of Delaware, 28th October 2016, *Mathematics, Box Office Prediction and the Marvel Cinematic Universe*
- 75. American Physical Society, Mid-Atlantic Section, University of Delaware, 16th October 2016, *Multi-layer Mechanical Model of Glagov Remodeling in Coronary Arteries: Difference between In-vivo and Ex-vivo Measurements*
- 74. University of Delaware, Applied Mathematics and Mathematical Medicine and Biology Seminar, 13th September 2016, *Scaling of Error in Vasicek’s Credit Portfolio Formula*
- 73. European Congress on Mathematical and Theoretical Biology, Nottingham, U. K., 14th July 2016, *A Biochemical and Mechanical Model of Injury-Induced Intima Thickening*
- 72. DelMar Numerics Day, George Mason University, 14th May 2016, *Reconstruction of Transition Rates from Exit Times in a Broadwell Process*
- 71. American Physical Society, Baltimore, 17th March 2016, *Bayesian Uncertainty Quantification for Bond Energies and Mobilities Using Path Integral Analysis*

Curriculum Vitae of Pak-Wing Fok

- 70. Christiana Care Hospital, Newark, DE, Cardiovascular Grand Rounds, 27th January 2016, *Mathematical Model of Glagov Remodeling*
- 69. Harvard University, Widely Applied Math Seminar, 15th December 2015, *Keep away from those hamburgers! Mathematical models of atherosclerosis*
- 68. Texas A&M University, Society of Engineering Science (SES) 2015, 26th October 2015, *A Biochemical and Mechanical Model of Injury-Induced Intimal Thickening*
- 67. Christiana Care Hospital, Innovative Discovery Series, 23rd October 2015, *A Quantitative Model for Glagov Remodeling in Atherosclerosis*
- 66. Rensselaer Polytechnic Institute, NY, Graduate Student Mathematical Modeling Camp (GSMMC), 16th June 2015, *Localized Factor Models in Credit Risk Analysis*
- 65. University of Delaware, DE, Department Colloquium, 20th March 2015, *Mathematical Modeling of Atherosclerosis*
- 64. University of California San Diego, CA, 7th October 2014, *Mathematical Modeling of Atherosclerosis*
- 63. SIAM Life Sciences Conference, Charlotte, NC, 4th August 2014, *A Mechanical and Biochemical Model of Intimal Hyperplastic Lesions*
- 62. University of Delaware, Newark, DE, Bioquest 2014 Workshop, June 22nd 2014, *Modeling Phage in a Predator-Prey System*
- 61. American Physical Society, Denver, CO, 6th March 2014, *A Mechanical and Biochemical Model of Intimal Atherosclerotic Lesions*
- 60. University of Minnesota, Mathematical Biology seminar, Minneapolis, MN, 4th March 2014 *Mathematical Modeling of Atherosclerosis*
- 59. Temple University, Applied Mathematics and Scientific Computing seminar, Philadelphia, PA, 19th February 2014 *Mathematical Models of Atherosclerosis*
- 58. Ohio State University, Mathematical Biosciences Institute (MBI), Columbus, OH, August 28th 2013 *Mathematical Model of Intimal Thickening: An Application to Atherosclerosis*
- 57. University of Delaware, Delaware Biotechnology Institute, Newark, DE, February 25th 2013, *Mathematical Model of Intimal Thickening: An Application to Atherosclerosis*
- 56. University of Delaware, Newark, DE, January 25th 2013, MathCounts Keynote Lecture, *Monty Hall Gameshow – Let's Make a Deal!*
- 55. University of California, Los Angeles, 18th October 2012, Biomathematics Seminar, *A mathematical model of intimal thickening: an application to atherosclerosis*
- 54. University of Delaware, Newark, 4th September 2012, Applied Math Seminar, *A mathematical model of intimal thickening: an application to atherosclerosis*
- 53. SIAM Life Sciences Conference, San Diego, 8th August 2012, *A Mathematical Model for Intimal Thickening*
- 52. University of Maryland, Baltimore County, 5th March 2012, Department Seminar, *Mathematical Models of Atherosclerosis*
- 51. The Ohio State University, 23rd February 2012, Department Seminar, *Mathematical Models of Atherosclerosis*
- 50. Massachusetts Institute of Technology, Physical Math Seminar, 21st February 2012, *Mathematical Models of Atherosclerosis*

Curriculum Vitae of Pak-Wing Fok

- 49. California State University, Northridge, Applied Mathematics Seminar, 16th February 2012, *Mathematical Models of Atherosclerosis*
- 48. University of Delaware, Newark, MathCounts Keynote Lecture, 20th January 2012, *“The Konigsburg Bridge Problem*
- 47. Rowan University, Glassboro, NJ, 17th November 2011, *Careers in Biomathematics*
- 46. 48th Annual Technical Conference of Society of Engineering Sciences (SES 2011), Northwestern University, Evanston, 12th October 2011, *Mathematical aspects of epitaxial growth: asymptotics, conservation laws and multiscale modeling*
- 45. Indiana University Purdue University (IUPUI), Indianapolis, Department of Mathematical Sciences, Department Colloquium, 7th October 2011, *Mathematical Models of Atherosclerosis*
- 44. University of Maryland, Department of Mathematics, PDE and Applied Math Seminar, 29th September 2011, *Acceleratio of DNA repair by charge-transport: stochastic analysis and deterministic models*
- 43. 7th International Congress on Industrial and Applied Mathematics (ICIAM), Vancouver, 21st July 2011, *Reconstruction of Potential Energy Profiles from Exit Time Distributions*
- 42. 7th International Congress on Industrial and Applied Mathematics (ICIAM), Vancouver, 18th July 2011, *Growth of Necrotic Cores in Atherosclerotic Plaque*
- 41. University of Delaware, Departmental Seminar, Department of Chemistry and Biochemistry, Newark, DE, 16th May 2011, *DNA Search and Repair: How do Glycosylases find damaged bases so quickly?*
- 40. University of Delaware, Center for Biomedical Engineering Research (CBER) Symposium, Newark, DE, 13th May 2011, *Growth of Necrotic Cores in Vulnerable Plaque*
- 39. American Physical Society, Dallas, TX, March 21st 2011, *Growth of Necrotic Cores in Vulnerable Plaque*
- 38. Biophysical Conference, Baltimore, MD, March 7th 2011, *Reconstruction of bond potentials from rupturing time distributions* (poster)
- 37. University of Delaware, Delaware Biotechnology Institute, Newark, DE, October 14th 2010, *DNA Search and Repair: How do Glycosylases find damaged bases so quickly?*
- 36. SIAM Conference on the Life Sciences, Pittsburgh, PA, July 12th - July 15th 2010, *Accelerated DNA Repair by Charge Transport: Stochastic Analysis and Deterministic Models*
- 35. Oxford University, UK, Oxford Centre for Collaborative Applied Mathematics (OCCAM) Modelling at Different Scales in Biology 21st - 23rd June 2010, *Accelerated Target Selection by Repair Enzymes through Charge Transport* (poster)
- 34. Education on the Edge 2010, University of Delaware, June 9th - June 11th 2010, *DNA Search and Repair: How do Glycosylases find damaged bases so quickly?*
- 33. American Physical Society, Portland, OR, March 17th 2010, *Reconstruction of potential energy profiles from multiple rupture time distributions*
- 32. The Ohio State University, Mathematical Biosciences Institute, Workshop on Protein-DNA interactions, March 8th 2010, *Accelerated Target Selection by Repair Enzymes through Charge Transport* (poster)
- 31. University of Delaware, Department of Mathematical Sciences, February 16th 2010, *Reconstruction of bond potentials from rupturing time distributions*

Curriculum Vitae of Pak-Wing Fok

- 30. Hong Kong University of Science and Technology, Department of Mathematics, Croucher Lab Seminar, January 19th 2010, *Reconstruction of bond potentials from rupturing time distributions*
- 29. Hong Kong University of Science and Technology, Bioengineering Program, January 6th 2010, *Acceleration of DNA repair by charge-transport*
- 28. Temple University, Department of Mathematics, November 9th 2009, *Reconstruction of bond potentials through rupturing time distributions*
- 27. George Mason University, Department of Mathematics, October 30th 2009, *Reconstruction of bond potentials through rupturing time distributions*
- 26. Gordon Research Conference on Thin Film and Crystal Growth Mechanisms July 12th – July 17th 2009, Colby-Sawyer College, NH, *Mathematical aspects of epitaxial growth: asymptotics and conservation laws* (poster)
- 25. Kinetic Description of Multiscale Phenomena: Young Researchers Workshop March 2nd – March 5th 2009, Center for Scientific Computation and Mathematical Modeling (CSCAMM), University of Maryland, *Acceleration of DNA repair through Charge-Transport: stochastic analysis and deterministic models*
- 24. Biophysical Conference, Boston, MA, February 28th – March 4th 2009, *Accelerated target selection by Repair Enzymes through Charge Transport* (poster)
- 23. University of Utah, Department of Mathematics, February 19th 2009, *Mathematical aspects of epitaxial growth: asymptotics, conservation laws and multiscale modeling*
- 22. University of Utah, Department of Mathematics, February 18th 2009, *Acceleration of DNA repair through Charge-Transport: stochastic analysis and deterministic models*
- 21. University of South Carolina, Department of Mathematics, February 16th 2009, *Mathematical aspects of epitaxial growth: asymptotics, conservation laws and multiscale modeling*
- 20. University of Delaware, Department of Mathematical Sciences, February 5th 2009, *Acceleration of DNA repair through Charge-Transport: stochastic analysis and deterministic models*
- 19. North Carolina State University, Department of Mathematics, February 3rd 2009, *Acceleration of DNA repair through Charge-Transport: stochastic analysis and deterministic models*
- 18. Northwestern University, Department of Engineering Science and Applied Mathematics, January 20th 2009, *Acceleration of DNA repair through Charge-Transport: stochastic analysis and deterministic models*
- 17. University of Alberta, Department of Mathematical and Statistical Sciences, January 12th 2009, *Search of DNA repair enzymes through a Charge-Transport mechanism*
- 16. Michigan State University, Department of Mathematics, December 1st 2008, *Search of DNA repair enzymes through a Charge-Transport mechanism*
- 15. Q-Bio Conference on Cellular Information Information Processing, Santa Fe, NM, August 6th – 9th 2008, *Guanine Mediated Adsorption of DNA Repair Proteins* (poster)
- 14. SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, PA, 11th – 14th May 2008, *Facet Evolution on Supported Nanostructures: effect of Finite Height*
- 13. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 2007, *Nutrient Diffusion through Subretinal Implants* (poster)
- 12. California Institute of Technology, Applied and Computational Mathematics Colloquium, 12th March 2007, *Relaxation of crystal surfaces through step-flow models*

Curriculum Vitae of Pak-Wing Fok

- 11. American Physical Society, Denver, CO, 5th – 9th March 2007, *Free boundaries in driven diffusive systems*
- 10. Gordon Conference on Thin Films and Small Scale Mechanical Behavior, Colby College, ME, 30th July – 4th August 2006, *Step Bunching on Axisymmetric Crystal Surfaces* (poster)
- 9. 7th World Conference on Computational Mechanics, Los Angeles, CA, 16th – 22nd July 2006, *Multi-adaptive Integration of Step-Flow Equations*
- 8. École Polytechnique Fédérale de Lausanne, Switzerland, MIT-EPFL Joint Seminar, 29th May 2006, *Fluid Dynamics of Soap Films*
- 7. UC Santa Barbara, Department of Mechanical Engineering Seminar, 13th March 2006, *Relaxation of crystal surfaces through step-flow models*
- 6. California Institute of Technology, Applied and Computational Mathematics Colloquium, 10th March 2006, *Relaxation of crystal surfaces through step-flow models*
- 5. Lawrence Berkeley National Laboratory, Department of Mathematics Colloquium, 8th March 2006, *Relaxation of crystal surfaces through step-flow Models*
- 4. Materials Research Society, Boston, MA, 27th November – 1st December 2005, *Step Bunching on Axisymmetric Crystal Surfaces*, (poster)
- 3. American Physical Society, Chicago, IL, 20th – 22nd November 2005, *Vorticity Dynamics in Soap Films*, P. Fast and P.-W. Fok (Gallery of Fluid Motion)
- 2. ASME International Mechanical Engineering Congress and Exposition, Orlando, FL, November 2005, *Evolution of Step Bunches on 2D Crystal Surfaces*
- 1. UCLA, Institute for Pure and Applied Mathematics, 14th October 2005, *Numerical simulations of stepped crystalline surfaces*