

Peter S. Kim

School of Mathematics and Statistics  
University of Sydney, NSW 2006, Australia

Phone: +61 2 9351 2970  
Email: [peter.kim@sydney.edu.au](mailto:peter.kim@sydney.edu.au)

## Education

- |      |   |
|------|---|
| 2007 | <b>Ph.D. in Applied Mathematics</b> , Stanford University, USA<br>“Mathematical models of the activation and regulation of the immune system”, Advisor: Prof. Doron Levy            |
| 2002 | <b>Part III of the Mathematical Tripos</b> , University of Cambridge, UK<br>Martingales, stochastic calculus, financial mathematics, actuarial statistics, and operational research |
| 2001 | <b>B.Sc. in Mathematics</b> , Massachusetts Institute of Technology, USA<br>with minors in physics and literature   |

## Management education

- |          |  |
|----------|--|
| Oct 2019 | <b>High Potentials Leadership Program</b> , Harvard Business School, USA<br>One-week intensive program for senior leaders:<br>Imperatives of leadership, Leading your team, Leading through emotional intelligence, Managing your network, Leadership presence, Leadership resilience, Leading with purpose.                                     |
| May 2019 | <b>The Leadership Edge</b> , The Wharton School, Univ. of Pennsylvania, USA<br>One-week intensive program on leadership and management:<br>Leadership & teamwork, Leader identity, Talent management, Emotional intelligence, Communication styles & difficult conversations, Leading teams, Coaching skills for leaders, Building your network. |

## Professional experience

- |              |  |
|--------------|--|
| 2011-present | <b>Professor</b> (2021-present),<br>Associate Professor (2017-2020), Senior Lecturer (2014-2016),<br>Lecturer (2011-2013)<br>School of Mathematics and Statistics, University of Sydney, Australia |
| 2008-2011    | <b>Research Assistant Professor</b><br>Department of Mathematics, University of Utah, USA  |
| 2007-2008    | <b>Chateaubriand Postdoctoral Fellow</b><br>Ecole Supérieure d'Electricité & University of Paris VI, France  |

## Research interests

Mathematical biology: immune, cancer, and virus dynamics; human evolution; ordinary, delay, partial differential equations, and agent-based models

## Fellowships and grants

- 2023-2026 **Australian Research Council Discovery Project**  
*Unpacking the immune system with applied mathematics*  
 \$423,000 AU – lead CI with A/Prof. Federico Frascoli, Dr. Robyn Araujo, and international partner Prof. Peter Lee

- 2020-2024 **Australian Research Council Future Fellowship**  
*Mathematically modelling the impact of social dynamics on evolution*  
 \$1,028,533 AU – sole CI
- 2019-2020 **University of Sydney Research Accelerator Fellowship (SOAR)**  
*A paradigm-shifting view of immune dynamics*  
 \$150,000 AU – sole CI
- 2018-2021 **Australian Research Council Discovery Project**  
*Dynamical systems and mathematical modelling of viral infections*  
 \$401,706 AU – lead CI with Dr. Federico Frascoli, A/Prof. Adelle Coster, and international partner Prof. Chae-Ok Yun
- 2017-2018 **University of Sydney & Yonsei University Joint Research Funding**  
*Using viruses for good: modulating anti-cancer immunity*  
 \$20,000 AU – co-CI with Prof. Jeehyun Lee
- 2016-2019 **Australian Research Council Discovery Project**  
*Human longevity: Modelling social changes that propelled its evolution*  
 \$416,775 AU – sole CI with international partner Prof. Kristen Hawkes
- 2015 **University of Sydney Bridging Support Grant**  
*Mathematical Modelling of Human Life History Evolution*  
 \$30,000 AU.
- 2012-2015 **Australian Research Council Discovery Early Career Research Award**  
*Mathematical modelling of breast cancer immunity*  
 \$375,000 AU – sole CI
- 2007-2008 Chateaubriand Postdoctoral Fellowship
- 2001-2004 National Science Foundation Graduate Research Fellowship
- 2001-2002 Cambridge Overseas Trust for postgraduate studies

#### Other funding

---

- Jan-Nov 2020 **2020 Student Life Grant, University of Sydney**  
 “Experiencing mathematical community and creativity: Building a cohort identity” (with M. Radnovic, M. Lim, M. Davy, N. Joshi, S. Tillmann, J. Parkinson, E. Altmann, O. Yacobi): \$2,740 AU.
- Aug-Nov 2019 **2019 Student Life Grant, University of Sydney**  
 “Experiencing mathematical community and creativity through mentoring” (with H. Browne, N. Joshi, J. Parkinson, M. Radnovic, S. Tillmann, O. Yacobi): \$2,500 AU.
- Apr-Oct 2018 **2018 Australian Endeavour Research Fellowship** (with Dr. Ke Wang)  
 Research fellowship to support a six-month visit of Dr Ke Wang (Shanghai University, Shanghai, China) to the University of Sydney to work on mathematical modelling of airline slot auctions in collaboration with A/Prof Xiaowen Fu (Institute of Transport and Logistics Studies, University of Sydney).
- Jan 2013 **Sydney International Workshop on Tumour-Immune System Dynamics** (with A. Eladdadi and D. Mallet)  
  - National Science Foundation (Co-PI with A. Eladdadi): \$30,000 US,
  - Australian Mathematical Sciences Institute (PI with A. Eladdadi and D. Mallet): \$7,000 AU,
  - Society for Mathematical Biology (PI with A. Eladdadi): \$2,000 US.

## **Professional activities**

---

Board of Directors of the Society for Mathematical Biology Jul 2018-Sep 2022

Editor: Associate Editor, *Mathematical Biosciences and Engineering*, Sep 2018 – Sep 2021.

Editorial Board, *Letters in Biomathematics*, Mar 2018 – present.

Guest editor (with A. Eladdadi and D. Mallet) of Springer Book on “Mathematical Models of Tumor-Immune System Dynamics”, Nov 2014.

## **Supervision**

---

### **Postdoc / Early-career researcher**

Feb 2023-present	Ayesha Sohail (Fixed term lecturer)
Oct 2021-present	Cody Nitschke
Jul 2021-Sep 2022	Pantea Pooladvand (Fixed-term lecturer)
Feb 2019-Aug 2021	Anet Anelone
Feb 2019-Feb 2020	Siti Ainor Mohd Yatim (visiting from Universiti Sains Malaysia)
Apr – Oct 2018	Ke Wang (visiting from Shanghai University, China)
Jun 2016-Dec 2019	Danya Rose
Jul 2017-Mar 2018 & Mar-Sep 2016	Matthew Chan

### **PhD**

Aug 2019-present	Anthia Le (University of Queensland, co-supervisor)
Jan 2017-present	Collin Zheng
Jan 2017-Jul 2021	Pantea Pooladvand (completed)
Jan 2017-Oct 2020	Adarsh Kumbhari (completed)
Aug 2015-Oct 2019	Adrienne Jenner (completed)
Mar 2015-Mar 2019	Sara Loo (completed)
Jul 2016-May 2017	Anthony Cheung (transferred to another project & supervisor)
Jul 2012-Feb 2016	Matthew Chan (completed)
Jul 2015-Aug 2016	James Reoch (University of Adelaide, external supervisor)
Feb 2012-Feb 2016	David Khoury (UNSW, associate supervisor)

### **Masters**

2016	Collin Zheng (transferred to PhD program)
2015	Jared Field (transferred to PhD program at Oxford University)

### **Honours**

2022	Yige Bian
2022	Charles Lilley
2020-2021	Andre Nunez
2020-2021	Viney Kumar
2020	Zhao-Mei Zheng
2020	Tristan Spiteri
2019	Jaden Costa (co-supervised with Dr Emi Tanaka)
2018	Ke Li

2017	Yuhuang Wu
2017	Ruben Robertson
2016	Hak Joon Kim
2016	Adarsh Kumbhari
2015-2016	Pantea Pooladvand
Aug 2014-Jul 2015	Adrienne Jenner
2014	Jared Field
2014	Sara Loo (University of Wollongong, co-supervisor, A/Prof Annette Worthy was the primary supervisor)
2013	Andrea Cooper
2012	James Reoch

### Internship

---

Mar – Aug 2019	Steve Laubie Five-month internship on agent-based modelling of tumour-immune dynamics as part of his undergraduate program at ENSTA ParisTech (École nationale supérieure de techniques avancées).
Mar – Aug 2018	Ilham Harmach Five-month internship on agent-based modelling of tumour-immune dynamics as part of her undergraduate program at ENSTA ParisTech (École nationale supérieure de techniques avancées).

### Undergraduate research (before honours)

---

2019-2020 summer	<b>Denison Scholars</b> , University of Sydney Supervised with Dr Danya Rose six 2 <sup>nd</sup> and 3 <sup>rd</sup> -yr students (Mikaela Jackson, Viney Kumar, Keenan Lee, Andre Nunez (volunteer), Ziyuan Wang, and Zhao-Mei Zheng (volunteer)) on “Mathematically modelling the dynamics of human behavior during bushfire evacuation”
2019 sem 2	<b>Dalyell Showcase</b> , University of Sydney Supervised (with 3 <sup>rd</sup> -yr mentor Mikaela Jackson) six 1 <sup>st</sup> -yr students (Helen Chen, Alison Eom, Kris Martyn, Serena Nian, Kevin Sun, Simon Tang) on a project on “Which periodicity drove the evolution of human post-menopausal longevity?” as part of the thematic year on “Periodicity”.
2019 sem 1	<b>Talented Student Program</b> , University of Sydney Supervised David Hyland (3 <sup>rd</sup> -yr student) on an independent project on “Mathematical modelling of male mating strategies”.
2019	<b>Pre-honours supervision</b> Supervised Aurora (Chenchen) Wu on mathematical modelling oncolytic virotherapy in preparation for future enrolment in applied mathematics honours.
2018-2019 summer	<b>AMSI (Australian Mathematical Sciences Institute) Vacation Scholar</b> , University of Sydney Supervised 2 <sup>nd</sup> to 3 <sup>rd</sup> -yr student Nicholas Fazio on a six-week project on “Mathematical modelling of mating strategies among primates”.
2018 sem 2	<b>Dalyell Showcase</b> , University of Sydney Supervised (with 3 <sup>rd</sup> -yr mentor Eric Huang) six 1 <sup>st</sup> -yr students (Maria Djuric, Ross Johnston, Ben Kairaitis, Xanda Kolesnikow, Julian

- Raubenheimer, Ben Street) on a project on “Menopause with a cause: Mathematical modelling the evolution of human post-menopausal lifespans” as part of the thematic year on “Renewal”.
- Mar 2018 – **Dalyell research program** (formerly Talented Student Program) ,  
Jun 2018 University of Sydney  
Supervised Viney Kumar and Katrina Milliner (2<sup>nd</sup>-yr students) on an independent project on “Mathematical modelling of male mating strategies”.
- 2018 sem 1 **Dalyell Showcase** (formerly Talented Student Program), University of Sydney  
Supervised (with 2<sup>nd</sup>-yr mentors Viney Kumar and Katrina Milliner) five 1<sup>st</sup>-yr students (Anastasia Birrell, Elizabeth Rose, Sean Skinner, Shir Ming Sun, and Jing Yang) on a project on “Mathematical modelling of who was raising the next generation of humans in human evolution” as part of the thematic year on “Renewal”.
- July 2017 – **Talented Student Program**, University of Sydney  
Feb 2018 Supervised Viney Kumar and Katrina Milliner (1<sup>st</sup>-yr to 2<sup>nd</sup>-yr students) on an independent project on “Mathematical modelling of male mating strategies”.
- 2017 sem 1 **Talented Student Program Showcase**, University of Sydney  
Supervised (with 3<sup>rd</sup>-yr mentor Kelsey Ann McKinnon and 3<sup>rd</sup>-yr domain expert Vaishnavi Calisa) seven 1<sup>st</sup>-yr students (Jason Chami, Shirley Chen, Viney Kumar, Jung A (Monica) Lee, Katrina Milliner, Andreas Orsmond, and Alexis Zimbulis) on a project on “Modelling the evolution of human post-menopausal lifespans” as part of the thematic year on “Life or death”.
- 2016 sem 2 **Talented Student Program**, University of Sydney  
Supervised 2<sup>nd</sup>-yr student Vaishnavi Calisa on a project on the “Mapping evolutionary fitness landscapes for sexually reproducing species”.
- 2015 sem 2 **Talented Student Program**, University of Sydney  
Supervised 1<sup>st</sup>-yr students Vaishnavi Calisa and Benjamin Xie on a project on the “Effect of introduced parasite on extinction risk of Darwin’s finches”.
- 2015 sem 1 **Talented Student Program Showcase**, University of Sydney  
Supervised (with 3<sup>rd</sup>-yr mentor Edward Burrowes) five 1<sup>st</sup>-yr students (Noah Johnston, Mona Khosh, Kelsey McKinnon, Justin Phu, Stephanie Sun) on a project on “Excited by light: Modelling the motion of phototactic bacteria” as part of the thematic year on “Light”.
- 2013 sem 1 **Winton Charitable Foundation Internship** in Mathematical Biology  
Supervised Jian Cao (3<sup>rd</sup>-year exchange student)
- Nov 2011- **Vacation Scholar Program**, University of Sydney  
Feb 2012 Supervised Edward Kim (3<sup>rd</sup>-yr student on a project on stochastic modelling of biological systems)
- Jun 2010 **Summer Research Experience for Undergraduates (REU)**  
University of Utah, Salt Lake City, USA  
Co-organized (with F. Adler, D. Toth, and V. Camacho) a 3-week summer internship for 17 undergraduates on mathematical and computational modeling of ants, epidemics, and the immune system.

2010-2011    **Research Experience for Undergraduates (REU)**  
 University of Utah, Salt Lake City, USA  
 Supervised an undergraduate biology student on a research project on the mathematical modeling of immune surveillance of cancer.

### Teaching experience

---

- |  |                 |
|--|-----------------|
| • Multivariable calculus and modelling   | Univ. of Sydney |
| • Working seminar B (3 <sup>rd</sup> yr)   | Univ. of Sydney |
| 2 <sup>nd</sup> -semester seminar where advanced students read and present topics            |                 |
| • Nonlinear ordinary diff. equations w/ applications (3 <sup>rd</sup> yr)                    | Univ. of Sydney |
| • Mathematical modelling (1 <sup>st</sup> yr)  | Univ. of Sydney |
| • Linear algebra (1 <sup>st</sup> yr)  | Univ. of Sydney |
| • Partial differential equation models in math biology (honours course – 4 <sup>th</sup> yr) | Univ. of Sydney |
| • Special studies program on epidemic modelling (1 <sup>st</sup> yr)                         | Univ. of Sydney |
| • Introduction to partial differential equations (2 <sup>nd</sup> yr)                        | Univ. of Sydney |
| • Mathematical biology (1 <sup>st</sup> -3 <sup>rd</sup> year graduate)                      | Univ. of Utah   |
| • Second-year graduate journal club  | Univ. of Utah   |
| • Single variable calculus   | Univ. of Utah   |
| • College algebra for business   | Univ. of Utah   |
| • Single variable calculus   | Stanford Univ.  |
| • Linear algebra and calculus of several variables   | Stanford Univ.  |
| • Ordinary Differential Equations  | MIT             |

### Selected conferences and presentations

---

#### Organiser

- |                 |  |
|-----------------|--|
| Jul 13-17, 2021 | Society for Mathematical Biology (SMB) Annual Meeting, University of California, Riverside (virtual meeting).<br>Member of organising committee.   |
| Aug 6-9, 2018   | Society of Industrial and Applied Mathematics (SIAM) Life Sciences Annual Meeting, Minneapolis, USA<br>Member of organising committee with A. Borisyuk, S. Isaacson, V. Booth, T. Chou, D. Levy, M. Lewis, L. Miller, J. Sachs, C. Xue, S. Zhao.           |
| July 8-12, 2018 | Society for Mathematical Biology (SMB) Annual Meeting, University of Sydney, Sydney, Australia.<br>Treasurer and member of local organising committee with M. Myerscough (conference director), A. Coster, J. Murray, and A. Francis.                      |
| Dec 7-11, 2015  | Australian Mathematical Sciences Institute (AMSI) Bioinfo Summer, Mathematical Biology Day, University of Sydney, Sydney, Australia.<br>Co-organiser with J. Yang, M. Myerscough, and N. Armstrong.  |
| Jan 5-9, 2015   | Workshop on “Mathematical Modeling of Tumor-Immune Dynamics: Linking Agent-Based Models and Partial Differential Equation Approaches”, American Institute of Mathematics (AIM), San Jose, USA.<br>Co-organiser with A. Eladdadi, D. Mallet, and C.-O. Yun. |
| Jan 7-10, 2013  | Sydney International Workshop on “Mathematical Models of Tumour-Immune System Dynamics”, University of Sydney, Sydney, Australia.<br>Co-organiser with A. Eladdadi & D. Mallet.  |
|                 | Mathematical Biology Workshop on Building an Interdisciplinary Career,   |

May 2009      University of Utah, Salt Lake City, USA.  
Co-organiser with D. Toth and M. Zajac.

**Lecturer**

Jan-Feb      Australian Mathematical Sciences Institute (AMSI) Summer School,  
2019      University of New South Wales, Sydney, Australia  
Co-taught (with Dr Justin Tzou) a four-week course on “Partial  
differential equation models and methods in mathematical biology” to  
talented honours students.

## Publications

---

1. A.L. Jenner, W. Kelly, M. Dallaston, R. Araujo, I. Parfitt, D. Steinitz, P. Pooladvand, P.S. Kim, S.J. Wade, K.L. Vine (2023) "Examining the efficacy of localised gemcitabine therapy for the treatment of pancreatic cancer using a hybrid agent-based model", *PLoS Computational Biology*, 19(1): e1010104.
2. A.J.N. ANELONE, P. KIM, AND S.K. SPURGEON (2022), "Sliding mode control theory interprets elite control of HIV", in E.A. Hernandez-Vargas, (ed.), *Feedback Control for Personalized Medicine*, Academic Press: 151–171.
3. P. Pooladvand and P.S. Kim (2022), "Modelling oncolytic virus diffusion in collagen-dense tumours", *Frontiers in Systems Biology*, 2: 903512.
4. A. LE, K. HAWKES, AND P.S. KIM (2022), "Male mating choices: The drive behind menopause?", *Theoretical Population Biology*, 145: 126–135.
5. S.L. LOO, D. ROSE, K. HAWKES, AND P.S. KIM (2021), "Mate guarding in primates arises due to partner scarcity, even if the father provides no paternal care at all", *Theoretical Population Biology*, 142: 100–113.
6. C.Y. ZHENG AND P.S. KIM (2021), "Mathematical model for delayed responses in immune checkpoint blockades", *Bulletin of Mathematical Biology*, 83(10): 106.
7. S.A.M. YATIM AND P.S. KIM (2021) "Effects of Movement Control Order on mitigating spread of COVID-19 in the early phase of the outbreak in Malaysia", *J. Phys.: Conf. Ser.* 1988: 012009.
8. A.J.N. ANELONE, E.J. HANCOCK, N. KLEIN, P. KIM, AND S.K. SPURGEON (2021), "Control theory helps to resolve the measles paradox", *Royal Society Open Science*, 8(4): 201891.
9. P. POOLADVAND, P.S. KIM\*, AND B. FAZEKAS DE ST GROTH\* (2021), "The role of antigen-competitive dynamics in regulating the immune response", *Bulletin of Mathematical Biology*, 83(5): 40. (\* Both authors contributed comparably.)
10. P. POOLADVAND, C.-O. YUN, A-R. YOON, P.S. KIM, AND F. FRASCOLI (2021), "The role of viral infectivity in oncolytic virotherapy outcomes: A mathematical study", *Mathematical Biosciences*, 334: 108520.
11. A. KUMBHARI, D. ROSE, P.P. LEE, AND P.S. KIM (2021), "A minimal model of T cell avidity may identify subtherapeutic vaccine schedules", *Mathematical Biosciences*, 334: 108556.
12. A. KUMBHARI, C.A. EGELSTON, P.P. LEE, P.S. KIM (2020), "Mature dendritic cells may promote high-avidity tuning of vaccine T cell responses", *Frontiers in Immunology*, 11: 584680.
13. S.L. LOO, D. ROSE, M. WEIGHT, K. HAWKES, AND P.S. KIM (2020), "Why males compete rather than care, with an application to supplying collective goods", *Bulletin of Mathematical Biology*, 82:125.
14. D. PAQUIN, D. KATO, AND P. KIM (2020), "A mathematical model for the effects of grandmothing on human longevity", *Mathematical Biosciences and Engineering*, 17(4): 3175–3189.
15. A.L. JENNER, F. FRASCOLI, C.-O. YUN, AND P.S. KIM (2020), "Optimising hydrogel release profiles for viro-immunotherapy using oncolytic adenovirus expressing IL-12 and GM-CSF with immature dendritic cells", *Applied Science*, 10(8): 2872, doi:10.3390/app10082872.



16. T. LEE, A.L. JENNER, P.S. KIM, AND J. LEE (2020), "Application of control theory in a delayed-infection and immune-evading oncolytic virotherapy", *Mathematical Biosciences and Engineering* 17(3): 2361–2383.
17. A. KUMBHARI, P.S. KIM\*, AND P.P. LEE\* (2020), "Optimisation of anti-cancer peptide vaccines to preferentially elicit high-avidity T cells", *Journal of Theoretical Biology* 486: 110067. (\* Both authors contributed comparably.)
18. A.L. JENNER, F. FRASCOLI, A.C.F. COSTER, AND P.S. KIM (2020), "Enhancing oncolytic virotherapy: Observations from a Voronoi cell-based model", *Journal of Theoretical Biology* 485: 110052.
19. E. PIRETTO, M. DELITALA, P.S. KIM, AND F. FRASCOLI (2019), "Effects of mutations and immunogenicity on outcomes of anti-cancer therapies for secondary lesions", *Mathematical Biosciences* 315:108238.
20. A.L. JENNER, P.S. KIM, AND F. FRASCOLI (2019), "Oncolytic virotherapy for tumours following a Gompertz growth law", *Journal of Theoretical Biology* 480:129–140.
21. D. ROSE, K. HAWKES, AND P.S. KIM (2019), "Adult sex ratio as an index for male strategy in primates", *Theoretical Population Biology* 126: 40–50.
22. P.S. KIM, J.S. MCQUEEN, AND K. HAWKES (2019), "Why does women's fertility end in mid-life? Grandmothering and age at last birth", *Journal of Theoretical Biology* 461: 84–91.
23. E. BOUIN, M.H. CHAN, C. HENDERSON, AND P.S. KIM (2018), "Influence of a mortality trade-off on the spreading rate of cane toads fronts", *Communications in Partial Differential Equations* 43(11): 1627–1671.
24. A.L. JENNER, A.C.F. COSTER, P.S. KIM, AND F. FRASCOLI (2018), "Treating cancerous cells with viruses: insights from a minimal model for oncolytic virotherapy", *Letters in Biomathematics* 5(S1): S117–S136.
25. A.L. JENNER, C.-O. YUN, A.C.F. COSTER, AND P.S. KIM (2018), "Modelling combined virotherapy and immunotherapy: strengthening the antitumour immune response mediated by IL-12 and GM-CSF expression", *Letters in Biomathematics* 5(S1): S99–S116.
26. A.L. JENNER, C.-O. YUN, P.S. KIM, AND A.C.F. COSTER (2018), "Mathematical modelling of the interaction between cancer cells and an oncolytic virus: insights into the effects of treatment protocols", *Bulletin of Mathematical Biology* 80(6): 1615-1629.
27. A.L. JENNER, C.-O. YUN, A. YOON, P.S. KIM, AND A.C.F. COSTER (2018), "Modelling heterogeneity in viral-tumour dynamics: the effects of gene-attenuation on viral characteristics", *Journal of Theoretical Biology* 454: 41–52
28. M.H. CHAN, P.S. KIM, AND R. MARANGELL (2018), "Stability of travelling waves in a Wolbachia invasion", *Discrete and Continuous Dynamical Systems – B* 23(2): 609-628.
29. J. LEE, F.R. ADLER, AND P.S. KIM (2017), "A mathematical model for the macrophage response to respiratory viral infection in normal and asthmatic conditions", *Bulletin of Mathematical Biology* 79(9):1979-1998.
30. S.L. LOO, K. HAWKES, AND P.S. KIM (2017), "Evolution of male strategies with sex-ratio dependent payoffs: connecting pair bonds with grandmothering", *Philosophical Transactions of the Royal Society B: Biological Sciences* 372(1729): 20170041.

31. S.L. LOO, M.H. CHAN, K. HAWKES, AND P.S. KIM (2017), "Further mathematical modelling of mating sex ratios and male strategies with special relevance to human life history", *Bulletin of Mathematical Biology* 79(8):1907-1922.
32. A. PEACOCK, A. CHEUNG, P. KIM, AND S.K. POON (2017), "Socialising health burden through different network topologies: A simulation study", *Studies in Health Technology and Informatics* 239: 112–118.
33. M.H. CHAN, K. HAWKES, AND P.S. KIM (2017), "Modelling the evolution of traits in a two-sex population, with an application to grandmothering", *Bulletin of Mathematical Biology* 79(9): 2132–2148.
34. F. FRASCOLI, E. FLOOD, AND P.S. KIM (2017) "A model of the effects of cancer cell motility and cellular adhesion properties on tumour-immune dynamics", *Mathematical Medicine and Biology* 34(2): 215–240.
35. J.L. GEVERTZ, P.S. KIM, AND J.R. WARES (2017), "Mentoring undergraduate interdisciplinary mathematics research students: Junior faculty experiences", *PRIMUS Problems, Resources, and Issues in Mathematics Undergraduate Studies* 27(3): 352–369. (Authors in alphabetical order.)
36. W.L. SWEATMAN, G. MERCER, J. BOLAND, N. CUSIMANO, A. GREENWOOD, K. HARLEY, P. VAN HEIJSTER, P. KIM, J. MAISANO, M. NELSON, AND G. PETTET (2016), "Seaweed cultivation and the remediation of by-products from ethanol production: a glorious green growth" in T. Farrell and A.J. Roberts (eds.) "Proceedings of the 2014 Mathematics and Statistics in Industry Study Group, MISG-2014", *ANZIAM Journal* 56: M1-M29. (Authors in alphabetical order.)
37. A. ORTIZ, D. CARNATHAN, J. YU, K. SHEEHAN, P. KIM, A. REYNALDI, T. VANDERFORD, N. KLATT, J. BRENCHLEY, M. DAVENPORT, AND G. SILVESTRI (2016), "Analysis of the in vivo Turnover of CD4+ T-cell Subsets in Chronically SIV-Infected Sooty Mangabeys", *PLoS One* 11(5): e0156352.
38. J.A.H. KOOP\*, P.S. KIM\*, S.A. KNUTIE, F. ADLER, AND D.H. CLAYTON (2016), "An introduced parasitic fly may lead to local extinction of Darwin's finch populations", *Journal of Applied Ecology* 53(2): 511–518. (\* Both authors contributed comparably.)
39. M.H. CHAN, K. HAWKES, AND P.S. KIM (2016), "Evolution of longevity, age at last birth and sexual conflict with grandmothering", *Journal of Theoretical Biology* 393: 145–157
40. J.E. COXWORTH, P.S. KIM, J.S. MCQUEEN, AND K. HAWKES (2015), "Grandmothering life histories and human pair bonding", *Proceedings of the National Academy of Sciences, USA*, 112(38): 11806–11811.
41. M.H. CHAN, R. SHINE, G.P. BROWN, AND P.S. KIM (2015), "Mathematical modelling of spatial sorting and evolution in a host-parasite system", *Journal of Theoretical Biology* 380: 530–541.
42. J.R. WARES, J. J. CRIVELLI, C.-O. YUN, I.-K. CHOI, J.L. GEVERTZ, AND P.S. KIM (2015), "Treatment strategies for combining immunostimulatory oncolytic virus therapeutics with dendritic cell injections", *Mathematical Biosciences and Engineering* 12(6): 1237–1256.
43. P.S. KIM, J. J. CRIVELLI, I.-K. CHOI, C.-O. YUN, AND J.R. WARES (2015), "Quantitative impact of immunomodulation versus oncolysis with cytokine-expressing virus therapeutics", *Mathematical Biosciences and Engineering* 12(4): 841–858.

44. A. K. COOPER AND P.S. KIM (2014), "A cellular automata and a partial differential equation model of tumour-immune dynamics and chemotaxis", in A. Eladdadi, P. Kim, and D. Mallet, (eds.), *Mathematical Models of Tumor-Immune System Dynamics*, Springer Proceedings in Mathematics & Statistics, vol. 107, Springer, New York, NY: 21-46.
45. J.R. WARES, J. J. CRIVELLI, AND P. S. KIM (2014), "Differential equation techniques for modeling a cycle-specific oncolytic virotherapeutic", in A. Eladdadi, P. Kim, and D. Mallet, (eds.), *Mathematical Models of Tumor-Immune System Dynamics*, Springer Proceedings in Mathematics & Statistics, vol. 107, Springer, New York, NY: 253-275.
46. M.H.T. CHAN AND P.S. KIM (2014), "Modelling the impact of marine reserves on a population with compensatory dynamics", *Bulletin of Mathematical Biology* 76(9): 2122–2143.
47. F. FRASCOLI, P.S. KIM, B.D. HUGHES, AND K.A. LANDMAN (2014), "A dynamical model of tumour immunotherapy", *Mathematical Biosciences* 253: 50–62.
48. P.S. KIM, J.S. MCQUEEN, J.E. COXWORTH, AND K. HAWKES (2014), "Grandmothering drives the evolution of longevity in a probabilistic model", *Journal of Theoretical Biology* 353: 84–94.
49. M.H.T. CHAN AND P.S. KIM (2014), "An age-structured approach to modelling behavioural variation maintained by life-history trade-offs", *PLoS One* 9(1): e84774.
50. D.S. KHOURY, D. CROMER, S.E. BEST, K.R. JAMES, P.S. KIM, C.R. ENGWERDA, A. HAQUE, AND M.P. DAVENPORT (2014), "Effect of mature, blood-stage Plasmodium parasite sequestration on pathogen biomass in mathematical and in vivo models of malaria", *Infection and Immunity* 82(1): 212-220.
51. M.H.T. CHAN AND P.S. KIM (2013), "Modelling a *Wolbachia* invasion using a slow-fast dispersal reaction-diffusion approach", *Bulletin of Mathematical Biology* 75(9): 1501-1523.
52. F.R. ADLER AND P.S. KIM (2013), "Models of contrasting strategies of rhinovirus immune manipulation", *Journal of Theoretical Biology* 327(1): 1-10.
53. P.S. KIM, P.P. LEE, AND D. LEVY (2013), "Basic principles in modeling adaptive regulation and immunodominance", in A. Friedman, E. Kashdan, U. Ledzewicz, and H. Schättler, (eds.), *Mathematical Models and Methods in Biomedicine, Lecture Notes on Mathematical Modelling in the Life Sciences*, Springer, New York, NY: 33-57.
54. P.S. KIM, J.E. COXWORTH, AND K. HAWKES (2012), "Increased longevity evolves from grandmothering", *Proceedings of the Royal Society B: Biological Sciences* 279 (1749): 4880-4884
55. P.S. KIM AND P.P. LEE (2012), "Modeling protective immunity via preventative cancer vaccines using a hybrid agent-based and delay differential equation approach", *PLoS Computational Biology* 8(10): e1002742.
56. J.J. CRIVELLI, J. FOLDES, P.S. KIM, AND J. WARES (2012), "A mathematical model for cell cycle specific cancer virotherapy", *Journal of Biological Dynamics* 6(S1): 104–120.
57. P.S. KIM (2011). "Modeling leukemia stem cell differentiation: Bridging agent-based and partial differential equation models", *Proc. Russia-Korea Workshop on*

*advanced computer and information technologies*, Yekaterinburg, Russia, 29 May – 1 June 2011: 28-51.

58. M.M. PEET, P.S. KIM, AND P.P. LEE (2011), "Biological circuit models of the immune regulatory response: a decentralized control system", *Proc. 50th IEEE Conference on Decision and Control and European Control Conference*, Orlando, Florida, USA, December 12-15, 2011: 3020-3025.
59. F. MAZENC, P.S. KIM, AND S.-I. NICULESCU (2011), "Stability of an imatinib and immune model with delays", *Institute of Mathematics and its Applications Journal of Mathematical Control and Information* 28(4): 447-462.
60. K. HAWKES, P.S. KIM, B. KENNEDY, R. BOHLENDER, AND J. HAWKS (2011), "A reappraisal of grandmothering and natural selection", *Proceedings of the Royal Society B: Biological Sciences* 278(1714): 1936-1938.
61. P.S. KIM, P.P. LEE, AND D. LEVY (2011), "A theory of immunodominance and adaptive regulation", *Bulletin of Mathematical Biology* 73(7): 1645-1665.
62. D. PAQUIN, P.S. KIM, P.P. LEE, AND D. LEVY (2011), "Strategic treatment interruptions during imatinib treatment of chronic myelogenous leukemia", *Bulletin of Mathematical Biology* 73(5): 1082-1100.
63. P.S. KIM AND P.P. LEE (2011), "T cell state transitions produce an emergent change detector", *Journal of Theoretical Biology* 275(1): 59-69.
64. P.S. KIM, P.P. LEE, AND D. LEVY (2010), "Emergent group dynamics governed by regulatory cells produce a robust primary T cell response", *Bulletin of Mathematical Biology* 72(3): 611-644.
65. M. DOUMIC-JAUFFRET\*, P.S. KIM\*, AND B. PERTHAME (2010), "Stability analysis of simplified yet complete model for chronic myelogenous leukemia", *Bulletin of Mathematical Biology* 72(7): 1732-1759. (\* Both authors contributed comparably.)
66. S.-I. NICULESCU, P.S. KIM, K. GU, P.P. LEE, AND D. LEVY (2010), "Stability crossing boundaries of delay systems modeling immune dynamics in leukemia", *Discrete and Continuous Dynamical Systems – Series B* 13(1): 129-156.
67. P.S. KIM, D. LEVY, AND P.P. LEE (2009), "Modeling and simulation of the immune system as a self-regulating network", in Michael L. Johnson and Ludwig Brand, (eds), *Methods in Enzymology*, vol. 467, Academic Press, Burlington, MA: 79-109.
68. M.M. PEET\*, P.S. KIM\*, S.-I. NICULESCU, AND D. LEVY (2009), "New computational tools for modeling chronic myelogenous leukemia", *Mathematical Modelling of Natural Phenomena* 4(2): 119-139. (\* Both authors contributed comparably.)
69. F. MAZENC, P.S. KIM, AND S.-I. NICULESCU (2008), "Stability of a Gleevec and immune model with delays", *Proc. 47th IEEE Conference on Decision and Control*, Cancun, Mexico.
70. P.S. KIM, P.P. LEE, AND D. LEVY (2008), "A PDE model for imatinib-treated chronic myelogenous leukemia", *Bulletin of Mathematical Biology* 70(7): pp.1994-2016.
71. P.S. KIM, P.P. LEE, AND D. LEVY (2008), "Dynamics and potential impact of the immune response to chronic myelogenous leukemia", *PLoS Computational Biology* 4(6): e1000095.

72. P.S. KIM, P.P. LEE, AND D. LEVY (2008), "Modeling imatinib-treated chronic myelogenous leukemia: reducing the complexity of agent-based models", *Bulletin of Mathematical Biology* 70(3): 728-744.
73. S.-I. NICULESCU, P.S. KIM, P.P. LEE, AND D. LEVY (2007), "On stability of a combined Gleevec and immune model in chronic leukemia: Exploiting delay system structure", *Proc. 7th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2007)*, Pretoria, South Africa 40(12): 563-568.
74. P.S. KIM, P.P. LEE, AND D. LEVY (2007), "Mini-transplants for chronic myelogenous leukemia: a modeling perspective", in Queinnec et al. (eds.) "Biology and Control Theory: Current Challenges", *Lecture Notes in Control and Information Sciences*, 357, Springer, Berlin: 3-20.
75. P.S. KIM, P.P. LEE, AND D. LEVY (2007), "Modeling regulation mechanisms in the immune system", *Journal of Theoretical Biology* 246(1): 33-69.
76. S.-I. NICULESCU, P.S. KIM, K. GU, AND D. LEVY (2006), "On the stability crossing boundaries of some delay systems modeling immune dynamics in leukemia", *Proc. 17th International Symposium on Mathematical Theory of Networks and Systems*, Kyoto, Japan.
77. R. DECONDE\*, P.S. KIM\*, D. LEVY, AND P.P. LEE (2005), "Post-transplantation dynamics of the immune response to chronic myelogenous leukemia", *Journal of Theoretical Biology* 236(1): 39-59. (\* Both authors contributed comparably.)
78. P.S. KIM, L. STEMKOSKI, AND C. YUEN (2001), "Polynomial knots of degree five," *MIT Undergraduate Journal of Mathematics* 3: 125-135.
79. L. PACHTER AND P.S. KIM (1998), "Forcing matchings on square grids", *Discrete Mathematics* 190(1-3): 287-294.