CURRICULUM VITAE: Dr Christopher Charles Green PhD MSci DIC ARCS

Personal information

Date of birth: 6 February 1987
Nationality: British
Home address: 200 East Douglas Avenue #328, Wichita KS 67202, USA.
Work address: 332 Jabara Hall, Wichita State University, Wichita KS 67208, USA.
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University education

Doctor of Philosophy (PhD) in Mathematics.
Imperial College London, UK
October 2009 - June 2013
Supervisor: Prof Darren Crowdy
Examiners: Prof John Elgin, Prof Edward Johnson
Thesis title: 'Mathematical techniques for free boundary problems with multiple boundaries'.

Diploma of Imperial College London (DIC).

Master of Science (MSci) in Mathematics.
First Class Honours
Imperial College London, UK
October 2005 - July 2009.

Associate of the Royal College of Science (ARCS).

Academic positions

Assistant Professor in Applied Mathematics (tenure-track)
Department of Mathematics, Statistics & Physics, Wichita State University, Wichita KS, USA.
August 2020 - present.

Lecturer in Applied Mathematics
Department of Mathematics & Statistics, Macquarie University, Sydney NSW, Australia.
July 2017 - July 2020.

Postdoctoral Research Fellow
Sponsor: The Australian Research Council (named postdoc on the Discovery Project DP140100933 of Prof Scott McCue).
School of Mathematical Sciences, Queensland University of Technology, Brisbane QLD, Australia.
July 2015 - July 2017. [1 of 1 awarded, duration of 24 months.]

ESU Lindemann Trust Fellow
Sponsor: The English-Speaking Union (ESU).
Department of Mechanical & Aerospace Engineering, University of California San Diego, La Jolla CA, USA.
July 2014 - July 2015.
[1 of 3 awarded across several scientific disciplines within UK institutions, duration of 12 months, "awarded to graduates of exceptional promise in both the pure and applied physical sciences who have shown capacity for producing original research".]
One of my interview panel members was Sir Prof Roger Penrose FRS.

EPSRC Doctoral Prize Fellow
Sponsor: Engineering & Physical Sciences Research Council (EPSRC) of the UK.
Department of Mathematics, Imperial College London, UK.
July 2013 - July 2014.
[1 of 14 awarded across all departments at Imperial College London, duration of 12 months, "reserved for the very best newly qualified PhDs that received EPSRC studentship funding".]

Doctoral student
Sponsor: Doctoral Training Grant from the Engineering & Physical Sciences Research Council (EPSRC) of the UK.
Department of Mathematics, Imperial College London, UK.
October 2009 - June 2013.

Publications

D. G. Crowdy, **C. C. Green**, M. A. Snipes & L. A. Ward
Harmonic measure distribution functions for a class of multiply connected symmetrical slit domains.
Proceedings of the Royal Society A (under peer review)

C. J. Lustri, **C. C. Green** & S. W. McCue (2019)
Selection of a Hele-Shaw bubble via exponential asymptotics.
SIAM Journal of Applied Mathematics.

M. M. S. Nasser & **C. C. Green** (2018)
A fast numerical method for ideal fluid flow in domains with multiple stirrers.
Nonlinearity.

C. C. Green, C. J. Lustri & S. W. McCue (2017)
The effect of surface tension on steadily translating bubbles in an unbounded Hele-Shaw cell.
Proceedings of the Royal Society A.

D. G. Crowdy, E. H. Kropf, **C. C. Green**, & M. M. S. Nasser (2016)
The Schottky-Klein prime function: a theoretical and computational tool for applications.
IMA Journal of Applied Mathematics.

C. C. Green (2015)
Analytical solutions for two hollow vortex configurations in an infinite channel.
European Journal of Mechanics B/Fluids.

C. C. Green & G. L. Vasconcelos (2014)
Multiple steadily translating bubbles in a Hele-Shaw channel.
Proceedings of the Royal Society A.

C. C. Green & J. S. Marshall (2013)
Green's function for the Laplace-Beltrami operator on a toroidal surface.
Proceedings of the Royal Society A.

D. G. Crowdy & **C. C. Green** (2012)
Analytical solutions for von Kármán streets of hollow vortices.
Physics of Fluids.

D. G. Crowdy, A. S. Fokas & **C. C. Green** (2011)
Conformal mappings to multiply connected polycircular arc domains.
Computational Methods and Function Theory.

Prizes

2017 ANZIAM Cherry Ripe Prize
Awarded on 9 February 2017 during the 2017 Australia & New Zealand Industrial and Applied Mathematics conference, for 'the best presentation by an established academic'.

2012 BAMC SIAM Prize
Awarded on 29 March 2012 during the 2012 British Applied Mathematics Colloquium, for 'the best student talk' at the conference.

2009 Derek Moore Memorial Prize for Excellence in Applied Mathematics and Numerical Methods
Awarded on 21 October 2009, Commemoration Day, Imperial College London, for 'outstanding performance in the final MSci examinations'.

Supervision of research students

Co-supervisor with Prof Lesley Ward (University of South Australia) of PhD candidate Mr Arunmaran Mahenthiram (University of South Australia) on the project 'Harmonic measure distribution functions (h-functions) of complex domains'.

Peer-review duties

I have refereed manuscripts submitted for publication at *Proceedings of the Royal Society A*, *ANZIAM Journal*, *Acta Mechanica*, *Engineering Analysis with Boundary Elements*, and *Nonlinearity.*

Research funding

Wichita State University Start-up Grant
Principal investigator: Dr Christopher Green. Co-investigators: n/a.
Value: 25,000 USD.

Australian Research Council Discovery Early Career Researcher Award (ARC DECRA), 2018-2020
Principal investigator: Dr Christopher Green. Co-investigators: n/a.
Value: 374,200 AUD.
From the Australian Research Council website: "The objectives of the DECRA scheme are to: (i) support excellent basic and applied research by early career researchers; (ii) advance promising early career researchers and promote enhanced opportunities for diverse career pathways; (iii) enable research and research training in high quality and supportive environments. Researchers may be eligible to apply if they have been awarded a PhD within five years".

Macquarie University Research Seeding (MQRS) Grant, 2018-2019
Principal investigators: Dr Christopher Green, Dr Christopher Lustri (Macquarie University).
Value: 41,818 AUD.

Macquarie University New Staff (MQNS) Grant, 2018-2019
Principal investigator: Dr Christopher Green. Co-investigators: n/a.
Value: 19,058 AUD.

Qatar University Grant, 2016
Co-investigator: Prof Mohamed Nasser (Qatar University, Doha, Qatar).
Value: 49,350 QAR $\sim$ 17,700 AUD.

National Science Foundation (NSF) Grant, 2016-2018
Co-investigators: Prof Stefan Llewellyn-Smith (University of California San Diego, La Jolla CA, USA), Prof Bernard Deconinck (University of Washington, Seattle WA, USA).
Value: 229,500 USD.

Teaching

I have received positive student evaluations of my performance as lecturer in each course I have delivered: official student survey documents evidence this (available on request).

Unit Convenor and Lecturer: MATH555 Differential Equations I
2nd-year mathematics course: ordinary differential equations.
Department of Mathematics, Statistics & Physics, Wichita State University.

Unit Convenor and Lecturer: MATH705 Introduction to Vortex Dynamics
Masters/4th-year mathematics course *of my own design*: vortex dynamics and advanced complex variable theory.
Department of Mathematics & Statistics, Macquarie University.
Lectures live-streamed and broadcast across other Australian institutions via the Australian Mathematical Sciences Institute (AMSI) network.

Lecturer: MATH232 Fourier Analysis & Mathematical Modelling
2nd-year mathematics course: Fourier calculus, ordinary and partial differential equations.
Department of Mathematics & Statistics, Macquarie University.

Lecturer: MATH236 Complex Analysis & Multivariable Calculus
2nd-year mathematics course: complex analysis and multivariable calculus.
Department of Mathematics & Statistics, Macquarie University.

Workshop tutor: MATH232 and MATH236
Department of Mathematics & Statistics, Macquarie University.

Lecturer: MXB202 Advanced Calculus
2nd-year mathematics course: multivariable calculus, vector calculus, physical applications.
School of Mathematical Sciences, Queensland University of Technology.

Workshop tutor: MXB202
School of Mathematical Sciences, Queensland University of Technology.

Workshop tutor (as a PhD student)
M2P3 Complex Analysis; M1A1 Mechanics; M2M2 Mathematical Methods, M1M2C Computing in `MATLAB` and `Maple`. Department of Mathematics, Imperial College London.

Private tutor to 4 undergraduate mathematics students (January - March 2018, March - May 2014).

Membership of professional societies

American Physical Society (APS), Australia & New Zealand Industrial and Applied Mathematics (ANZIAM), London Mathematical Society (LMS).

Conference presentations (selected)

The 56th Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) Conference, Lovedale NSW, Australia (2-6 February 2020).

'Complex analysis: techniques, applications and computations' workshop, The Isaac Newton Institute of Mathematical Sciences, University of Cambridge, UK (13-29 November 2019).

The 12th Congress of the International Society for Analysis, its Applications and Computation (ISAAC), Universidade de Aveiro, Aveiro, Portugal (29 July - 2 August 2019).

The 55th Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) Conference, Nelson, New Zealand (3-7 February 2019).

The 12th American Institute of Mathematical Sciences (AIMS) Conference on Dynamical Systems, Differential Equations and Applications, Taipei, Taiwan (5-9 July 2018).

'Solving problems in multiply connected domains' workshop, University of California Irvine, Irvine CA, USA (18-22 June 2018).

The 4th International UK-Japan Applied and Computational Complex Analysis (ACCA-UK/JP) Meeting, Kyoto University, Kyoto, Japan (26-27 March 2018).

The 54th Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) Conference, Hobart TAS, Australia (4-8 February 2018).

The 61st Annual Meeting of the Australian Mathematical Society (AustMS), Macquarie University, Sydney NSW, Australia (12-15 December 2017).

The 53rd Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) Conference, Hahndorf SA, Australia (5-9 February 2017).

The 11th American Institute of Mathematical Sciences (AIMS) Conference on Dynamical Systems, Differential Equations and Applications, Orlando FL, USA (1-5 July 2016).

'Recent developments in numerical analysis with special emphasis on complex analysis' workshop, University of Tokyo, Tokyo, Japan (24 July 2015).

The 9th Southern California Flow Physics Symposium, San Diego State University, San Diego CA, USA (18 April 2015).

The 1st International UK-Japan Applied and Computational Complex Analysis (ACCA-UK/JP) Meeting, Imperial College London, UK (12-13 March 2015).

'Modern applications of complex variables: modelling, theory and computation' workshop, The Banff International Research Station, Banff AB, Canada (11-16 January 2015).

The 67th Annual American Physical Society Division of Fluid Dynamics (APS DFD) Meeting, San Francisco CA, USA (23-25 November 2014).

The 56th British Applied Mathematics Colloquium (BAMC), Cardiff University, Cardiff, UK (28-30 April 2014).

The 57th Annual Meeting of the Australian Mathematical Society (AustMS), University of Sydney, Sydney NSW, Australia (30 September - 3 October 2013).

The 9th Congress of the International Society for Analysis, its Applications and Computation (ISAAC), Pedagogical University of Kraków, Kraków, Poland (5-9 August 2013).

The 7th Computational Methods and Function Theory (CMFT) Meeting, Shantou University, Shantou, China (10-14 June 2013).

The 65th Annual American Physical Society Division of Fluid Dynamics (APS DFD) Meeting, San Diego CA, USA (18-22 November 2012).

'Fluid dynamics and partial differential equations' workshop, Universidade Federal de Pernambuco, Recife, Brazil (6 November 2012).

The 54th British Applied Mathematics Colloquium (BAMC), University College London, London, UK (27-29 March 2012).

The 7th International Congress on Industrial and Applied Mathematics (ICIAM), Vancouver BC, Canada (18-22 July 2011).

The 47th Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) conference, Glenelg SA, Australia (30 January - 3 February 2011).

'Integrable and stochastic Laplacian growth in modern mathematical physics' workshop, The Banff International Research Station, Banff AB, Canada (1-5 November 2010).

The 4th European Postgraduate Fluid Dynamics Conference, École Supérieure de Physique et de Chimie Industrielles de la ville de Paris, Paris, France (3-7 July 2010).

Seminar presentations (selected)

Wichita State University, Wichita KS, USA (25 March 2019, 21 September 2018 & 27 April 2012); Shing-Tung Yau Center at South-East University, Nanjing, China (14 November 2018); Stony Brook University, Stony Brook NY, USA (19 April 2018); University of Wollongong, Wollongong NSW, Australia (21 November 2017); Macquarie University Undergraduate Mathematics Seminar, Sydney NSW, Australia (17 October 2017); Macquarie University, Sydney NSW, Australia (20 April 2017); University of Adelaide, Adelaide SA, Australia (12 April 2017); Swinburne University of Technology, Melbourne VIC, Australia (5 April 2017); Qatar University, Doha, Qatar (16 November 2016); Queensland University of Technology, Brisbane, Australia (29 April 2016); University of South Australia, Mawson Lakes SA, Australia (20 November 2015); Kyoto University, Kyoto, Japan (28 July 2015); University of California San Diego, La Jolla CA, USA (21 April 2015); King Khalid University, Abha, Saudi Arabia (29 March 2014); University of Hong Kong, Hong Kong SAR (10 July 2013); Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro, Brazil (30 September 2011).

Service roles in the Department of Mathematics & Statistics at Macquarie University

- **Early Career Academic representative on the 2019 Department Leadership Team.**
- **Organising Committee Member and Treasurer for the 56th Australia & New Zealand Industrial and Applied Mathematics (ANZIAM) conference.**

  The annual ANZIAM conference is the largest applied mathematics conference held in Australasia. The 2020 conference will be held at the Crowne Plaza Hunter Valley, Lovedale NSW, Australia, in February 2020.

  This role involved:

  - organising sponsorship of the conference;
  - managing cash flow (registration payments, conference venue, conference merchandise, conference app developers, conference logo designer, etc.);
  - managing the conference registration system;
  - making travel reservations for the conference invited speakers and medal winners;
  - liaising with local tour companies in the Hunter Valley to organise a leisure programme for the free Tuesday afternoon at the conference.
- **Solo organiser of the 1st Australian Applied & Computational Complex Analysis (ACCA-AU) Meeting**

  This meeting was due to be held at Macquarie University, Sydney NSW, Australia, in April 2020, and would have been the first ACCA network event in Australia. However, due to the 2020 COVID-19 pandemic, this event was cancelled.
- **Convenor of the 2018 Department Colloquium Series.**

  This role involved:

  - managing a 10,000 AUD budget for all 2018 colloquium expenses;
  - researching, and reaching out to, potential speakers;
  - compiling the 2018 calendar of speakers (fully-booked in 2018, male:female speaker ratio of 67:33, with a range of topics spanning pure, applied and statistics);
  - engaging with confirmed speakers regarding their proposed talk;
  - making travel reservations for the confirmed speakers;
  - organising catering for post-colloquium refreshments;
  - maintaining the department colloquium website with titles and abstracts in a timely fashion;
  - introducing speakers to department colleagues and taking them for lunch during their visit;
  - chairing the colloquium each week.

- **Assessor of proposals submitted for the 2018 and 2019 Department Travel Schemes.**
- **Peer-reviewer of teaching of my colleague Dr Paul Bryan in October 2018.**

Industry experience

Tigerfish Aviation, Adelaide SA, Australia (August-October 2008). Supervised by Dr Matthew Tetlow, School of Mechanical Engineering, University of Adelaide. Introduced to concepts in computational fluid dynamics; involved in the making of scaled models of seaplane parts under development at the company for flight testing.

Other qualifications

5 A-Levels at Grade A (Mathematics, Further Mathematics, French, Physics, Chemistry).
10 A* & 1 A GCSEs.

Other

Partial fluency in the French language.
Featured in the BBC documentary '50 Things To Do Before You Die' in June 2003, on one of the final supersonic trans-Atlantic flights of a British Airways Concorde between London LHR and New York JFK.