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Confirmation Number: 949341

Template: Full CV

Dr. William Hackborn

Correspondence language: English

Sex: Male

Date of Birth: 11/27

Canadian Residency Status: Canadian Citizen

Country of Citizenship: Canada

Contact Information

The primary information is denoted by (*)

Address

Primary Affiliation (*)

Sciences Department
Augustana Campus
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Dr. William Hackborn

Language Skills

Language	Read	Write	Speak	Understand	Peer Review
English	Yes	Yes	Yes	Yes	Yes
French	Yes	Yes	No	Yes	Yes

Degrees

- 1980/9 - 1987/6 Doctorate, Ph D in Mathematics, Fluid Dynamics, University of Toronto
 Degree Status: Completed
 Thesis Title: Eddies in Stokes Flows Driven by Rotlets
 Supervisors: Dr. Kenneth B. Ranger, 1980/9 - 1986/8
 Research Disciplines: Applied Mathematics
 Areas of Research: Fluid Mechanics
- 1979/9 - 1981/2 Master's non-Thesis, M Sc in Mathematics, Applied Mathematics, University of Toronto
 Degree Status: Completed
 Supervisors: Dr. Kenneth B. Ranger, 1979/9 - 1980/9
 Research Disciplines: Applied Mathematics
 Areas of Research: Fluid Mechanics
- 1974/9 - 1978/5 Bachelor's Honours, Bachelor of Mathematics, Applied Mathematics, University of Waterloo
 Degree Status: Completed

User Profile

Researcher Status: Researcher
 Research Career Start Date: 1986/09/01
 Engaged in Clinical Research?: No

Key Theory / Methodology: mathematical analysis and modelling

Research Specialization Keywords: fluid dynamics, history of science, projectile motion, dynamical systems, mathematical biology

Disciplines Trained In: Applied Mathematics

Research Disciplines: Applied Mathematics

Areas of Research: Fluid Mechanics, Mathematical Analysis, Differential Equation, Science and Knowledge, Network Analysis (Information)

Fields of Application: Culture, Population, Communication and Information Technologies

Employment

2004/7	Professor of Mathematics and Computing Science Sciences Department, Augustana Campus, University of Alberta, University of Alberta Full-time, Professor Tenure Status: Tenure, 1989/8 -
2001/6 - 2004/6	Professor of Mathematics and Computing Science Mathematical Sciences, Augustana University College, Augustana University College Full-time, Professor Tenure Status: Tenure, 1989/8 -
1994/7 - 2003/6	Chairperson, Mathematical Sciences Mathematical Sciences, Augustana University College, Augustana University College Full-time, Associate Professor Tenure Status: Tenure, 1989/8 -
1990/6 - 2001/5	Associate Professor of Mathematics and Computing Science Mathematical Sciences, Augustana University College, Augustana University College Full-time, Associate Professor Tenure Status: Tenure, 1989/8 -
1998/1 - 1998/6	Sabbatical Visitor, University of Waterloo Applied Mathematics, University of Waterloo, University of Waterloo Full-time, Associate Professor Tenure Status: Tenure, 1989/8 -
1997/9 - 1997/12	Sabbatical Visitor, Oxford University Centre for Mathematical Biology, University of Oxford, University of Oxford Full-time, Associate Professor Tenure Status: Tenure, 1989/8 -
1990/7 - 1991/6	Visiting Scientist, Cornell University Center for Applied Mathematics, Cornell University, Cornell University Full-time, Associate Professor Tenure Status: Tenure, 1989/8 -
1984/8 - 1990/5	Assistant Professor Natural Sciences, Augustana University College, Augustana University College Full-time, Assistant Professor Tenure Status: Tenure Track
1978/5 - 1979/8	Computer Programmer Head Office, Home Hardware Stores Limited Programming in COBOL

Affiliations

The primary affiliation is denoted by (*)

(*) 2004/7 Professor of Mathematics and Computing Science, University of Alberta

Research Funding History

Awarded [n=1]

2019/4 - 2019/5 Alberta Mathematics Dialogue (AMD) 2019, Grant, Workshop
Principal Applicant Project Description: Date: 5/2/2019 to 5/3/2019 Augustana Campus, University of Alberta
Principal Organizer: William Hackborn

Funding Sources:

2019/4 - 2019/5 Pacific Institute for the Mathematical Sciences
 Total Funding - 4,000 (Canadian dollar)
 Portion of Funding Received - 0
 Funding Renewable?: No
 Funding Competitive?: Yes

Completed [n=2]

2014/1 - 2014/7 AITF iCORE Strategic Networking & Development Award (SND) SND
 Principal Applicant #321(G2013000463), Grant, Workshop
 Project Description: Alberta Mathematics Dialogue (AMD) 2014 Date: 5/1/2014 to 5/2/2014 Augustana Campus, University of Alberta Principal Organizer: William Hackborn

Funding Sources:

2014/1 - 2014/7 Alberta Innovates
 Strategic Networking and Development
 Total Funding - 4,000 (Canadian dollar)
 Portion of Funding Received - 0
 Funding Renewable?: No
 Funding Competitive?: Yes

2014/4 - 2014/5 Alberta Mathematics Dialogue (AMD) 2014, Grant, Workshop
 Principal Applicant Project Description: Date: 5/1/2014 to 5/2/2014 Augustana Campus, University of Alberta
 Principal Organizer: William Hackborn

Funding Sources:

2014/4 - 2014/5 Pacific Institute for the Mathematical Sciences
 Total Funding - 5,000 (Canadian dollar)
 Portion of Funding Received - 0
 Funding Renewable?: No
 Funding Competitive?: Yes

Mentoring Activities

2018/6 - 2018/9 Supervisor, MITACS internship, University of Alberta
 Number of Mentorees: 1
 Mentorees: Tetiana Reznichenko
 I supervised an intern from Ukraine under the sponsorship of MITACS Globalink Research Internship program. We worked on a research project titled "Going Viral: the Dynamics of Belief Diffusion".

2018/5 - 2018/8 Supervisor, UARE internship, University of Alberta
 Number of Mentorees: 1
 Mentorees: Yihang Zhang
 I supervised an intern from China under the sponsorship of the UARE (University of Alberta Research Experience) program. We worked on a research project titled "Going Viral: the Dynamics of Belief Diffusion".

- 2017/1 - 2017/4 Supervisor, Directed Study AUMAT 395, University of Alberta
 Number of Mentorees: 1
 Mentorees: Cameron Raynor
 Supervised a student project involving an analysis of the social network of academics at the University of Alberta.
- 2016/1 - 2016/4 Supervisor, Directed Study AUMAT 495, University of Alberta
 Number of Mentorees: 1
 Mentorees: Sean Davis
 I supervised a directed study in which the student, Sean Davis, studied numerical methods for solving ordinary and partial differential equations. This involved a project in which Sean applied these methods to a reaction-diffusion PDE modelling Turing-type morphogenesis on a two-dimensional domain, in which Sean did outstanding work. Sean went on to do graduate work in Computer Science at the University of Waterloo.
- 2013/1 - 2013/4 Supervisor, Directed Study AUMAT 495, University of Alberta
 Number of Mentorees: 2
 Mentorees: Allysa Fraser Lisa Kuschminder
 Supervised a directed study of Partial Differential Equations for two students. One of these students did a project on inviscid fluid flow past a Joukowski aerofoil, while the other one did a project on a simple climate model with zonal averaging, polar ice feedback, and diffusive heat transfer.

Journal Review Activities

- 2016/2 - 2018/5 manuscript reviewer, The Physics Teacher, American Association of Physics Teachers
 Number of Works Reviewed / Refereed: 2
- 2013/4 - 2017/8 manuscript reviewer, Acta Mechanica, Springer
 Number of Works Reviewed / Refereed: 5

Most Significant Contributions

- 2017/5 Euler's Discovery and Resolution of D'Alembert's Paradox
 Conference presentation at the Canadian Society for the History and Philosophy of Mathematics (CSHPM) Annual Meeting, and published in "Research in the History and Philosophy of Mathematics: the CSHPM 2017 Annual Meeting in Toronto, Ontario," pp. 43-57, Springer, 2018. My best work in the history of science/mathematics, and the most downloaded paper in this volume.
- 2008/11 Projectile Motion: Resistance is Fertile
 A significant and well-received paper in the American Mathematical Monthly, the most widely circulated mathematics journal in the world.
- 2002/12 Pattern formation in reaction-diffusion models with nonuniform domain growth
 Co-author of this highly cited article in the Bulletin of Mathematical Biology
- 1997/9 A theoretical and experimental study of mixing regions in a chaotic Stokes flow
 Research with an engineer and another mathematician at Lafayette College, Easton PA. It resulted in a well-cited paper in the Journal of Fluid Mechanics, the preeminent journal in this field.

Publications

Journal Articles

1. Hackborn, William W. Reznychenko, Tetiana Zhang, Yihang. (2019). Consensus Building by Committed Agents. CODEE Journal. 12
 First Listed Author
 In Press, Claremont Colleges Library, United States
 Refereed?: Yes, Open Access?: Yes
 Number of Contributors: 3
 Contribution Percentage: 81-90
 Description / Contribution Value: The CODEE Journal is a peer-reviewed, open-access publication, distributed by the Community of Ordinary Differential Equations Educators (CODEE) and published by the Claremont Colleges Library to promote the teaching and learning of ordinary differential equations. This paper is in CODEE's special issue on "Linking Differential Equations to Social Justice and Environmental Concerns".
 Funding Sources: Mathematics of Information Technology and Complex Systems (MITACS); University of Alberta International (UAI)
2. Hackborn, William W. (2016). On motion in a resisting medium: a historical perspective. American Journal of Physics. 84(2): 127-134.
<http://dx.doi.org/http://dx.doi.org/10.1119/1.4935896>
 First Listed Author
 Published, American Association of Physics Teachers & American Institute of Physics, United States
 Refereed?: Yes, Open Access?: Yes
 Number of Contributors: 1

Conference Publications

1. Hackborn, William W. (2018). Euler's Discovery and Resolution of D'Alembert's Paradox. Research in History and Philosophy of Mathematics, Proceedings of the CSHPM/SCHPM. Annual Meeting of the Canadian Society for History and Philosophy of Mathematics, Toronto, Canada (43-57). Springer International Publishing AG, Switzerland
http://dx.doi.org/https://doi.org/10.1007/978-3-319-90983-7_3
 Conference Date: 2017/5
 Paper
 First Listed Author
 Published
 Refereed?: Yes, Invited?: No
 Number of Contributors: 1
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