



MONASH
University

MONASH
SCIENCE



Faculty of Science
Awards
2019

G31 Learning and Teaching Building, Clayton Campus, 26 July 2019

Welcome



Welcome to the 2019 Science Faculty Awards.

The last 12 months have seen major strides and achievements across the Faculty: outstanding results in ERA (Excellence in Research Australia), the development of many exciting new teaching programs: the Bachelor of Applied Data Science, our new Masters in Science, Mathematics and Food Agribusiness, and outstanding new research results across the Schools.

The Faculty Awards celebrate the achievements of our science academics and professional staff, as well as the achievements and contributions of our science students.

We are a vibrant and dynamic learning community – made so by the passion and commitment of our staff and students.

There is much to be honoured and celebrated at today's event and I look forward to sharing the occasion with you.

Thank you for all your contributions!

Professor Jordan Nash
Dean, Faculty of Science

Science Faculty Awards

1. Research Excellence by an Early Career Researcher

The award recognises research excellence by early career researchers who are within five years of the start of their research careers.

The Nominees are:



Dr Rhys Grinter, School of Biological Sciences

During his PhD at the University of Glasgow, Dr Rhys Grinter worked to discover antibiotic proteins and determine the molecular mechanisms of their activity, while being supported by the prestigious Lord Kelvin /Adam Smith Fellowship. His research led to the discovery of multiple novel antibacterial proteins and their application to create disease resistant transgenic plants. Upon completing his PhD, he was awarded a prestigious Sir Henry Wellcome Fellowship to investigate how bacteria obtain iron during infection. He has made considerable progress in this field. Dr Grinter's key discovery that bacteria import host proteins to obtain iron during infection, has featured in numerous high-impact journals including *Nature Communications* and *PLoS Biology*. He joined the School of Biological Sciences at Monash University in 2019, where he is working to establish his research group.



Dr Martino E. Malerba, School of Biological Sciences

Dr Martino E. Malerba is a marine biologist with an impressive record. Dr Martino E. Malerba is a Postdoctoral Research Fellow who uses empirical research to solve fundamental eco-evolutionary questions. He has developed a revolutionary model system to test how species evolve to different body sizes and established a track-record for publishing in high-end journals. He has produced 14 research articles, 10 of which are first-author. He has presented his work at many prestigious conferences, notably Evolution 2018 in Montpellier and five departmental seminars. He currently supervises a PhD candidate in the School and has won grants for more than \$20k, including the Eng-Sci Monash Seed grant for an interdisciplinary collaboration with the Monash Department of Aerospace Engineering.



Dr Lee B. Miles, School of Biological Sciences

Dr Lee B. Miles has been a research fellow in the School of Biological Sciences since 2018. His research is primarily focussed on applying the latest advances in genome editing approaches to investigate muscle development and determining the genetic causes of disease. He has made significant advances in disease modelling approaches that promise to change the field. He has demonstrated a strong record of productivity with four articles published in the four years since his PhD, with three as first author.



Dr Martin Singh, School of Earth, Atmosphere & Environment

Dr Martin Singh has made fundamental contributions to our understanding of how global warming affects precipitation patterns in the tropics and subtropics. His research has demonstrated that the energy available to thunderstorms will likely increase in the future, potentially leading to more frequent severe thunderstorms in tropical and subtropical regions. His work has enhanced our understanding of the factors that control large-scale tropical circulation; such understanding underpins our ability to project changes to rainfall in monsoon regions around the globe. Since receiving his PhD from the Massachusetts Institute of Technology, Dr Singh has worked at Harvard University, and since 2017 as a lecturer at Monash University where he is a current ARC DECRA Fellow. Dr Singh has published 18 publications (10 as first author) in high-quality journals including the *Proceedings of the National Academy of Sciences of the USA*.



Dr Laszlo Frazer, School of Chemistry

Dr Laszlo Frazer uses light to discover new energy conversion processes and expand energy access without increasing pollution. He is globally influencing the fields of light conversion and solar energy, having 31 peer-reviewed publications (nine as lead author) and over 700 citations. He earned his PhD from Northwestern University, was a researcher at Temple University, participated in the Centre of Excellence in Exciton Science at UNSW and has held NSF IGERT and Ryan Nanoscience fellowships. Dr Frazer's international reputation has led to published collaborations with 17 research groups in 10 countries and his work has been featured in the press outlets *Newsweek*, *Advanced Science News* and on a journal cover.



Dr Felix A. Pollock, School of Physics and Astronomy

Dr Felix Pollock has worked on an impressive range of topics in quantum information theory and open systems theory, ranging from gravitational effects in quantum systems to the physics of smelling. He has written 28 research papers in his time at Monash, with 11 published in 2018 alone. This includes a pair of first author publications, where he solved the decades-old open problem of how to treat memory effects in quantum processes. Dr Pollock is a member of the Monash Quantum Information Science (MonQIS) research group in the School of Physics and Astronomy and is acting as ECR representative for his School. He has been instrumental in attracting over \$150,000 of external funding to Monash, including industry funding from Samsung to investigate the feasibility of quantum batteries, with significant subsequent media attention.



Dr Kamila Kochan, School of Chemistry

Dr Kamila Kochan is an accomplished postdoctoral researcher at the Monash Centre for Biospectroscopy, focusing on several projects including the development of a rapid diagnostic tool for point-of-care detection of sepsis and the application of spectroscopy to study the mechanisms behind antimicrobial resistance and the development of approaches for its rapid detection. She is a named inventor on international patents in both these research areas. Her sepsis work is currently being trialled in a study at the Alfred Hospital, with commercial partner Biotech Resources Pty Ltd. Dr Kochan has published 29 articles in peer-reviewed journals and 14 book chapters. She is teaching third year chemistry students and supervising Honours and PhD students.



Dr Eric Zhou, School of Mathematics

Dr Zongzheng Zhou's research in applied probability and statistical mechanics has recently clarified a long-standing debate on a fundamental theory in the field of critical phenomena. He has published 10 research papers in high-quality journals, including *Physical Review Letters* in 2017 and again in 2018. Dr Zhou was a research fellow in the University of Melbourne in 2016 and is currently a research fellow in the Monash School of Mathematics.

2. Faculty of Science Award for Research Impact (Economic and Social Impact)

This award recognises excellence by researchers who have achieved, or are currently achieving, outstanding economic and/or societal impacts.

The Nominees are:



Dr Carly Cook, School of Biological Sciences

Dr Carly Cook is a Lecturer in Conservation Biology. Her research focuses on evidence-based conservation, with an emphasis on developing decision support tools to help practitioners integrate the best available science into conservation decision. Carly has worked closely with protected area managers to identify areas where decision support tools could make the greatest impact. Her research has made a significant impact to the development of robust approaches to evaluate the effectiveness of protected area management in Australia and internationally. Working closely with protected area management agencies her research revealed problems with the accuracy of these tools, and identified strategies to counteract these issues resulting in more accurate data. Her recommendations were adopted by Australian and Korean Governments, and the IUCN World Commission on Protected Areas integrating her findings into their best-practice guidelines on Protected Area Management Effective Evaluation.



Professor Gregoire Loeper, School of Mathematics

Professor Gregoire Loeper is the Course Director of the Master of Financial Mathematics, and the Director of the Centre for Quantitative Finance and Investment Strategies. As a Professor of Mathematics his research involves non-linear PDE's, stochastic control, mathematical finance, fluid mechanics and optimal transport. Professor Loeper has nine years' experience in the finance industry where he worked for Global Equity and Commodity Derivatives within BNP Paribas. His roles included quantitative analyst, head of Structured Products Pricing in London, and head of Systematic Strategies and Hybrids Quantitative Research



Dr Ailie Gallant and Monash Climate Change Communications Research Hub team members (Dr David Holmes, Ms Stephanie Hall, Ms Remy Shergill, Ms Zoe Gillett, Mr Steven Thomas, Dr James Goldie), School of Earth, Atmosphere and Environment, School of Communications and Media Studies

The Monash Climate Change Communication Research Hub is a unique Australian research entity, bringing the research resources of Monash University to the world of climate communication. The first of its kind in Australia, the Hub takes scientific climate information and applies research strategies from media studies, journalism studies, sociology and political science to seek to improve public literacy of climate change science. The Hub does this by partnering with mainstream media entities, including television networks and community newspapers, to deliver localised climate information to large audiences in meaningful ways. In 2019, this has seen semi-regular graphics and explanations of climate information presented by TV meteorologists during news broadcasts and via publication of a weekly column in the 23 Leader Community Newspapers that are distributed around the Melbourne Metropolitan area.

3. Excellence in Postgraduate Research Supervision

This award rewards research supervisors who have undertaken exceptional and unique supervision practices to benefit and enrich the experiences of their search students.

The Nominees are:



Professor Phil Andrews, School of Chemistry

Professor Phil Andrews is a current professor of organometallic and bioinorganic chemistry at Monash School of Chemistry. Phil has supervised a number of successful students into their future careers and is renowned for his compassion, understanding and a willingness to help. He is currently the acting head of school, but still dedicates time and effort to all his current and past students. Phil is always willing to see his students succeed and aid them in their future endeavours, be it academia or industry. He has been and still is, an excellent supervisor with a fantastic track record of PhD completion.



Professor Alexander (Sandy) Cruden, School of Earth, Atmosphere and Environment

After 30 years of supervisory experience Professor Sandy Cruden from the Monash School of Earth, Atmosphere and Environment has observed that many student breakthroughs come from supporting them to try the latest (usually costly) techniques and or travelling to the best, most relevant international conferences and workshops. Sandy fosters team spirit through regular off-campus lunches and weekend get-togethers at his home in the hills, and helping students to access data and state-of-the-art technology through his industry contacts.

4. Faculty of Science Award for Outstanding Contributions by a Graduate Research Student to the Life of the Faculty/School Community

This award celebrates outstanding contribution/s to the life of the Faculty of Science/ School community, by individuals or teams of graduate research students within the Faculty of Science, that are above and beyond their own research and the expectations of a postgraduate student.

The Nominees are:

- **Wee Li Mah**, Malaysia School of Science
- **Shezmin Ismail**, School of Chemistry

5. Faculty of Science Award for Outstanding Author Contribution by a Graduate Research Student to a published 'Quality' Scholarly Research Output

This award recognises outstanding contribution/s to the life of the Faculty of Science/ School community, by individuals or teams of graduate research students within the Faculty of Science, that are above and beyond their own research and the expectations of a postgraduate student.

The Nominees are:

- **Fernando Gordillo Altamirano**, School of Biological Sciences
- **Luke Wylie**, School of Chemistry
- **Kanageswari Muniandy**, Malaysia School of Science
- **Xialong Zhang**, School of Chemistry
- **Francesco Campaioli**, School of Physics and Astronomy

6. Mollie Holman Doctoral Medal for Science

The Mollie Holman Medal was established in 1998 and is named after the late pioneering physiologist, Emeritus Professor Mollie Holman AO, in honour of her significant contributions to science and education. Each year, a maximum of 10 medals are awarded to doctoral students, who have fulfilled their degree requirements and presented their faculty's best thesis of the year.



The Winner is: Dr David Treeby, School of Mathematics, supervised by Associate Professor Burkard Polster

Thesis title: *Optimal block stacking and combinatorial identities via Archimedes' method.*

7. Dean's Honours List

This award celebrates the achievements of our top students.

The Awardees are:

- Haydn Samuel Adlong
- Mathew Gillick Baker
- Adam Keren Black
- Jory Lachlan Braun
- George Xavier Coe
- Eoin Benjamin George Evans
- Jack William Higgins
- Kyle Thomas Ian Lyon
- Rachel Maclean
- Andrew Merheb
- Aaron Moat
- Anthony Jason Muleta
- Ethan Payne
- Jack Puccini
- Julia Lauren Pyne
- Joshua Simon Ratten
- Hamish William Alfred Self
- Joshua Edward Smith
- Arron Tran
- Uyen Phuong Tran
- Anna Claire Penovic Wotherspoon
- Yuan Jing Xia

8. Dean's Excellence in Teaching Award

This award celebrates exceptional service provided by individuals or teams to advance the Faculty's vision.

The Nominees are:



**Dr Yann Bernard,
School of Mathematics**



**Associate Professor Chris Greening,
School of Biological Sciences**

9. Dean's Excellence in Honours Supervision Award

This Award for Excellence celebrates honours supervisors who have undertaken outstanding supervision practices to enhance and enrich the research experience of their students.

The Nominees are:



**Associate Professor Damian Dowling,
School of Biological Sciences**



**Dr Daniel Mathews,
School of Mathematics**

10. Faculty of Science Student Impact Awards

These awards recognise students for efforts beyond academic achievement by contributing to supporting their fellow students.

- **The Young Science Leader Award** recognises students who have actively participated or promoted social inclusion initiatives including social justice, enterprise and efforts towards charitable or not-for-profit groups.
- **The Science Communication Award** recognises superb science communication for the purposes of meaningfully integrating science in society, including via cultivating science-based blogs, impactful micro-blogging, vodcasts or other social media, or developing impactful science communication workshops, events, resources and or communities of practice.
- **The Master Impact Awards in Society** recognises outstanding graduate students who have demonstrated impact in their disciplinary field of environment and sustainability, mathematics, financial mathematics, earth science, physics, astrophysics, or atmospheric science. The student's impact may be in research or for impact on society, through positive outcomes led by the student to advance an issue relating to the community, a social good program, a NPO/NGO, industry or government.

11. Award for Exceptional Service to the Faculty of Science

This award recognises and celebrates exceptional service provided by individuals or teams to advance the Faculty of Science vision.

The Nominees are:

- **John Chan**, School of Mathematics
- **Dr Dianne Ruka**, School of Physics and Astronomy



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