

Dr Saul Justin Newman

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Areas of specialisation

Evolution • Demography • Bioinformatics • Machine Learning • Kin selection • Life history evolution • Crop biology

Research Papers and Technical Comments

- 2021 S.J. Newman, R.T. Furbank. *In Press*. “[Explainable machine learning models of major crop traits from satellite-monitored continent-wide field trial data.](#)”
- 2021 S.J. Newman, R.T. Furbank. **Scientific Data**. “[A Multiple Species, Continent-Wide, Million-Phenotype Agronomic Plant Database.](#)”
- 2020 S. Easteal *et al.* **The American Journal of Human Genetics**. “Equitable Expanded Carrier Screening Needs Indigenous Clinical and Population Genomic Data.” 102:2, pp.175-182 *In press*.
- 2020 S.J. Newman. **bioRxiv preprint**. “[Supercentenarian and remarkable age records exhibit patterns indicative of clerical errors and pension fraud.](#)”
- Please note that with an Altmetric score of 1175, this preprint was the sixth-ranked overall and second-most discussed paper ever posted to bioRxiv.*
- 2019 S.J. Newman. **The Lancet**. “Ending government support for pro-alcohol research.” 393:10177, p.1200. Correspondence. DOI:[https://doi.org/10.1016/S0140-6736\(18\)32412-7](https://doi.org/10.1016/S0140-6736(18)32412-7)
- 2019 M. Arcos-Burgos *et al.* **Translational Psychiatry**. “ADGRL3 (LPHN3) variants predict substance use disorder.” 9:42. DOI: <https://doi.org/10.1038/s41398-019-0396-7>
- 2018 S.J. Newman. **PLOS Biology**. “Errors as a primary cause of late-life mortality deceleration and plateaus”. 16:12, e2006776. DOI: [10.1371/journal.pone.0117019](https://doi.org/10.1371/journal.pone.0117019)
- 2018 S.J. Newman. **PLOS Biology**. “Plane inclinations: a critique of hypothesis and model choice in Barbi *et al.*” 16:12, e3000048. <https://doi.org/10.1371/journal.pbio.3000048>

- 2018 S.J. Newman. **Science**. “Unsupported model choices generate a plateau.” (eLetter). <https://science.sciencemag.org/content/360/6396/1459/tab-e-letters>
- 2017 Voss-Fels *et al.* **Molecular Plant**. “VERNALIZATION₁ modulates root system architecture in wheat and barley.” 11:1, pp.226-229. DOI: <http://dx.doi.org/10.1016/j.molp.2017.10.005>
- 2017 S.J. Newman, S. Easteal. **f1000Research**. “The dynamic upper limit of human lifespan.” 6:569, DOI: [10.12688/f1000research.11438.2](https://doi.org/10.12688/f1000research.11438.2)
- 2017 S.J. Newman, S. Easteal. **bioRxiv preprint**. “Global patterns of human ageing.”
- 2016 S.J. Newman *et al.* **f1000Research**. “Reproductive success is predicted by social dynamics and kinship in managed animal populations.” 5:870, DOI: [10.12688/f1000research.8713.1](https://doi.org/10.12688/f1000research.8713.1)
- 2015 S.J. Newman, S. Easteal. **PLOS one**. “A new metric of inclusive fitness predicts the human mortality profile.” 10(1), e0117019. DOI: [10.1371/journal.pone.0117019](https://doi.org/10.1371/journal.pone.0117019)

Grants awarded

- 2019-present G. Estavillo, R. Sharwood, T. Condon, W. Spielmeyer, B. Brooks, **S. J. Newman**. Cooperative Research Centres Agility Grant. “Higher-Yielding Wheats from triticale”.
- 2018-present Principal Investigator. F. Bush, M. MacDonald, **S.J. Newman**. RSB Innovation Fund, awarded for “Hyperspectral pre-symptomatic disease detection”.
- 2018 Sole Principal Investigator. **S.J. Newman**. Bayer - BASF private funding, awarded for “Artificial intelligence in wheat yield improvement and trait prediction”.

Public Outreach and Impact

[Forbes magazine](#) | [The Times](#) | [The Guardian](#) | [Newsweek](#) | [The Age and the Sydney Morning Herald](#)
[The Scientist](#) | [Discover Magazine](#) | [Daily Mail](#) | [Radio New Zealand](#) | [The Verge](#)
[DrinkTank.org](#) | [The ScienCentric podcast](#) | [LiveScience](#) | [WeWantToBeBetter podcast](#)

Referees

Prof. Heather Booth
Director of Research in the School of Demography
Australian National University, Acton
ACT Australia 2601
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Prof. Simon Easteal
Director, National Centre for Indigenous Genomics
Australian National University, Acton
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Phone: +61 2 612 54719; Email: simon.easteal@anu.edu.au

Dr Teresa Neeman
Biological Data Science Institute,
Australian National University, Acton
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Positions held

- 2018-present **Senior Postdoctoral Fellow, Joint Appointment**
Machine learning prediction of crop phenotypes,
The ARC Center for Excellence in Translational Photosynthesis.
and
Human Ageing and Genomics,
The Biological Data Science Institute,
The Australian National University, Australia
- 2015-2018 **Postdoctoral Fellow and Acting Group Leader**
Machine learning prediction of life history traits from wheat genomes
Commonwealth Scientific and Industrial Research Organisation
Black Mountain Laboratories, Australia
- 2015 **Academic Lecturer - Casual**
Statistics and R programming, Genome Biology Department, The John Curtin School of Medical Research
- 2014-2015 **Research Assistant**
Translational Genomics, Genome Biology Department, The John Curtin School of Medical Research
Australian National University, Australia

Select Invited Presentations

- 2019 Sixth Annual Meeting of the Evolutionary Demography Society, Miami, USA. Dual talks on ‘The role of errors in late-life mortality patterns’ and ‘Invalid findings from regression choices and rounding errors’.
- 2019 Innovations in Agriculture for Food Security, Brisbane, Australia. ‘Untangling gene-by-environment interactions using satellites and machine learning’.
- 2019 Sixth Annual Meeting of the Evolutionary Demography Society, Miami, USA. Dual talks on ‘The role of errors in late-life mortality patterns’ and ‘Invalid findings from regression choices and rounding errors’.
- 2019 Organising member, Presenter, and Session Chair: Machine Learning in Genome Biology, Kiama, Australia. ‘Industrial wheat breeding, and extracting meaning from ‘black boxes’ through machine learning’.
- 2018 Chinese Academy of Sciences, Beijing, China. Collaborative cross-government initiative on frost tolerance and flowering time genomics. ‘Machine learning and remote sensing data in genomic breeding’.
- 2018 National Institute of Agricultural Science, Gyeongsangbuk-Do, South Korea. Collaborative cross-government initiative on flowering genomics and wheat breeding. ‘Flowering genomics, machine learning and Australian Wheat Diversity’.
- 2017 Rice breeding and genomics symposium. International Rice Research Institute, Los Baños, Philippines. ‘Remote sensing and genomics for large intercrossed breeding panels’.

Education

- 2010-2015 PhD in Medical Science, Australian National University
- 2009-2010 HONOURS first class in Biological Anthropology (Genetics), Australian National University
- 2007-2009 BSc in Biological Anthropology, Australian National University