RUTH KRAVIS

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EDUCATION

University of California, Berkeley 2022 – present
EECS PhD, advised by Duncan Callaway
Major: Power & Energy
Courses: Power Electronics, Data for Energy, Power Systems, Optimization, Applied ML, Energy Markets
GPA: 3.7/4.0

The Australian National University 2016 - 2021
B.Eng (Research & Development) and *B.A* (Philosophy)
Exchange student in D-ITET at **ETH Zürich,** Sep 2019 – Feb 2020.

HONOURS AND AWARDS

Quad Fellowship	2023
American Australian Association Graduate Education Fund Scholarship	2022
Gateway Fellowship at International House (UC Berkeley)	2022
Rolf G. Locher Endowed Fellowship (MIT) (declined)	2022
University Medal (ANU)	2021
Ian Ross Honours Scholarship (ANU)	2021
Exchange Scholarship (ETH Zürich)	2019
New Columbo Plan Grant (ANU)	2019
Lisa Brodribb Women in Engineering Scholarship (ANU)	2018

RECENT RESEARCH PROJECTS

Are transmission line dynamics important in inverter-dominated grids? 2023 – current
Advisor: Duncan Callaway, UC Berkeley
Part of DOE's **unifi consortium** on universal interoperability for grid-forming inverters

Price-formation in zero-marginal cost grids 2023 – current
Collaborators: Eleanor Adachi, Eli Brock

Undergraduate Thesis: *Understanding Voltage Stability in Distribution Networks* 2020 to 2021
Supervisors: Dr. Elizabeth Ratnam, Professor Ian Petersen

WORK EXPERIENCE

Battery Storage and Grid Integration Program, ANU, Canberra 2021 to 2022
Research Assistant under Professor Lachlan Blackhall

- Development of a python-based optimiser for modelling energy and commodity networks
- Application of optimiser to university campus decarbonisation

ITP Renewables, Canberra 2018 to 2021
Graduate (formerly Undergraduate) Engineer

- Techno-economic feasibility studies for renewable energy systems in Pacific Island Countries and Australia
    - Technology analysis (PV, battery energy storage systems, diesel generation, pumped hydro)

    - Range of private and public sector projects
- Proposal writing
- Administration of compliance inspection programs and energy efficiency audits across Australia, application of AS/NZS 3000, 4777, and 5033

The Australian National University, Canberra 2018 to 2022
Teaching Assistant, Research School of Engineering

- Courses: Introductory Electronics, System Design, System Analysis, Project Management, Operations Research, Control Systems, Capstone Group Project

PUBLICATIONS

Conference Papers

Eleanor Adachi*, Eli Brock*, **Ruth Kravis*,** 2024, "Understanding price-formation in grids transitioning to zero marginal cost generation", accepted to 2024 Power and Energy Conference at Illinois (PECI)

Ruth Kravis, Gabriel E Cólon-Reyes, Duncan Callaway, 2023, "Small-signal stability in inverter-dominated grids: exploring the role of gains, line dynamics, and operating conditions", accepted to 2024 IEEE Power & Energy Society General Meeting. Available at: https://arxiv.org/abs/2311.12152

Gabriel E Cólon-Reyes, **Ruth Kravis**, Sunash Sharma, and Duncan Callaway, 2023, "Transmission Line Dynamics on Inverter-Dominated Grids: Analysis and Simulations." – submitted to the 23rd Power Systems Computation Conference (PSCC 2024). Available at: https://arxiv.org/abs/2310.08553

Ruth Kravis, Ian Petersen and Elizabeth Ratnam, "Voltage Stability Studies for Distribution Networks: Assessing Load Dynamics," 2021 IEEE PES Innovative Smart Grid Technologies - Asia (ISGT Asia), Brisbane, Australia, 2021, pp. 1-5, https://ieeexplore.ieee.org/document/9715701

*denotes equal contribution

Journal Publications

Sharma, A.; Bodger, C.; Elahi, A.; Halbich, R.; Jyoti, H.; Kennedy, **R.; Kravis**, R.; Law, B.M.-Y.; Li, A.; Lim, D.; Lu, E.; Luu, C.; Patajo, A.; Sigal, A.; Wells, V.; Browne, C.A. "Shared Learning from the Implementation of a Technical Leadership Program". Sustainability 2021, 13, 6433. Available at: https://doi.org/10.3390/su13116433

OTHER

Coding: Julia, python, MATLAB, Opal-RT
Languages: English (native)

REFERENCES

Associate Professor Duncan Callaway
Energy and Resources Group, University of California, Berkeley
Email: dcal@berkeley.edu

Dr. Elizabeth Ratnam
School of Engineering, Australian National University
Email: elizabeth.ratnam@anu.edu.au