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Miro Alexander Astore

Curriculum Vitae

Education

2019

PhD Candidate, *University of Sydney*, Australia.
Advisors Serdar Kuyucak, Shafagh Waters
Thesis Title Computer Modelling the Root Cause of Cystic Fibrosis
Awards
- Research Training Program Scholarship
- Australian Cystic Fibrosis Foundation Top Up Scholarship
- Peter Domachuck Memorial Scholarship
- 2nd Place Poster Prize EAPS 2021.

Other Activities
- Course work in biomathematics and fluid dynamics.
- Regularly attended and presented in a theoretical chemistry journal club.
- Responsible for training new students in the lab.
- Tutoring undergraduate physics courses.
- Biophysical consulting services.

2015
2018

BSc Physics (Advanced, Honours), *University of Sydney*, Australia.
Advisor Serdar Kuyucak
Majors Pure Mathematics (Adv.), Physics (Adv.)
Thesis Title Computational studies of an Artificial Light Harvesting Complex
Mark 87%
Awards
- First Class Honours
- Dean's List

Professional Experience and Outreach

2021

Board Member, *Future of Research*.
Member of the international scholars task force. Future of Research is a group which advocates for a favourable policy environment for scientific research worldwide, focussing on early career reserachers. This advocacy takes the form of collaboratively writing and publishing articles in respected science policy journals.

2019

Biophysics Consultant, *GenieUS Genomics*, Australia.
Motor Neuron Disease (MND) Research. Asessing the pathogenesis of novel mutations in MND patients using molecular dynamics.

2018

University Tutor, *University of Sydney*, Australia.
Subjects covered:
- Undergraduate physics courses covering electrostatics, optical physics, quantum physics and fluid dynamics
- Introduction to Data Science, 1st year undergraduate course
- Scientific Computing, 2nd year undergraduate course

Research Output

Selected Publications

2019 **Global redox proteome and phosphoproteome analysis reveals redox switch in Akt**, *Su, Z., Burchfield, J. G., Yang, P., Humphrey, S. J., Yang, G., Francis, D., Yasmin, S., Shin, S. Y., Norris, D. M., Kearney, A. L., Astore, M. A., Scavuzzo, J., Fisher-Wellman, K. H., Wang, Q. P., Parker, B. L., Neely, G. G., Vafaee, F., Chiu, J., Yeo, R., ... James, D. E. (2019). Nature Communications, 10(1), 1–18.* `https://doi.org/10.1038/s41467-019-13114-4`.

2021 **Molecular dynamics and theratyping in airway and gut organoids reveal R352Q-CFTR conductance defect**, *Wong, S. L.*, Awatade, N. T.*, Astore, M. A.*, Allan, K. M., Carnell, M. J., Slapetova, I., Chen, P., Setiadi, J., Pandzic, E., Fawcett, L. K., Widger, J. R., Whan, R. M., Griffith, R., Ooi, C. Y., Kuyucak, S., Jaffe, A., & Waters, S. A. (2021). BioRxiv, 2021.08.11.456003.* `https://doi.org/10.1101/2021.08.11.456003`, (Submitted to Am J of Respiratory Cell and Mol Biology, under review).

2022 **Molecular dynamics and functional characterization of I37R-CFTR lasso mutation provide insights into channel gating activity.** , *Wong, S. L., Awatade, N. T., Astore, M. A.*, Allan, K. M., Carnell, M. J., Slapetova, I., Chen, P., Capraro, A., Fawcett, L. K., Whan, R. M., Griffith, R., Ooi, C. Y., Kuyucak, S., Jaffe, A., & Waters, S. A. (2022). IScience, 25(1), 103710.* `https://doi.org/10.1038/s41467-019-13114-4`.

* These authors contriubted equally to this work.

Selected Conference Presentations and Talks

2020 **64th Meeting of the Biophysical Society**, *Computational Techniques to Study Rare Cystic Fibrosis Mutations*, San Diego, CA, USA.

2020 **Physics in the Cloud**, *The Physics Inside your Cells*, Virtual.

2021 **65th Meeting of the Biophysical Society**, *Molecular Dynamics to Explain the Pathogenesis of Gating Class Cystic Fibrosis Mutations*, Virtual.

2021 **EMBL Australia Post Graduate Symposium**, *Computer Modelling the Root Cause of Cystic Fibrosis*, Virtual. Awarded 2nd place poster prize.

2021 **Thompson Prize Finalist Seminar**, *Diverse Simulation Techniques to Understand Cystic Fibrosis Pathogenesis*, Virtual.

2022 **66th Meeting of the Biophysical Society**, *Computer Modelling the Root Cause of Cystic Fibrosis*, San Francisco, California, USA.

2022 **Ligand Recognition and Molecular Gating Gordon Research Conference**, *Computer Modelling the Root Cause of Cystic Fibrosis*, Barga, Tuscany, Italy.

Skills

Software	Git, Linux, Gromacs, NAMD, PLUMED, Python, VMD, LaTeX
Techniques	Molecular Dynamics Simulations, Free Energy Calculations, Molecular Docking
Interpersonal	Presenting, Mentoring, Writing

References

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