

Brady Johnston

PHD STUDENT

School of Molecular Sciences, The University of Western Australia

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About Me

I am a PhD student working in biophysics, structural biology and molecular biology. I am working in the Bond Lab at the University of Western Australia on re-engineering RNA binding proteins as novel biotechnological tools.

I am passionate about clear and concise visualisation of complex data and intricate biological concepts. I am self-taught in data science and high-performance computing, putting these concepts into practice with my research, in my hobbies and sharing the knowledge readily through teaching workshops and create guides for other scientists looking to improve their abilities.

Education

Doctor of Philosophy

THE UNIVERSITY OF WESTERN AUSTRALIA

- Thesis: Investigating the Use of Designer PPR Proteins as Molecular Tools.

Perth, Australia

2017 - 2021

Bachelor of Science (Hons)

THE UNIVERSITY OF WESTERN AUSTRALIA

- First Class Honours in Biochemistry and Molecular Biology.

Perth, Australia

2016

Bachelor of Science

THE UNIVERSITY OF WESTERN AUSTRALIA

- Major in Biochemistry and Molecular Biology.

Perth, Australia

2013 - 2015

Research Skills

Molecular dynamics simulations using the Magnus, Topaz and Zeus computing clusters at the Pawsey Supercomputing centre.

High Performance
Computing

Proficient in R, bash and Python for reproducible computation and analysis. Creation of custom software pipelines for complex data analysis and visualisation.

Programming
Languages

Recombinant protein expression and purification. Cloning, sequencing and genomic analysis. Biophysical characterisation through size exclusion chromatography, microscale thermophoresis, FRET, single-molecule FRET, SPR, crystallography, SAXS and robotic lab automation.

Wet Lab Skills

Teaching Experience

School of Molecular Sciences

LAB DEMONSTRATING & TUTORIALS

- Teaching and demonstrating 1st and 3rd year biochemistry classes. Responsible for classes of 30 students. Preparation of materials, running of wet labs and marking of exams and tests.

The University of Western Australia

2017 - 2020

BioDiscovery Centre

TEACHING BIOTECHNOLOGY TO HIGH SCHOOL STUDENTS

- Teaching and demonstrating biotech skills and techniques to visiting classes of high school students. Leading classes of 20 - 30 students.

Harry Perkins Institute for Medical
Research, Perth

2014 - 2018

World Biotech Tour

MENTORING

- Mentoring of high-school student for participation in the World Biotech Tour, presented by SciTech.

SciTech, Perth

2016

Presentations

Lorne Proteins

POSTER

- Poster: The design of a FRET-based RNA biosensor.

Lorne, Australia

2020

International RNA Society

POSTER

- Poster: Single-molecule FRET of a designer RNA biosensor.

Online

2020

Lorne Proteins

POSTER

- Poster: The design of a FRET-based RNA biosensor.

Lorne, Australia

2019

International RNA Society

POSTER

- Poster: The design and use of a FRET-based RNA biosensor.

Krakow, Poland

2019

RNA Salon Perth

TALK

- Talk: Potential for PPR proteins as designer molecular tools.

Perth, Australia

2018

SMS Postgraduate Symposium

TALK

- PhD proposal: Investigating the use of designer PPR proteins as molecular tools.

Perth, Australia

2017

SCANZ - Crystal31

POSTER

- Poster: Conformational changes of an RNA bound PPR protein.

Bunbury, Australia

2017

Public Talks & Outreach

Blender for Biochemists

PROTEIN VISUALISATION TUTORIALS

- Tutorial series targeted at protein biochemists to introduce them to the 3D visualisation software Blender.

YouTube

2021

Interview with Particle

INTERVIEWED BY THE PARTICLE PODCAST

- Is a Virus Pretty? Interview with the Particle Podcast team from SciTech in Perth. Interview about structural biology, what a virus looks like and principles in molecular visualisation.

Particle Podcast

2020

UWA Science Exchange

PUBLIC TALK ON BEHALF OF UWA

- Discussion of structural biology, visualisations processes and emerging technologies for science communication and teaching.

Online through UWA

2020

Online R Course for Biologists

TEACHING SHORT COURSE

- Teaching a two-week short course targeted at wet-lab biologists. Introduction to the R programming language for complex analysis and data visualisation.

Online

2020