Gemma Fisher

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I am a PhD Student jointly supervised by Dr Rafael da Silva and Professor Rebecca Goss. My PhD is part of the EASTBIO Doctoral Training Partnership and falls under the theme of industrial biotechnology and bioenergy. My research will elucidate the mechanism of *Psychrobacter arcticus* ATP phosphoribosyltransferase with the aim to generate opportunities for protein engineering. ATP phosphoribosyl transferase is the first enzyme of the histidine biosynthetic pathway. The goal of this project is development of ATP phosphoribosyltransferase suitable for industrial application.

Employment Record

Biology and Chemistry Tutor, University of St Andrews

September 2015 – May 2017: Tutored first year premedical students in a group setting as part of St Andrews' Gateway to Medicine programme.

Education

PhD, University of St Andrews, Department of Biology

September 2017- Present: Mechanism and Engineering of A Cold-Adapted Hetero-Oligomeric ATP-Phosphoribosyl Transferase

Degree in Biochemistry BSc Hons., University of St Andrews

Awarded June 2017 (1st Class)

Skills and Knowledge

- Protein Purification
- Molecular Biology
- Steady-State Kinetics
- Pre-Steady-State Kinetics
- Isothermal Titration Calorimetry
- Differential Scanning Fluorimetry

Schools Outreach

University of the West of Scotland, STEM Academy: July 2018. Presented research to S5/S6 pupils and student primary teachers. Participated in STEM activities with S5/S6 pupils and student primary teachers in order to promote collaboration between universities and schools.

Society Membership

Biochemical Society

Publications

Fisher, G; Thomson, CM; Stroek, R; Czekster, CM; Hirschi, J; da Silva, RG: Allosteric Activation Shifts the Rate-limiting Step in a Short-Form ATP Phosphoribosyltransferase, Biochemistry, 2018, 57(29) 4357-4367

Alphey, MS; Fisher,G; Ge, Y; Gould, ER; Machado, TFG; Liu, H; Florence, GJ; Naismith, JH; da Silva, RG: Catalytic and Anticatalytic Snapshots of a Short-Form ATP Phosphoribosyltransferase, ACS Catalysis, 2018, 8 5601-5610