

Scarlet Apollinaire Ferrinho

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I am currently a PhD student at the University of St Andrews. My undergraduate degree in biomolecular science bridged the divide between chemistry and biology in a like manner to my PhD. Working with both category I and II microorganisms means I have excellent aseptic technique. Furthermore, I am competent in microbiology techniques in addition to synthetic and analytical chemistry. I am skilled in the identification, production, isolation and characterisation of natural products, as well as the production and purification of proteins.

Education

University of St Andrews

September 2018- Present

PhD Studentship

Professor Rebecca Goss, Professor Anna Amtmann, Dr Douglas McKenzie

University of St Andrews

September 2014- June 2018

BSc (Hons) Biomolecular Science (2:1)

St Marys RC High School

September 2007- August 2014

A Levels: Biology (A), Chemistry (A), French (B)

GCSE's: Nine A grades, Two B grades

Research Experience

University of St Andrews

September 2018-Present

My PhD project is supervised by Professor Rebecca Goss (University of St Andrews), Douglas McKenzie (Xanthella Ltd), and Professor Anna Amtmann (University of Glasgow). My research involves the manipulation of natural product biosynthetic gene clusters from cyanobacteria. I am using a combination of genomic, metabolomic and bioactivity analyses in accordance with molecular biology approaches to identify and heterologously express novel compounds which can then be isolated, purified and structurally characterized.

Archipelagos Institute of Marine Conservation *Summer 2018*

One of the projects I was involved in was to research the presence of microplastics in the environment. This involved the use of microscopy to identify and catalogue the types of microplastics isolated from a variety of sources- including bottled drinking water. Furthermore, I was also involved in a project assessing the biodiversity on an artificial reef. This required the ability to identify native and invasive fish species, free dive to up to 10 meters, and document in the field.

University of St Andrews

September 2017-April 2018

My undergraduate research project set out to express Actinomycete biosynthetic gene clusters identified by *in silico* genome mining using heterologous expression and refactoring. To

measure changes in the metabolome, LCMS was used in conjunction to several data analysis platforms.

Thanda Game Reserve

Summer 2015

Calculating the carrying capacity for elephants using long term vegetation data sets, and measuring the population levels of large herbivores, predators and birds with Operation Wallacea. This involved undertaking bird point counts, game transects, and habitat assessments which were quickly and accurately input onto a large database.

Research Skills and Knowledge

- Spectroscopy: MS/MS, UV, IR, 1D and 2D NMR
- Separation (Natural products and proteins): HPLC, FPLC, LC, TLC, Biotage, Manual
- Software: Xcalibur, SIEVE, XCMS, GNPS, Cytoscape, MestreNova, ChemDraw, R, antiSMASH, BLAST, PyMOL, Microsoft Office, Microsoft Excel, Snapgene,
- Microbiological Culturing (Class I and II), cloning.
- Chemical synthesis

Additional Experience

Scottish Deer Centre - Internship

January 2017

Lloyd's Pharmacy- Internship

September 2012- December 2012

Go Green LTD- Compliance Analyst

June 2011- September 2011

Volunteering and Outreach

Kirkaldy Hospital

January 2019- present

Girlguiding Scotland

November 2019- present

St Andrews Engaged

November 2018- present

STEM Ambassador

October 2018- present

Sunny Harbour Cat Rescue- Volunteer

September 2015- April 2017

Conferences/ Presentations and Posters

- Smart sustainable materials – IBioIC/SCOTCHEM workshop, Glasgow (17/12/18)
- Scottish industrial photobiology network meeting, Glasgow (16/11/18)
- MASTS annual science meeting, Glasgow (02-04/10/18)
- 2nd annual IBioIC symposium, Glasgow (29/01/19)
- IBioIC 5th annual conference, Glasgow (30-31/01/19)
- IBioIC induction, Glasgow (23-25/10/19)
- Treasures from the deep, Brussels (05/03/19)
- Waste to Wealth: Opportunities in the Circular Economy, St Andrews (14/06/19)
- The Chemistry and Biology of Natural Products Symposium, Warwick (25/06/19)
- Algae-UK: Algae and Sustainability, London (7/11/19)
- Scottish Metabolomics Meeting, Glasgow (13-15/11/19)

Additional Skills and Interests

- **Languages:** English (Native) French (Intermediate) Spanish (Basic) BSL (Basic)
- **Sports:** Competed to County level in Netball and Athletics. Hobbies in Equestrian, Hiking, Mixed Martial Arts and Swimming
- **Driving:** Clean Category B Driving Licence