**Olivia Nippe**

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**Education and Qualifications**

**October 2015 – Present University of Warwick:** PhD in Life Sciences

***Proposed topic of study:*** Circadian andEpigenetic Regulation of Plant Immunity

***Brief synopsis:*** This project, which follows a year of lab rotations, taught maths and programming modules, and a professional internship placement, aims to elucidate the likely present mechanism by which *Pseudomonas* manipulates circadian regulation of the plantimmune system, and so allow for development of more resistant strains of plants. The project will utilize the model *Arabidopsis thaliana* and will make use of RNA-seq and ChIP-seq techniques in combination with statistical analysis and modeling.

**2014 – 2015 University of York:** MSc in Biology

(by research)

***Thesis title:*** Diurnal Rhythms in *Drosophila* Visual Transduction in Clock Gene Mutants

***Brief synopsis:*** My use of the highly sensitive Steady State Visually Evoked Potential (SSVEP) assay revealed that the circadian rhythm in visual transduction of fruit flies may be uncoupled from the locomotor rhythm in some “clock” gene mutants. This evidence, which supports the hypothesis that certain circadian rhythms may persist in the absence of clock gene transcription, led me to suggest that a more ubiquitous process, such as a metabolic clock, is partially governing the rhythm in visual transduction.

**2011 – 2014** **University of York:** BSc Biochemistry

(Upper Second Class)

***Final Year Research Project Title:*** Measuring Circadian Rhythms in the Visual System of Flies.

***Brief synopsis:*** This study included the use of the flash electroretinography (fERG) and SSVEP assays to measure circadian rhythms in the signaling of wild type and locomotor-arrhythmic fruit flies at the level of the photoreceptors, lamina, and medulla, with the aim of elucidating the underlying neural components of the clock in the *Drosophila* visual system*.* Specifically, I investigated whether photosensitivity exhibits a similar rhythm to that of locomotor function, and at what level of neurons synaptic modifications were likely to be occurring. The work resulted in a contribution to a publication in Human Molecular Genetics.

**2006 – 2011**  **Ashford School, Kent:** Senior Prefect

**A-Levels:** Biology (A), Chemistry (A), Maths (A)

**AS-Levels:** Spanish (B)

**10 GCSEs:** Grades A\*-A

**Work Experience**

**June 2014-December 2014: University of York, Department of Biology:**

Senior Research Technician

As a Senior Research Technician I was responsible for planning and performing experiments relating to the objectives of the laboratory Primary Investigator. This involved independently collecting and analysing data, and regularly presenting findings at lab meetings. The position relied on a good understanding of fruit fly husbandry and genetics, as well as application of the Steady State Visually Evoked Potential and flash Electroretinogram assays in order to identify the visual phenotype of aging *Drosophila* that had been genetically modified to express mutations associated with human Parkinson’s Disease and obtain data of a publishable quality.

**Additional Skills**

***Communication Skills****:* I have excellent written and oral communication skills, which I have been able to develop throughout my Biochemistry degree, for example, through debating workshops, presentations, and tutorial discussion. Most recently I was asked to give an oral presentation at the European Biological Rhythms Society 2015 International Conference in Manchester presenting my Masters research and responding to questions from those in the field. This afforded me the opportunity not only to gain further confidence presenting to large groups of people, but also to appreciate the insight of other researchers and the value of networking, fostering relationships that could lead to interesting collaborations of work.

***Outreach and Public Engagement:*** In the past I have acted as a demonstrator in a science outreach program run by the University of York teaching Year 9 students to identify plant stomata using light microscopes. Answering their questions and encouraging them to consider the wider context of their experiment sparked an interest in communicating science that I hope to maintain alongside my career in academic research. I have since undertaken a 3-month internship at the Royal Botanic Gardens Edinburgh assisting the Education Department with the running of outreach activities, both for school children (ages 5 and up) and adults (CPD courses for science technicians). This covered general plant sciences for younger children and more advanced courses for adults such as micropropogation and aseptic technique. I gained a great amount of experience in planning and conducting outreach activities and interacting with members of the public of all ages and levels of scientific understanding.

***Time management:*** Over the course of my Biochemistry degree both my submitted course work and experimental write-ups were always completed on time, and I consistently achieved first-class marks in them. These skills have proven crucial in my undergraduate research project and Masters by research, particularly when measuring circadian rhythms in fruit flies as time of day, length of time being photoentrained or under constant conditions, and age of the fly must all be considered well in advance to make most efficient use of time in the lab, and to produce repeatable results. Thorough organization, time management, and planning with attention to detail are skills in which I excel.

***Computer Skills****:* I am proficient in most up-to-date Microsoft Office applications including PowerPoint, Word, and Excel, and am well versed in SPSS and GraphPad Prism. I have experience using R and Matlab for mathematical modeling and statistical analysis of large data sets. I also have experience analyzing 3D confocal image stacks of plant samples in MorphoGraphX.

***Courses undertaken:*** SysMIC Mathematics and Computational Methods for use in Systems Biology: Module 1 (University of Warwick, 2016)

Confocal Microscopy (University of York, 2014)

***Conferences attended:*** Grand Challenges in Plant Pathology (St Hugh’s Oxford, 2016)

European Biological Rhythms Society/World Congress of Chronobiology Conference (Manchester, 2015),

Presented in the “Timekeepers in the eye” session

**References**

Dr. Vardis Ntoukakis

PhD Supervisor

Life Sciences

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Past Employer and MSc Supervisor

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**Publications**

Afsari, F, Christensen, K, Smith, G, Hentzer, M, Nippe, O, Elliott, C & Wade, A 2014, 'Abnormal visual gain control in a Parkinson's disease model' *Human Molecular Genetics*, pp. 1-14., [10.1093/hmg/ddu159](http://dx.doi.org/10.1093/hmg/ddu159)