

# Andri Vasou

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## **Education**

University of St Andrews 2011 – 2016

### **PhD in Molecular Virology**

MRC DTG funded PhD project

Supervisors: *Dr. Catherine Adamson* and *Professor Richard Randall*

Thesis: “Development of a Novel Cell-Based Screening Platform to Identify Inhibitors of Viral Interferon Antagonists from Clinically Important Viruses”

Imperial College London 2009 – 2010

### **MSc in Molecular Biology and Pathology of Viruses (Virology)**

Supervisor: Professor Peter Karayiannis

Thesis: “Subcellular localisation of hepatitis B virus core and X proteins bearing amino-acid substitutions linked to liver disease”

University of Sheffield 2007 – 2009

### **BSc (Hons) Biology**

Honours project: “The genetic differences of SbeI, SbeIIa and SbeIIb maize starch branching enzymes and their differential gene expression”, *Supervised by Professor Mike Burrell*

National and Kapodistrian University of Athens 2005 – 2007

**BSc Biology** Degree completed at University of Sheffield (Credit Transfer)

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## **Research Experience**

**Postdoctoral Researcher** **November 2016 – Present**

Biotechnology and Molecular Virology (BMV) lab (University of Cyprus), in collaboration with Professor Richard Randall (University of St Andrews)

Project: Defective Interfering Particles of Paramyxoviruses: Inducers of Innate Immunity and their Potential Implications in Vaccine Development

- Development of a virus-free method for generating non-infectious parainfluenza virus 5 (PIV5) defective interfering particles (DIPs), and explore their potential as vaccine adjuvants.

## Postdoctoral Researcher

April – June 2016

Randall Lab, University of St Andrews

Project: Paramyxoviruses and their interactions with innate immunity

- Evaluating the immunogenicity of PIV5 DIPs in regards to their ability to trigger cellular IFN response
- Determining the effect of PIV5 phosphoprotein (P) on the regulation of virus transcription and replication using reverse genetics and replicon assays.

## PhD research project, University of St Andrews

September 2012 – March 2016

- Development of a cell-based screening platform for the identification of new antiviral drugs against clinically important viruses by targeting their viral interferon antagonists
- High-throughput screening (HTS) using a GFP reporter cell-line that stably expresses Respiratory Syncytial Virus (RSV) NS2 protein (A549.pr(ISRE).GFP-RSV.NS2) led to the identification of four compounds that specifically inhibit RSV NS2 protein.

## MRC-funded rotation year, University of St Andrews

September 2011 – August 2012

Project 1: “Revealing the structure of NS5A domain 1 of genotype 1a HCV”, supervised by Professor Gary Taylor

Project 2: “Codon de-optimisation of the Foot-and-Mouth Disease Virus (FMDV) genome for the generation of live-attenuated vaccine strains”, supervised by Professor Martin Ryan

## Experienced in techniques:

- Molecular biology techniques: Cloning, PCR (including reverse transcription and real time quantitative PCR), mutagenesis, immunofluorescence, western blotting, ELISA, immunoprecipitation
- BL2 tissue culture techniques: Adherent and suspension cell cultures, DNA transfections, siRNA gene silencing, FACS
- Genetic modification of cell lines: (i) Generation of cell lines that constitutively or inducibly express viral proteins (e.g. viral interferon antagonists) using lentiviral technology, (ii) short hairpin RNAs (shRNAs) for long-term knock down of factors related to the cellular IFN system (e.g. IRF1)
- Virology techniques: Preparation of virus stocks (RSV and PIV5), plaque assays, reverse genetics (PIV5), replicon assays (PIV5 and FMDV)
- High-through-put screening (HTS): Assay development, HTS and hit validation assays.
- Proteomics: Protein expression and purification, crystallization trials, thermal-shift assays and dynamic light scattering.
- Microscopy: DeltaVison, Incucyte, EVOS, ZEISS and Nikon Microphot-FXA

## **Publications**

Vasou A., Paulus C., Narloch J., Gage Z. O., Remeix-Welti M. A., Eleouet J. F., Nevels M., Randall R. E. & Adamson C. S. (2018), Modular cell-based platform for high throughput identification of compounds that inhibit a viral interferon antagonist of choice, *Antiviral Research*, 150:79-92. doi: 10.1016/j.antiviral.2017.10.012.

Vasou A., Sultanoglu N., Goodbourn S., Randall R. E., Kostrikis L. G. (2017), Targeting Pattern Recognition Receptors (PRR) for Vaccine Adjuvantation: From Synthetic PRR Agonists to the Potential of Defective Interfering Particles of Viruses. *Viruses* 9(7):186

Gage Z. O., Vasou A., Gray D. W., Randall R. E. & Adamson C. S. (2016), Identification of Novel Inhibitors of the Type I Interferon Induction Pathway Using Cell-Based High-Throughput Screening, *Journal of Biomolecular Screening*, 21(9):978

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## **Conference and Departmental Presentations**

Vasou, A. (2015, July), Identification of a Series of Compounds that Inhibit Respiratory Syncytial Virus (RSV) NS2 function using a Novel Cell-Based High-Throughput Screening Assay, Oral presentation at the ASV annual conference, London, Ontario, Canada

Vasou, A. (2015, April), Identification of a Series of Compounds that Inhibit Respiratory Syncytial Virus (RSV) NS2 function using a Novel Cell-Based High-Throughput Screening Assay, Oral presentation at the SGM annual conference, Birmingham, UK

Vasou, A. (2015, March), Exploring Viral Interferon Antagonists as Targets for Novel Antiviral Drugs, Departmental talk at Biomolecular Sciences Research Complex, University of St Andrews.

Vasou, A. (2015, February), Viral Interferon Antagonists as Targets for Novel Antiviral Drugs, Oral presentation at Postgraduate Conference, School of Biology, University of St Andrews.

Gage, Z. O., Vasou, A., Randall, R. E. & Adamson, C. S. (2014, April), Development of an A549 GFP Reporter Cell-line to Monitor Interferon Signaling, Poster presented at the SGM annual conference, Liverpool.

Vasou, A. (2013, May), Viral Interferon Antagonists as Targets for Novel Antiviral Drugs, Departmental talk at Medical School, University of St Andrews.

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## **Grant Awards**

- **Research Promotion Foundation grant for a postdoctoral researcher (pending)**  
Grant proposal title: Implications of Defective Interfering Particles of Paramyxoviruses in Innate Immunity and Vaccine Development
  - **University of Cyprus research grant for a postdoctoral researcher**  
€41,000/ for 1 year, Awarded November 2016  
Grant proposal title: Defective Interfering Particles of Paramyxoviruses: Inducers of Innate Immunity and their Potential Implications in Vaccine Development
  - **Minshull Travel Award: £700, Awarded April 2015**
  - **Sir Ken Murray Endowment Award: £500, Awarded April 2015**
  - **SGM travel grant for international conferences: £500, Awarded April 2015**
  - **American Society for Virology (ASV) travel grant award: \$500, Awarded March 2015**
  - **SGM travel grant for SGM annual conference: £350, Awarded April 2012 - April 2015**
  - **MRC Doctorate Training Grant (DTG), Awarded September 2011/ for 4 years**
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## **Teaching and Supervision Experience**

### **Scientific Collaborator, European University of Cyprus, September 2016 – Present**

I am teaching the Virology course (BIO413; compulsory course) to final-year undergraduate students, who study for BSc Biology (General Microbiology). I have designed the course (lectures and practicals) to provide knowledge within key areas of molecular virology and a strong foundation into the principles and practices of working with viruses at Containment Level 2. Average size of the class is 15 students.

### **Special Scientist, University of Cyprus, January 2016 – Present**

I am teaching the Principles of Biology II course (BIO111; compulsory course) to first-year undergraduate students, who study for BSc Biology in the School of Biological Sciences. The topics in this course include molecular biology, genetics and an introduction to virology. Average size of the class is 40 students.

### **Supervision of an undergraduate student during their honours project, September 2017 – Present**

I am supervising an undergraduate student (Miss Pavlina Fetta) with her final year research project, which focused on the development of a helper-virus free method for rescuing recombinant PIV5 lacking the gene encoding for phosphoprotein.

### **Supervision of a PhD student during their PhD Qualification Exam, January 2017 – Present**

I am supervising a first year PhD student (Miss Nazife Sultanoglu) during her PhD Independent Study, which was titled 'Toll-like receptor agonists: From Biology to Vaccine Development' and her PhD

Qualification Exam, which was titled 'Investigation of the Immunostimulatory and Latency Reversal Effects of Poly-ICLC in PBMCs and CD4+ T cells obtained from antiretroviral-suppressed HIV-1 infected individuals'

#### **Supervision of an undergraduate student during a summer project, July - September 2017**

I have supervised a visiting undergraduate student (Mr Andreas Hadjicharalambous), who studies Biochemistry (Mbiochem) at the University of Oxford, during his summer research project in BMV lab. The project focused on characterising BSRT7 cell-lines that constitutively express PIV5 P protein by evaluating the expression and functionality of PIV5 P protein.

#### **Supervision of an Intern Student, May 2017**

I have supervised an internship student (Miss Vania Constantinou) visiting from the Dubai American Academy. The internship project focused on evaluating the cytopathic effect (CPE) of Sendai virus (SeV) defective interfering particles.

#### **Laboratory Demonstrator, University of St Andrews, September 2014 – June 2015**

I was tutoring a group of 12 students in the Biology Department undergraduate teaching laboratories (Biology practical). I was also marking their submitted work, including lab reports and essays, giving them constructive feedback to help them improve their laboratory and writing skills.

#### **Supervision of an undergraduate student during their honours project, February – May 2014**

During the second year of my PhD, I supervised an undergraduate student (Miss Charlotte Wood) with her final year research project, which focused on the development of a cell-based assay for the identification small molecule inhibitors against Rabies P protein.

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### **Professional Memberships**

- Member of American Society for Virology (ASV) November 2014 – Present
- Member of the Microbiology Society October 2012 – Present

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### **Administrative and Other Experience**

#### **Seminar hostess, University of St Andrews**

**September 2014 – September 2015**

I was organising the weekly virology talks, which are given by post-docs, PhD and Master students in the Virology Department.

**Room-controller, University of St Andrews****October 2012 – September 2015**

I was a room controller in the Clinical Skills exams, which are held by the Medical School. I was responsible for the smooth conduct of the exams to make sure that exams are kept on time and to make it is less stressful for everyone involved (students, simulated patients and examiners).

**Social media assistant****March – December 2015**

I was a member of the university's social media team that manages the Twitter account of the Biomedical Sciences Research Complex (BSRC) at the University of St Andrews.

**Science contributor at Cosmopolis Greek-American Magazine****March – June 2011**

I published several articles for the science column of the monthly issued magazine Cosmopolis

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**Skills**

- **Languages:** Fluent English and Greek
  - **IT Skills:** Microsoft Office (Word, Excel, PowerPoint), SerialCloner, Geneious, Familiar with the statistical package of MINITAB and Prism (GraphPad)
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**Referees****Prof Rick E. Randall (Collaborator and PhD supervisor)**

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**Dr Catherine S. Adamson (PhD supervisor)**

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