Edward Emmott – Curriculum Vitae

Contact

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Experience

Research Associate: Northeastern University, USA (Oct 2017-Present)
Nikolai Slavov lab

- My current research focuses on applying quantitative and single cell proteomics to the study of protein synthesis in the context of the immune response to infection.
- Awarded Tandem Mass Tag Research Award (Thermo Scientific, 2018)

Research Associate: University of Cambridge, UK (Oct 2012-Sep 2017)
Imperial College London, UK (Sept 2011-Sept 2012)
Ian Goodfellow Lab

- Elected Postdoctoral member, Clare Hall, Cambridge (2016-2017)
- Co-organiser of the Cambridge Virology Seminar series (2016-2017)
- My research has focused on the interactions of murine norovirus with the host cell. In particular I have studied its impact on host translation, and the roles of the viral VPg and protease proteins.
- Successful collaborative work included investigation of calicivirus virion structures, animal noroviruses, the norovirus protease, and phosphoproteomic analysis of bluetongue virus infection.

Education

Postgraduate: University of Leeds, UK (2007-2011)
PhD. Thesis topic: Coronavirus interactions with the host cell
Julian Hiscox Lab

- Special Commendation for research excellence from the University of Leeds postgraduate examinations board based on Thesis and Viva.
- My PhD focused on the interactions of the coronavirus infectious bronchitis virus with nucleoli, and involved some of the first applications of quantitative mass spectrometry-based proteomics to the study of virus-host interactions.
- Successful collaborations applying these techniques to the study of influenza A virus and respiratory syncytial virus were published in the Journal of Proteome Research, and Molecular & Cellular Proteomics.

Undergraduate: University of Warwick, UK (2004-2007)
BSc. Hons., Medical Microbiology & Virology. Class I
Keith Leppard Lab

Research

(*joint/sole corresponding author)

Preprints:

1. **Emmott**, Jovanovic & Slavov **(2018)** Ribosome stoichiometry: from form to function. *PeerJ Preprints.* doi: https://doi.org/10.7287/peerj.preprints.26991v1
2. **Emmott*,** de Rougemont, Haas & Goodfellow **(2017)** Spatial and temporal control of norovirus protease activity is determined by polyprotein processing and intermolecular interactions within the viral replication complex. *bioRxiV*. doi: 10.1101/175463

Journal Articles:

1. Fleith, Mears et. al. **(2018)** IFIT3 and IFIT2/3 promote IFIT1-mediated translation inhibition by enhancing binding to non-self RNA. NAR. DOI:10.1093/nar/gky191
2. Kitano, Hosmillo, **Emmott**, et. al. **(2018)** Selection and Characterization of Rupintrivir-Resistant Norwalk Virus Replicon Cells *in vitro*. Antimicrob. Agents Chemoth. DOI:10.1128/AAC.00201-18
3. Smielewska, **Emmott**, Goodfellow & Jalal **(2018)** In vitro sensitivity of human parainfluenza 3 clinical isolates to ribavirin, favipiravir and zanamivir. J. Clin. Virol. DOI:10.1016/j.jcv.2018.02.009)
4. Hunter, Scourfield, **Emmott** & Graham **(2017)** VPS18 recruits VPS41 to the human HOPS complex via a RING-RING interaction. Biochemical Journal. 474(21): 3615-3626
5. Mohl, **Emmott** & Roy **(2017)** Phosphoproteomics analysis reveals the importance of kinase regulation during orbivirus infection. *Mol. Cell. Proteomics.* 16(11): 1990-2005
6. **Emmott*** *et. al.* **(2017)** Norovirus-mediated modification of the translational landscape via virus and host-induced cleavage of initiation factors. *Mol. Cell. Proteomics*. 16(4 suppl 1):S215-S229
7. Conley, **Emmott**, *et. al.* **(2017)** Vesivirus 2117 capsids more closely resemble sapovirus particles than other known vesivirus structures. *J. Gen. Virol*. 98: 68-76
8. **Emmott***, Sweeney & Goodfellow. **(2015)** A cell-based FRET sensor reveals inter- and intragenogroup variation in norovirus protease activity and polyprotein cleavage. *J. Biol. Chem*. 290(36): 27841-53
9. Caddy, de Rougemont, **Emmott** et. al. **(2015)** Evidence for human norovirus infection of dogs in the UK. *J.Clin. Microbiol*. 53(6): 1873-83
10. Royall et. al. **(2015)** Murine norovirus 1 (MNV1) replication induces translational control of the host by regulating eIF4E activity. *J. Biol. Chem*. 290(8): 4748-58
11. Chung et. al. **(2014)** Norovirus translation requires an interaction between the C-terminus of VPg and eIF4G. *J. Biol. Chem.* 289(31): 21738-50
12. Hwang *et. al.* **(2014)** Methods to study murine norovirus. *In* Current Protocols, 33: 15K2.1-15K2.61
13. **Emmott*** & Goodfellow. **(2014)** Identification of protein interaction partners in mammalian cells using SILAC-immunoprecipitation quantitative proteomics. *J. Vis. Exp*. 89: e51656
14. Caddy, **Emmott**, et. al. **(2013)** Serological evidence for multiple strains of canine norovirus in dogs in the UK. *Plos One*. 8: e81596
15. Arias, **Emmott**, Vashist & Goodfellow. **(2013)** Progress towards the prevention and treatment of norovirus infections. *Future Microbiology*, 11: 1475-1487
16. **Emmott*** et. al. **(2013)** The cellular interactome of the coronavirus infectious bronchitis virus nucleocapsid protein and functional implications for virus biology. *J. Virol*, 87: 9486-9500
17. Munday, Surtees, **Emmott**, *et al.* **(2012)** Using stable isotope labelling by amino acids in cell culture (SILAC) and quantitative proteomics to investigate the interactions between viral and host proteomes. *Proteomics*, 44:1-7
18. Munday, **Emmott**, *et al.* **(2010)** Quantitative proteomic analysis of the cellular proteome in A549 cells infected with human respiratory syncytial virus. *Mol. Cell. Proteomics*, 11: 2438-2439
19. **Emmott** *et al.* **(2010)** Quantitative proteomics using SILAC coupled to LC-MS/MS reveals changes in the nucleolar proteome in influenza A virus infected cells. *J. Proteome Res*., 9: 5335-5345
20. **Emmott** *et al.* **(2010)** Elucidation of the avian nucleolar proteome by quantitative proteomics and alterations in infectious bronchitis virus infected cells. *Proteomics*, *10:* 2558-2562
21. **Emmott** *et al.* **(2010)** Quantitative proteomics using stable isotope labelling of amino acids in cell culture (SILAC) reveals changes in the cytoplasmic, nuclear and nucleolar proteomics of cells infected with the coronavirus infectious bronchitis virus, *Mol. Cell. Proteomics*, 9: 1920-1936
22. **Emmott** & Hiscox **(2009)** Nucleolar targeting: the hub of the matter, *EMBO Reports*, 10: 231-238 (Highly cited)
23. Leppard, **Emmott**, Cortese & Rich **(2009)** Adenovirus type 5 E4 Orf3 protein targets promyelocytic leukaemia (PML) protein nuclear domains for disruption via a sequence in PML isoform II that is predicted as a protein interaction site by bioinformatic analysis, *J. Gen. Virol*., 90: 95-104
24. **Emmott** *et al.* **(2008)** Viral nucleolar localisation signals determine dynamic trafficking within the nucleolus, *Virology*, 380: 191-202

Book chapter:

1. Matthews, **Emmott** & Hiscox **(2011)** Viruses and the nucleolus. *In* The nucleolus, ed. M. Olson. 321-343

Teaching/Mentoring Experience

Mentoring

- Laboratory supervision of three PhD students in the Goodfellow lab.
- Laboratory supervision of seven undergraduate and masters students at Leeds & Cambridge for their final year project/dissertation, all of whom have gone on to attain either a 2:1 or 1st for their projects, with the majority attaining a 1st.
- My most recent undergraduate student at Cambridge was awarded a prize for the best project in Virology (2015).

Teaching

- Small group teaching: University of Cambridge - Pathology 2nd Year tutorials (Robinson College, September 2013-June 2015), Virology 3rd Year tutorials (Queens College, Feb 2017). Teaching small groups of usually 2-5 students.
- The courses I have taught covered Virology, and Introductory Pathology (covering Virology, Immunology, Microbiology, Mycology, & Genetic Disease and Cancer).
- Extensive demonstrating experience in undergraduate lab practicals from both Leeds and Cambridge, including giving pre-practical introductory talks to groups of students (20-30+).

Citizenship

- I am an ASAPbio and eLife ambassador, supporting the use of preprints in the life sciences.
- I was co-organiser of the Cambridge Virology/Medicine seminar series from September 2016 until June 2017, this involved contacting and arranging seminars with external speakers, hosting and organising the visit.
- I aided in the redesign of the micro2040 virology laboratory practical, a key component of the undergraduate microbiology degree programme at Leeds.

Communication & Funding

Awards/Grants

- Thermo Scientific Tandem Mass Tag Research Award ($5,000, 2018) – International award for 'innovative and impactful' research in the area of MS-based proteomics. Small consumables budget – PI status.
- Microbiology Society Research Visit Grant (£3,000, 2016) – flight and accommodation expenses for a research visit.
- Ita Askonas Bursary (£5,000, 2015) – funding for accommodation and consumables for a research visit.

Presentations

Invited speaker:

- Pirbright Institute seminar series. May 2017, UK
- Clare Hall, Cambridge. Oct 2016, UK
- PHE Cambridge seminar series. August 2015, UK.
- UCL – Virtual Virology seminar series. November 2014, UK.
- Roslin Institute (University of Edinburgh) – Virology seminar series. March 2014, UK.

Conference presentations:

- VI International Calicivirus Conference. October 2016, USA.
- Society for General Microbiology Conference. 2015, 2013, 2010, UK
- Translation UK. July 2013, UK
- Cold Spring Harbour: Translational Control. September 2012, USA. (Poster)
- VI International symposium of Avian Corona- and Pneumoviruses and complicating pathogens. June 2009, Germany.

External engagement

- I have written popular science articles for 'The Conversation' (2017) communicating virology and health topics for public audiences, which have been syndicated out to the popular press and social media including the Independent, IFLScience, Phys.org & the I (circulation 290k).
- Cambridge Science Festival volunteer (2017). Managed/Supervised the Goodfellow lab activities teaching children about antibody specificity/viruses.
- STEMnet Ambassador (2011-2015): UK national science communication scheme designed to have scientists encourage the next generation to study science. Involved activities at schools, careers events.
- Big Bang fair, London 2013. Assisted on the Society for General Microbiology stall at the fair.

Academic Service and Memberships

Academic Service

- Peer review board member for JoVE (2014-Present)
- Peer reviewer for: Molecular & Cellular Proteomics, Proteomics; BAA Proteins and Proteomics, BAA Molecular & Cell Research; PLOS One, Scientific Reports; Journal of General Virology, Virology; Journal of Medical Virology, Journal of Translational Medicine; Vaccine, Molecules; Infection, Genetics and Evolution; Veterinary Sciences.

Professional memberships

- ASBMB (2015-Present)
- HUPO member (2013-Present)
- Biochemistry Society (2013-Present)
- Microbiology Society (2006-Present)

References – available upon request