

BIOGRAPHICAL SKETCH

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| NAME Schroeder, Declan | POSITION TITLE Associate Professor of Virology | | |
| DEPARTMENT Veterinary Population Medicine, University of Minnesota | | | |
| EDUCATION/TRAINING | | | |
| INSTITUTION AND LOCATION | DEGREE <i>(if applicable)</i> | MM/YY | FIELD OF STUDY |
| University of Cape Town | B.Sc. | 12/93 | Microbiology |
| University of Cape Town | B. Sc (Hons) | 12/94 | Microbiology |
| University of Cape Town | Ph.D. | 12/01 | Molecular & Cell Biology |
| The Marine Biological Association of the UK | Postdoctoral | 02/03 | Virus Ecology |

A. Personal Statement

I was recently appointed in February 2018, through the AGREETT program, as an Associate Professor of Virology in the Veterinary Population Medicine Department in the College of Veterinary Medicine at the University of Minnesota. I have over 20 years of research experience as a molecular biologist in the areas of virology, biodiversity, pathology and genomics – in particular the use of genomic tools to study key biological processes. My research program is focused on pathogen discovery; comparing and contrasting a diverse array of host-virus systems. I am particularly interested in seeing my fundamental research translated into practical solutions. An example being our recent discovery of a new virus resistance mechanism in honey bees; a novel way of the protecting this important pollinator (Patent filed). My lab routinely develops molecular tools to enhance detection and surveillance of viral pathogens so as to improve our understanding of the true impact of (1) viral pathogens on honey bee health, (2) viral pathogens in swine respiratory diseases, (3) application of virus or phage therapy in pig, cattle and fish farms, and (4) the evaluation of the Virome in disease outcomes in pig, cattle, honey bee & aquatic production systems. I have a track record in winning and administered research projects (over \$8 million equivalent from 10 different funders), collaborated with other researchers (nationally and internationally), and produced several high impact peer-reviewed publications (4 Nature & Science papers). In summary, I have a demonstrated record of accomplished and productive research projects in areas of high relevance for both environmental and agricultural sciences.

B. Positions and Employment

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| 2004-2012 | Research Fellow, The Marine Biological Association of the UK |
| 2012-2018 | Senior Research Fellow, The Marine Biological Association of the UK |
| 2014-2018 | Director of the MBA Culture Collection |
| 2017-2018 | Chair of Viral Metagenomics, University of Reading, UK |
| 2018- | Associate Professor, Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, MN |
| 2018- | Honorary Chair of Viral Metagenomics, University of Reading, UK |

C. Selected Peer-reviewed Publications (Selected from 69 peer-reviewed publications)

In high impact journals &/or cited >100 (i10 index = 51 & h-index = 32:

<http://scholar.google.co.uk/citations?user=isJrudYAAAAJ&hl=en>:

1. Cock et al. (2010). The Ectocarpus genome and the independent evolution of multicellularity in the brown algae. **Nature** 465, 617. (<http://dx.doi.org/10.1038/nature09016>) cited **549**
2. Martin et al. (2012) Global honeybee viral landscape altered by a parasitic mite. **Science** 336, 1304. (<http://dx.doi.org/10.1126/science.1220941>) cited **291**
3. Wilson et al. (2005) Complete genome sequence and lytic phase transcription profile of a Coccolithovirus. **Science** 12 August: 1090. (<http://dx.doi.org/10.1126/science.1113109>) cited **235**
4. Read et al. (2013) Pan genome of the phytoplankton *Emiliana* underpins its global distribution. **Nature** 499 (7457), 209. (<http://dx.doi.org/10.1038/nature12221>) cited **215**
5. Keeling et al. (2014) MMETSP: Illuminating the functional diversity of life in the oceans through transcriptome sequencing. **PLoS Biology** 12 (6), e1001889 (<https://dx.doi.org/10.1371/journal.pbio.1001889>) cited **258**
6. Baker & Schroeder (2008) The use of RNA-dependent RNA polymerase for the taxonomic assignment of Picorna-like viruses (order Picornavirales) infecting *Apis mellifera* L. populations. **Virology Journal** 2: 10 (<https://dx.doi.org/10.1186/1743-422X-5-10>) cited **168**
7. Highfield et al. (2009) Deformed wing virus implicated in overwintering honeybee colony losses. **AEM**. 75: 7212 (<https://dx.doi.org/10.1128/AEM.02227-09>) cited **162**
8. Schroeder et al. (2002) Coccolithovirus (Phycodnaviridae): characterisation of a new large dsDNA algal virus that infects *Emiliana huxleyi*. **Archives of Virology** 147: 1685-1698. (<https://dx.doi.org/10.1007/s00705-002-0841-3>) cited **157**

Additional recent 5 publications of importance to virus discovery

9. Mordecai et al (2016) Superinfection exclusion and the long-term survival of honey bees in *Varroa* infested colonies. **ISME Journal** 10, 1182–1191. (<https://dx.doi.org/10.1038/ismej.2015.186>)
10. Mordecai et al (2016) Diversity in a honey bee pathogen: first report of a third master variant of the Deformed Wing Virus quasispecies. **ISME Journal** 10, 1264–1273 (<https://dx.doi.org/10.1038/ismej.2015.178>)
11. McKeown et al (2017) Phaeoviruses discovered in kelp (Laminariales). **ISME Journal** advance online publication 25 July 2017 (<https://dx.doi.org/10.1038/ismej.2017.130>)
12. Kevill et al (2017) ABC Assay: Method development and application to quantify the role of three DWV variants in overwinter colony losses of European honey bees. **Viruses** 9: 314 (<https://dx.doi.org/10.3390/v9110314>)
13. Flaviani et al (2017) A pelagic Microbiome (Viruses to Protists) from a small cup of seawater. **Viruses** 9:40 (<https://dx.doi.org/10.3390/v9030047>)