

# Dr Sebastian Eves-van den Akker

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## Employment

- 2018-2023 **BBSRC David Phillips Fellow**, The University of Cambridge. *At time of award was the first double BBSRC fellow.*
- 2015-2018 **BBSRC Anniversary Future Leaders Fellow**, The University of Dundee and The John Innes Centre. *At time of award was the youngest BBSRC fellow.*

## Education

- 2010-2014 **PhD**, The James Hutton Institute and University of Leeds. *Thesis received an award of Research Excellence.*
- 2007-2010 **BSc (Hons) Biology, 1<sup>st</sup>**, University of Leeds. *Highest average 3<sup>rd</sup> year grade.*

## Personal statement

I am a geneticist with an interest in global food security. I try to understand a dialogue between kingdoms of life: the two-way molecular communication between plants and parasitic nematodes. I find this fascinating because the outcome of this communication dictates plant organ development, nematode sex determination, and ultimately human food security.

## Research

- 2018 BBSRC David Phillips Fellowship entitled “The regulation of plant-nematode parasitism” ~£1,000,000
- 2017 Carnegie Trust, Research Incentive Grant “Parasitism master regulators of parasitic nematodes” ~£7,500
- 2017 Wellcome Trust, Institutional Strategic Support Fund, “Parasitism master regulators” ~£12,500
- 2016 British Society of Plant Pathology Studentship, “Genome assembly improvement using ultra-long read Nanopore MinION sequencing” ~£2,500
- 2016 BBSRC International Workshop Grant, “Transformation of plant-parasitic nematodes” ~£10,000
- 2015 BBSRC Anniversary Future Leaders Fellowship, “A synthetic biology approach to develop durable disease resistance in crops” ~£300,000
- 2014 Scottish Society of Crop Research Consumables Grant, “Metagenetics of Scottish *Globodera pallida* populations” ~£3,000
- 2014 Sustainable Agriculture for Global Food Security Consumables Grant, “Intra-specific variation of *G. pallida* in UK field populations” ~£1,000

## Citizenships

### Committee memberships and interactions with bodies that influence policy

- 2016-present UK Plant Sciences Federation representative for SCI-HG
- 2016 UK – US, BBSRC – NSF/NIFA Plant health workshop “White Paper”, see ref 9
- 2014-present Society of chemical industry horticultural group committee member (SCI-HG)

### Lead on international consortia

- 2016-Present Transformation of plant-parasitic nematodes consortium (14 members, 10 institutes, 6 countries)
- 2014-2016 The *G. rostochiensis* genome consortium (~40 members, 10 institutes, 5 countries)

### Invited talks

- 2018 Organization of Nematologists of Tropical America (Arequipa, Peru)
- 2016 Agriculture and Horticulture Development board (Peterborough, UK)
- 2016 UK – US, BBSRC – NSF/NIFA Plant health workshop (Washington DC, USA)
- 2016 Organization of Nematologists of Tropical America (Montreal, Canada)
- 2015 Society of Nematologists (Michigan, USA)

### Opinion pieces and book chapters

- 2017 “Sex: not all that it’s cracked up to be?” – PLOS Genetics perspective article
- 2016 “Genome Evolution of Plant Parasitic Nematodes” – Annual Review of Phytopathology

- 2016 “Opening the effector protein toolbox for plant parasitic cyst-nematodes” - Molecular plant  
2015 “Genomics and Transcriptomics – a revolution in the study of cyst nematode biology” Cyst Nematodes  
2014 “Feeding tubes and plugs: new perspectives on function” – Nematology

### Awards/Prizes

- 2018 **David Phillips Fellow** – BBSRC  
2016 **Young Researcher in Crop Sciences** – Society of Chemical Industry  
2016 **Peter Massalski Prize** – Scottish Society of Crop Research  
2015 **Anniversary Future Leader Fellow** – BBSRC  
2014 **Letter of Research Excellence** – University of Leeds  
2014 **David Miller Award** – Society of Chemical Industry  
2014 **1<sup>st</sup> Place** – University of Leeds Plant Sciences Post Graduate Symposium  
2014 **3<sup>rd</sup> Place** – International Congress of Nematology  
2013 **Best Platform Presentation** – AAB Advances in Nematology  
2013 **1<sup>st</sup> Place** – Science for Life Doctoral Student Competition  
2013 **Chief Executive Prize** – The James Hutton Institute  
2012 **1<sup>st</sup> place** – Faculty of Biological Sciences Post Graduate Symposium  
2012 **1<sup>st</sup> place** – University of Leeds Post Graduate Research Conference

### Teaching

#### PhD students

- 2016-2020 Kerry Leslie: Joint supervised with Prof J. Jones at the University of St Andrews  
2015-2019 Duqing Wu: Joint supervised with Prof. P.E. Urwin at the University of Leeds

#### Lectures

- 2017/2018 University of Dundee: Advance Plant Sciences BS42005  
2016/2017 University of Dundee: Advance Plant Sciences BS42005  
2015/2016 University of Leeds: Animals as Pests BLGY2253  
2015/2016 University of Dundee: Advance Plant Sciences BS42005

### Languages

English – Mother tongue, French – Fluent conversations over dinner.

### Bibliography (\*corresponding)

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2. P. Vieira, T. Mayer, **S. Eves-van den Akker**, D. K Howe, I. Zasada, T. Baum, J. D Eisenback, K. Kamo (2018). “Identification of candidate effector genes of *Pratylenchus penetrans*”. **Molecular Plant Pathology** doi.org/10.1111/mpp.12666
3. **S. Eves-van den Akker** and J. Jones (2017). “Sex: Not all that it’s cracked up to be?”. **PLOS Genetics** 10.1371/journal.pgen.1007160
4. T. Mroz, **S. Eves-van den Akker**, A. Bernat, A. Skarzyńska, L. Prysycz, M. Olberg, M. Havey, G. Bartoszewski (2017). Transcriptome analyses of mosaic (MSC) mitochondrial mutants of cucumber in a highly inbred nuclear background. **G3: Genes, Genomes, Genetics**. g3. 300321.2017
5. E.G.J. Danchin, L. Perfus-Barbeoch, C. Rancurel, P. Thorpe, M. Da Rocha, S. Bajew, R. Neilsen, E. Sokolova (Guzeeva), C. Da Silva, J. Guy, K. Labadie, D. Esmenjaud, J. Helder, J.T. Jones and **S. Eves-van den Akker\*** (2017). The transcriptomes of *Xiphinema index* and *Longidorus elongatus* reveal independent acquisition of parasitism genes by horizontal gene transfer in early-branching plant-parasitic nematodes. **Genes**, 8(10), 287
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7. W. S. Phillips, **S. Eves-van den Akker**, and I. A. Zasada (2017). The transcriptome of *Globodera ellingtonae*. **Nematology**, 49(2), 129-130
8. J. T. Jones, **S. Eves-van den Akker** and T. Kikuchi (2017). Genome Evolution of Plant Parasitic Nematodes. **Annual Review of Phytopathology** 55(1)
9. R. W. Michelmore, G. Coaker, R. Bart, G. A. Beattie, A. Bent, T. Bruce, D. Cameron, J. Dangl, S. Dinesh-Kumar, R. Edwards, **S. Eves-van den Akker**, et al., (2017). Foundational and translational research opportunities to improve plant health. **Molecular Plant-Microbe Interactions** DOI: <http://dx.doi.org/10.1094/MPMI-01-17-0010-CR>
10. **S. Eves-van den Akker\*** and P. Birch (2016). Opening the effector protein toolbox for plant parasitic cyst-nematodes. **Molecular plant** DOI: <http://dx.doi.org/10.1016/j.molp.2016.09.008>
11. J. B. Noon, Mingsheng Qi, D. N. Sill, U. Muppirala, **S. Eves-van den Akker**, T. R. Maier, D. Dobbs, M. G. Mitchum, T. Hewezi, T. J. Baum (2016) A Plasmodium-like virulence effector of the soybean cyst nematode suppresses plant innate immunity. **New Phytologist** DOI: 10.1111/nph.14047
12. **S. Eves-van den Akker\*** and D.R. Laetsch, P. Thorpe, C. J. Lilley, E. G. J. Danchin, M. Da Rocha, C. Rancurel, E. Grenier, J. Montarry, N. E. Holroyd, J. A. Cotton, B. Mimee, M. Duceppe, I. Boyes, J. Lapalme, M. Esquibet, M. Sabeh, M. Rott, H. Overmars, A. Tomczak, G. Smant, V. Blok, S. Mantelin, P. J. A. Cock, W. Phillips, J. Marvin, L. M Jones, H. B. Yusup, P. E Urwin, M. Blaxter, J. T. Jones. (2016). The genome of the yellow potato cyst nematode, *Globodera rostochiensis*, reveals insights into the basis of parasitism and virulence. **Genome Biology** 201617:124 DOI: 10.1186/s13059-016-0985-1
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