

Cooperating Faculty Member (CFM) within CNAS

DEPARTMENT OF NEMATOLOGY (requesting department)

Cooperating Faculty Appointment/Reappointment


Instructions: Please complete the following.

1. Attach a current CV of potential CFM.
2. Statement of Anticipated or Past Involvement in the department referenced above.

Please provide or attach a statement that describes your anticipated or past involvement as a CFM in the department referenced above.

With my group in UCR's Nematology department we study the evolutionary genomics and systems biology of interactions between plants and plant-parasitic nematodes and multi-trophic interactions between plants, plant-feeding insects and entomopathogenic nematodes, with a particular focus on the central role that plant secondary metabolites play. Given our interest in plant biology and the obvious strengths in this area in all its facets of the Botany and Plant Sciences department I would like to be involved substantially in your department's activities. Among other things, I would like to collaborate with faculty members in the department, be able to accept graduate students in my group, serve on qualifying and PhD committees, supervise internships and research projects, as well as attend and host department seminars. It would be an honor and great pleasure if I could become a CFM with your department.

3. My signature below (or attached emailed approval) indicates my willingness to accept an appointment as a CFM in the department referenced above.

Printed Name:  Simon C. "Niels" Groen Signature: _____ Date: 01/12/2022

4. Approval by Cooperating Faculty Member's Home Department Chair
As Chair of the Department of Nematology, my signature below (or attached emailed approval) indicates my approval of Simon Groen participating as a CFM in the department referenced above.

Printed Name: Tim Paine Signature:  Date: 2/3/2022

HOST DEPARTMENT VOTE: FOR, AGAINST, UNAVAILABLE

DATES OF APPOINTMENT: 01/01/2022 TO 12/31/2023

5. Approval by CFM's Host Department Chair
As Chair of the Department referenced above, my signature below (or attached emailed approval) indicates my approval of Simon Groen participating in the department referenced above.

Printed Name: Patricia Springer Signature: _____ Date: _____

Cooperating Faculty Member (CFM) within CNAS

CNAS DEAN'S APPROVAL:	
	Date:

Appointments/reappointments are for 2 years for Asst. and Assoc. Professors, and 3 years for full Professors

- To add electronic signatures, unprotect the document.
- Once approved, please send a copy of the host department's appointment letter to the appropriate analyst in the CNAS Dean's office and to Amanda Wong in the Graduate Division.

Simon C. "Niels" Groen

Department of Nematology, Institute of Integrative Genome Biology, University of California at Riverside
Address: Genomics Building Rm 2202A, 900 University Ave, Riverside, CA 92503, USA
Phone: +1 520 392 4720; Email: simon.groen@ucr.edu

CURRENT POSITION

Assistant Professor of Evolutionary Systems Biology July 2021
University of California at Riverside
Department of Nematology
Institute of Integrative Genome Biology
Center for Plant Cell Biology

PREVIOUS POSITIONS

Zegar Family Foundation Post-Doctoral Research Associate 2015-2021
New York University, Dept. of Biology, Center for Genomics and Systems Biology
Adviser: Michael Purugganan

John Templeton Foundation Post-Doctoral Research Associate 2014-2015
University of Arizona, Dept. of Ecology and Evolutionary Biology
University of California at Berkeley, Dept. of Integrative Biology
Adviser: Noah Whiteman

EDUCATION

Ph.D. in Plant Sciences 2010-2014
University of Cambridge, Magdalene College, UK
'Manipulation of plant-insect interactions by insect-borne plant viruses'
Advisers and tutor: John Carr, Beverley Glover, Paul Dupree (University of Cambridge)
Examiners: David Baulcombe (University of Cambridge), John Pickett (Rothamsted Research)

B.Sc. and M.Sc. in Biology, specialization **Ecology** (M.Sc., highest honors, *cum laude*) 2002-2009
Wageningen University, the Netherlands
Advisers Major thesis: Naomi Pierce, Frederick Ausubel (Harvard University)
Marcel Dicke (Dept. of Entomology, Wageningen University)
Advisers Minor thesis: Nicole van Dam (Netherlands Institute of Ecology)
Wim van der Putten (Dept. of Nematology, Wageningen University)

SELECTED RESEARCH GRANTS AND AWARDS

- 1. Gordon and Betty Moore Foundation Fellowship (\$180,000)** 2016-2019
Life Sciences Research Foundation
- 2. Visiting Researcher** 2016-2019
University of California at Berkeley
- 3. Honorable Mention** 2017
New Phytologist Tansley Medal
- 4. Visiting Researcher** 2016-2018
International Rice Research Institute
- 5. Research Studentship** 2013
Cambridge Philosophical Society

6. Frank Smart Research Studentship Department of Plant Sciences, University of Cambridge	2011-2012
7. Visiting Researcher Imperial College London	2010-2013
8. Doctoral Training Grant (\$130,000) Biotechnology and Biological Sciences Research Council, UK	2010-2012
9. Visiting Researcher Harvard University, Museum of Comparative Zoology	2008-2012

PEER-REVIEWED PUBLICATIONS * Equal effort

32. **Groen SC**, Whiteman NK. Ecology and evolution of secondary compound detoxification systems in caterpillars. In: Caterpillars in the middle: Tritrophic interactions in a changing world. Eds: Marquis RJ, Koptur S (2022).
31. **Groen SC**, ..., Satija R, Purugganan MD, Henry A. Evolutionary systems biology reveals patterns of rice adaptation to drought-prone agro-ecosystems. Plant Cell doi, 10.1093/plcell/koab275 (2021).
30. **Groen SC**, Whiteman NK. Convergent evolution of cardiac glycoside resistance in predators and parasites of milkweed herbivores. Current Biology 31, R1465-R1466 (2021). Press: **Scientific American**.
29. Tungadi TD*, Watt LG*, **Groen SC***, ..., Powell G, Carr JP. Infection of Arabidopsis by cucumber mosaic virus triggers jasmonate-dependent resistance to aphids that relies partly on the pattern-triggered immunity factor BAK1. Molecular Plant Pathology doi, 10.1111/mpp.13098 (2021).
28. Zaaijer S*, **Groen SC***, Sanjana NE. Tracking cell lineages to improve research reproducibility. Nature Biotechnology 39, 666-670 (2021).
27. Hamann E, Pauli CS, Joly-Lopez Z, **Groen SC**, Kane N, Rest J, Purugganan MD, Franks SJ. Rapid evolutionary changes in gene expression in response to climate fluctuations. Molecular Ecology 30, 193-206 (2021).
26. Roman-Reyna V, ..., **Groen SC**, ..., Oliva R. The rice leaf microbiome is structured by microbial metabolism, and host responses to the environment. Rice 13, 72 (2020).
25. Gutaker RM, **Groen SC**, ..., Fuller DQ, d'Alpoim Guedes J, Lasky JR, Purugganan MD. Genomic history and ecology of the geographic spread of rice. Nature Plants 6, 492-502 (2020).
24. **Groen SC**, Calic I, ..., Satija R, Henry A, Franks SJ, Purugganan MD. The strength and pattern of natural selection on rice gene expression. Nature 578, 572-576 (2020).
23. Joly-Lopez Z, Platts AE, Gulko B, Choi JY, **Groen SC**, Zhong X, Siepel A and Purugganan MD. A fitness consequence map of the rice genome. Nature Plants 6, 119-130 (2020).
22. Choi JY, Lye ZN, **Groen SC**, ..., Purugganan MD. Nanopore-based genome assembly and evolutionary genomics of basmati rice. Genome Biology 21, 21 (2020).
21. Karageorgi M*, **Groen SC***, ..., Dobler S, Agrawal AA, Whiteman NK. Genome editing retraces the evolution of toxin resistance in the monarch butterfly. Nature 574, 409-412 (2019). Press: **BBC, New York Times, Science, Scientific American, Vice**.
20. Zaidem M, **Groen SC**, Purugganan MD. Evolutionary and ecological functional genomics, from lab to the wild. Plant Journal 97, 40-55 (2019).
19. Tungadi TD, **Groen SC**, Murphy AM, Carr JP. Jasmonic acid has a dominant role in Cucumber mosaic virus induced aphid resistance in *Arabidopsis thaliana*. Phytopathology 108, S1.226 (2018).
18. Tungadi TD*, **Groen SC***, ..., Carr JP. The effects of the cucumber mosaic virus 2b protein on emission of host volatile organic compounds and aphid-host interactions in tobacco. Virology Journal 14, 91 (2017).
17. Zaaijer S, ..., **Groen SC**, Erlich Y. Rapid re-identification of human samples using portable DNA sequencing. eLife 6, e27798 (2017).
16. **Groen SC**, Wamonje FO, Murphy AM, Carr JP. Engineering resistance to virus transmission. Current Opinion in Virology 26, 20-27 (2017).
15. **Groen SC**, ..., Whiteman NK. Multidrug transporters and organic anion transporting polypeptides protect insects against the toxic effects of cardenolides. Insect Biochemistry & Molecular Biology 81, 51-61 (2017).

14. **Groen SC**, Purugganan MD. Systems genomics of plant stress adaptation. American Journal of Botany 103, 2019-2021 (2016).
13. Gloss AD, **Groen SC**, Whiteman NK. A genomic perspective on the generation and maintenance of biodiversity in herbivorous insects. Annual Review of Ecology, Evolution & Systematics 47, 165-187 (2016).
12. **Groen SC**. Signalling in systemic plant defence – roots put in hard graft. Journal of Experimental Botany 67, 5585-5587 (2016).
11. **Groen SC***, Jiang S*, Murphy AM*, Cunniffe NJ*, Westwood JH*, ..., Glover BJ, Carr JP. Virus infection of plants alters pollinator preference: A payback for susceptible hosts? PLoS Pathogens 12, e1005790 (2016). Press: **Economist, Guardian, National Geographic, Science, Washington Post**.
10. Humphrey PT, ..., **Groen SC**, ..., Whiteman NK. Aversion and attraction to harmful plant secondary compounds jointly shape the foraging ecology of a specialist herbivore. Ecology & Evolution 6, 3256-3268 (2016).
9. **Groen SC**, Whiteman NK. Using *Drosophila* to study the evolution of herbivory and diet specialization. Current Opinion in Insect Science 14, 66-72 (2016).
8. **Groen SC**, ..., Ausubel FM, Pierce NE, Whiteman NK. *Pseudomonas syringae* enhances herbivory by suppressing the reactive oxygen burst in *Arabidopsis*. Journal of Insect Physiology 84, 90-102 (2016).
7. **Groen SC**, Whiteman NK. The evolution of ethylene signaling in plant-attacker interactions. Journal of Chemical Ecology 40, 700-716 (2014).
6. Westwood JH*, **Groen SC***, ..., Carr JP. A trio of viral proteins tune aphid-plant interactions in *Arabidopsis*. PLoS ONE 8, e83066 (2013).
5. **Groen SC**, Whiteman NK, Bahrami AK, Wilczek AM, ..., Ausubel FM*, Pierce NE*. Pathogen triggered ethylene-signaling mediates systemic induced susceptibility to herbivory in *Arabidopsis*. Plant Cell 25, 4755-4766 (2013).
4. Palukaitis P, **Groen SC**, Carr JP. The Rumsfeld paradox: Some of the things we know we don't know about plant virus infection. Current Opinion in Plant Biology 16, 513-519 (2013).
3. Whiteman NK, ..., **Groen SC**, ..., Ausubel FM, Pierce NE. Genes involved in the evolution of herbivory by a leaf-mining, drosophilid fly. Genome Biology & Evolution 4, 900-916 (2012).
2. Ziebell H*, Murphy AM*, **Groen SC**, ..., Carr JP. Cucumber mosaic virus and its 2b RNA silencing suppressor modify plant-aphid interactions in tobacco. Scientific Reports 1: 187 (2011).
1. Whiteman NK, **Groen SC**, ..., Ausubel FM, Pierce NE. Mining the plant-herbivore interface with a leafmining *Drosophila* of *Arabidopsis*. Molecular Ecology 20, 995-1014 (2011).

PUBLICATIONS IN REVIEW AND/OR ON PREPRINT SERVERS

* Equal effort

- Hamann E*, **Groen SC***, ..., Purugganan MD, Franks SJ. Fitness costs and benefits of gene expression plasticity in rice under drought. New Phytologist (in review), bioRxiv 435597 (2021).
- Calic I*, **Groen SC***, ..., Purugganan MD, Franks SJ. The influence of genetic architecture on responses to selection under drought in rice. Evolutionary Applications (in review)
- Gloss, AD, ..., **Groen SC**, ..., Whiteman NK. Origins of herbivory revealed in *Drosophila* genomes. bioRxiv, 767160 (2019).
- Gloss AD, ..., **Groen SC**, ..., Whiteman NK. Genetic variants affecting plant size and chemical defenses jointly shape herbivory in *Arabidopsis*. bioRxiv, 156299 (2017).

SELECTED ORAL PRESENTATIONS

'Plant toxins and the evolution of host-parasite interactions'

Department of Entomology & Nematology, University of California at Davis, Davis, CA	2022
College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, Honolulu, HI	2021
CMDB/GGB/MCBL Programs, University of California at Riverside, CA	2021

'Evolutionary systems biology of species interactions'

Department of Molecular & Cell Biology, University of California at Berkeley, CA	2020
Department of Nematology, University of California at Riverside, CA	2020

Department of Molecular Biosciences, Northwestern University, Evanston, IL	2020
Rockefeller University, New York, NY	2020
Department of Biology, University of Pennsylvania, Philadelphia, PA	2020
Department of Ecology & Evolution, University of Chicago, Chicago, IL	2019
Department of Plant Sciences, University of Cambridge, UK	2019

‘Systems genetics of stress adaptation in rice’

Botany 2020, Botanical Society of America	2020
The Allied Genetics Conference, Genetics Society of America	2020
Wellcome Trust Plant Genomes in a Changing Environment, Cambridge, UK	2019
Nature Conference, Plants of the Future, New York, NY	2019
Gordon Conference on Plant Water Stress, Waterville Valley, NH	2018
Department of Biology, Pennsylvania State University, State College, PA	2018
Department of Plant Biology, Carnegie Institution for Science, Stanford, CA	2017
Department of Plant Sciences, University of California at Davis, Davis, CA	2017
Workshop on Plant Development and Drought Stress, Asilomar, CA (also session chair)	2017

‘Manipulation of plant-insect interactions by insect-borne plant viruses’

Department of Biology, Fordham University, New York, NY	2017
European Congress of Entomology, York, UK	2014
Gates Foundation Sustainable Crop Research for Int’l Development Workshop, Windsor, UK	2013
American Society of Virology Annual Meeting, Minneapolis, MN	2011

‘Coevolution, convergence and the origins of biodiversity’

Zoological Institute, University of Hamburg, Hamburg, Germany	2015
Wellcome Trust Drosophila Genetics and Genomics Course, Cambridge, UK	2014

PEER REVIEW EXPERIENCE

Journal articles

Biology Letters; BMC Plant Biology; Communications Biology; Frontiers in Genetics; Frontiers in Microbiology; Frontiers in Plant Science; Functional Ecology; G3: Genes, Genomes, Genetics; Journal of Chemical Ecology; Journal of Experimental Botany; Molecular Biology & Evolution; Nature Communications; New Phytologist; Oecologia; Plant Cell; Plant, Cell & Environment; Plant Methods; Plant Physiology; PLoS Biology; PLoS Pathogens; Plant Journal; Proceedings of the National Academy of Sciences of the USA; Proceedings of the Royal Society B; Scientific Reports

Grant proposals

Biotechnology and Biological Sciences Research Council, UK; Natural Environment Research Council, UK

TEACHING AND OUTREACH EXPERIENCE

Graduate Student Research Mentor

Department of Nematology, University of California Riverside	2021- now
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Undergraduate Student Research Mentor

Department of Nematology, University of California Riverside	2021- now
Department of Biology, New York University	2015-2020
Department of Ecology and Evolutionary Biology, University of Arizona	2014-2015
Department of Plant Sciences, University of Cambridge	2010-2013
Department of Organismic and Evolutionary Biology, Harvard University	2009-2012

Teaching Assistant

Plant and Microbial Sciences (2nd year undergraduate course)
University of Cambridge

2010-2013

Volunteer

New York BioBus, World Science Festival

2016-2020

New York BioBus, Loisaída Festival

2016-2019

Summer Undergraduate Research Program, New York University

2019

Arizona Insect Festival

2014-2015

Cambridge Science Festival

2010-2013

REFERENCES

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