Nathalie Stroeymeyt

Nathalie.Stroeymeyt@gmail.com
OrcID 0000-0001-8047-449X
ResearcherID H-2371-2013
https://scholar.google.ch/citations?user=xvCNiKoAAAAJ&hl=en

French; Born 21.03.1984

Education

Jan 2016 **Swiss Epidemiology Winter School**, ISPM, University of Bern
Courses: *Mathematical modelling in infectious disease epidemiology*
Causal inference in observational epidemiology
Teachers: Dr C. Althaus, Dr R. Regös, Prof. M. Hernan, Prof. M. Zwahlen

Nov 2010 **PhD** in Neuroscience, Behaviour and Cognition
University of Bristol, UK, and **University of Toulouse**, France (co-direction)
Thesis title: *Information gathering prior to emigration in house-hunting ants*
Advisors: Prof. Nigel R. Franks and Prof. Martin Giurfa

June 2007 **Master** in Ecology, Biodiversity and Evolution. Ranked 1st in the Master's Program.
Ecole Normale Supérieure, Paris, France

Master 2 project (Feb-June 2007): *Chemoreception and nestmate recognition in ants*
Advisor: Prof. Patrizia d'Ettorre, **University of Copenhagen**, Denmark

Master 1 project (Feb-June 2005): *Selfish worker policing controls reproduction in ants*
Advisor: Prof. Jürgen Heinze, **University of Regensburg**, Germany

July 2006 **'Agrégation'** in Biology, Geology and Astronomy, France. National rank: 2nd
(Advanced teaching degree obtained through a national selective examination)

June 2004 **BSc** in Biology with first-class honours
Ecole Normale Supérieure, Paris, France

July 2003 Entrance examination to the **Superior Agronomic Schools**, France. National rank: 1st
Entrance examination to the **Ecoles Normales Supérieures**, France. National ranks: 3d & 4th

2001-2003 **Classes Préparatoires** aux Grandes Ecoles, section BCPST, Lille, France.
(Intensive high-level education in Biology, Chemistry, Physics, Mathematics and Geology to prepare for selective entrance examinations to French Higher Schools)

Employment history

Since Sep 2019 **Senior Lecturer**
University of Bristol, UK, School of Biological Sciences
Research topic*: Disease transmission dynamics and immune investment in insect societies*

April -Aug 2019 **Assistant Professor**
University of Fribourg, Switzerland, Department of Biology
Research topic*: Disease transmission dynamics and immune investment in insect societies*

Jan-Dec 2018 **Scientific collaborator**
Ecole Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Intelligent Systems
Research topic: *Social networks and complex transmission processes in ants*

Dec 2015-Dec 2017 **Senior Swiss National Science Foundation (SNSF) Researcher**
University of Lausanne, Switzerland, Department of Ecology and Evolution (DEE)
Research topic: *Individual and collective behaviour in social insects*
Advisor: Prof. Laurent Keller

Dec 2010-Nov 2015 **Post-doctoral research assistant**
University of Lausanne, Switzerland, DEE
Research topic: *Collective behaviour and social organisation in social insects*
Advisor: Prof. Laurent Keller

Approved funding

Nov 2018 **SNSF Eccellenza Professorial Fellowship**
Salary + 1 million CHF funding for a five-year research project (University of Fribourg)

July 2018 **ERC Starting Grant (European Research Council)**
1.5 million EUR funding for a five-year research project (University of Fribourg)

2009 **Travel fund** PRES 'Université de Toulouse', France
800 EUR to finance travels between Bristol and Toulouse (co-direction PhD)

2008 **Lavoisier Excellence Grant**, University of Toulouse, France
1'950 EUR to finance travels between Bristol and Toulouse (co-direction PhD)

May 2007 **Allocation Moniteur Normalien**, French Ministry of Higher Education and Research
59'000 EUR personal funding (salary) for a 3-year PhD research project

Teaching experience

Nov 2019 **Social Evolution PhD course, University of Copenhagen, Denmark**
Invited teacher for a course on social networks and transmission processes in insect societies

Jan-Dec 2017 **Science communicator** for the 'Eprouvette' (outreach organ of the University of Lausanne), hosting research initiation activities for children and adults (70 hours in total)

Dec 2010-Dec 2017 **Assistant teacher in Biology, University of Lausanne, Switzerland**
Practicals, Master's thesis grading, oral examinations, invigilation

Sep 2007-Aug 2010 **Assistant teacher ('monitorat') in Biology, University of Toulouse, France**
c. 300h practicals and tutorial for Bachelor students

Sep 2005-June 2006 **Preparation to the Agrégation** in Biology, Geology and Astronomy, France.
Intensive training for teaching in Higher Schools and Universities, involving the preparation of mock lectures in Biology, Geology and Astronomy (>50 hours)

List of courses taught

2008-2010 61 hours practicals in Behavioural Ecology for Bachelor students (years 2 & 3)
Mate choice in guppies; Kinesis and taxis in dipteran larvae

2007-2010 34 hours tutorials and 116 hours practicals in Neuroscience for Bachelor students (year 2)
Tutorials: *Anatomy of the limbic system and hypothalamus*
Practicals: *Emotions in mice; Pain in humans; Electrodermal response in humans*

2007-2011 26 hours practicals in Animal Biology for Bachelor students (year 1)
Fish, frog and mouse anatomy

2007-2010 12 hours tutorials and 48 hours practicals in Plant Biology for Bachelor students (years 1 & 2)
Fungi, algae, mosses, ferns, gymnosperms and angiosperms

2007 4 hours tutorial in Evolution for Bachelor students (year 3)
Phylogeny and Systematics

Scientific Publications (h-index 9; 358 citations)

in revision **Nature Communications**
Richardson TO*, Stroeymeyt N*, Crespi A, Keller L. (*: co-first authors)
A simple movement rule for spatial division of labour in social insects.

2018 **Science** 362(6417): 941-945 (IF 41.06, 23 citation; doi)
Stroeymeyt N, Grasse AV, Crespi A, Mersch DP, Cremer S, Keller L.
Social network plasticity decreases disease transmission in a eusocial insect.
Altmetric score: 605 (**top 0.1%** of all research scored))

2017 **Proceedings of the Royal Society B** 284:20170269 (IF 4.85, 9 citations; doi)
Stroeymeyt N, Joye P, Keller L.
Polydomy enhances foraging performance in ant colonies.

2017 **Plos Computational Biology** 13:e1005527 (IF 3.96, 8 citations; doi)
Richardson TO, Liechti J, Stroeymeyt N, Bonhoeffer S, Keller L.
Short-term activity cycles impede information transmission in ant colonies.

2017 **Scientific Reports** 7:43607 (IF 4.12, 8 citations; doi)
Stroeymeyt N, Giurfa M, Franks NR.
Information certainty determines social or private information use in ants.

2014 **Current Opinion in Insect Science** 5:1-15 (IF 4.17, 59 citations; doi)
Stroeymeyt N, Casillas-Pérez B, Cremer S.
Organisational immunity in social insects.

2014 **Current Opinion in Insect Science** 5:iv-v (IF 4.17; doi)
Stroeymeyt N, Keller L.
Editorial. Social insects: The internal rules of ant societies.

2014 **Proceedings of the Royal Society B** 281:20133108 (IF 4.85, 20 citations; doi)
Stroeymeyt N, Jordan C, Mayer G, Hovsepian S, Giurfa M, Franks NR.
Seasonality in communication and collective decision-making in ants.

2013 **Animal Behaviour** 85(6): 1233-1244 (IF 3.07, 26 citations; doi)
Franks NR, Richardson TO, Stroeymeyt N, Kirby RW, Amos WMD, Hogan PM, Marshall JAR, Schlegel T.
Speed-cohesion trade-offs in collective decision making in ants and the concept of precision in animal behaviour

2011 **Journal of Experimental Biology** 214:3046-3054 (IF 3.18, 58 citations; doi)
Stroeymeyt N, Franks NR, Giurfa M.
Knowledgeable individuals lead collective decisions in ants.

2011 **Behavioral Ecology** 22: 535-542 (IF 3.35, 27 citations; doi)
Stroeymeyt N, Robinson EJH, Hogan P, Marshall JAR, Giurfa M, Franks NR.
Experience-dependent flexibility in collective decision-making by house-hunting ants.

2010 **Plos ONE** 5(9): e13059 (IF 2.77, 44 citations; doi)
Stroeymeyt N, Giurfa M, Franks NR.
Improving decision speed, accuracy and group cohesion through early information gathering in house-hunting ants.

2010 **Plos ONE** 5(8): e12377 (IF 2.77, 31 citations; doi)
Stroeymeyt N, Guerrieri FJ, van Zweden J, d'Ettorre P.
Rapid decision-making with side-specific perceptual discrimination in ants.

2007 **Behavioral Ecology and Sociobiology** 61:1449 (IF 2.47, 45 citations; doi)
Stroeymeyt N, Brunner E, Heinze J.
'Selfish worker policing' controls worker reproduction in a Temnothorax ant.

Supervised students

MSc students – main research project (5-12 months)

Master in Behaviour, Evolution and Conservation, University of Lausanne

Andrea Coti	Master Thesis defended on Jan 30th 2019. Final grade: 5.1/6.0
Patrick Joye	Master Thesis defended on Jan 23d 2015. Final grade: 5.3/6.0 Current status: PhD student in Kawecki group, University of Lausanne, DEE
Bahram Kheradmand	Master Thesis defended on Jan 29th 2014. Final grade: 5.7/6.0 Current status: PhD student in Nieh lab, University of California, San Diego, USA

Master in Ecology, Biodiveristy and Evolution, University Pierre and Marie Curie, Paris, France

Matteo Negroni	Master Thesis defended on June 16th 2015. Passed with Honours Current status: PhD student in Foitzik lab, University of Mainz, Germany

MSc students – first step project (2 months)

Master in Behaviour, Evolution and Conservation, University of Lausanne

2013	Jose Agüera Munagorri and Alexia Comte
2012	Grégoire Pasquier (now PhD student in Leadbeater group, Royal Holloway University, UK) Theodora Steiner (now technician at the University of Lausanne, Switzerland)

BSc students

BSc in Biology, University of Bristol – Honours project

2010	Lydia Baines & Georgina Ireland	**2008**	Luke Sewell & Dilly Wright
2009	Caroline Jordan & Gregory Mayer	**2007**	Thomas Makey & Luke Rees

Membership of scientific societies

since 2010	Member of the Association for the Study of Animal Behaviour (ASAB)
since 2007	Member of the French-speaking section and of the North-West European section of the IUSSI (International Union for the study of Social Insects)
2007-2012	Member of the (Société Française pour l'Etude du Comportement Animal; SFECA) *(French Society for the Study of Animal Behaviour)*

Organisation of conferences and workshops

Aug 2015	XV. ESEB Meeting, Lausanne, Switzerland, 1400 participants Role: Audio-visual management of a conference room and reception duties
2015	7ème Congrès HR Sections Romandes, Lausanne, Switzerland, 200 participants Organisation of a workshop on cooperation and conflict in ants www.congres-romand.ch/?page_id=1446

Edition and Reviewing

2019	Reviewer for Human Frontier Science Program (HSFP) Research Grant Program
since 2018	Member of the *Biology Letter* Editorial Board
since 2007	Reviewer for 18 international peer-reviewed journals, including *Current Biology*, *eLife*, *PLOS Biology* and *Proceedings of the Royal Society B*
March-Sep 2014	Edition of a series of scientific reviews for Current Opinion in Insect Science (Volume 5) together with Laurent Keller

Invited presentations and presentations at international conferences

Invited plenary speaker at international conferences

03.10.2019 CENTURI 2019 Scientific meeting Self-organization in multicellular systems, Cargèse, France
Stroeymeyt. 'Spatial and social organisation in social insects'
Invited by Dr. Marc Bajenoff, Dr. Jérôme Epsztein, Dr. Thomas Lecuit and Dr. Pierre-François Lenne (CNRS researchers, University of Marseille, France)

22.03.2019 Conference of the Central European Section of the IUSSI, IST Austria
Stroeymeyt. 'Social network plasticity decreases disease transmission in ants'
Invited by Prof. Sylvia Cremer (full Professor, IST Austria)

09.12.2015 10th Göttinger Freilandtage, German Primate Centre, Göttingen, Germany
Stroeymeyt, Giurfa, Franks. 'Exploiting prior information in ant collective decision-making'
Invited by Prof. Peter Kappeler (full Professor, German Primate Center, Göttingen, Germany)

Invited lecturer at international courses

11.2019 **PhD Course: Social Evolution**, University of Copenhagen, Denmark
Stroeymeyt. Lecture title: 'Social Organisation in Insect Societies'
Course organised by Dr Nick Bos, Dr Christopher Pull and Prof. Michael Poulsen.

Invited speaker at departmental seminars

03.12.2019 **GHI Internal Floor Seminar**, Global Health Institute, EPFL, Lausanne, Switzerland
Stroeymeyt. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'
Hosted by Prof. Bruno Lemaître (full professor, Head of Department)

14.11.2019 **CNCB seminar**, Centre for Networks and Collective Behaviour, University of Bath, UK
Stroeymeyt. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'
Hosted by Prof. Tim Rogers (full Professor)

07.10.2019 **Bristol Research Seminar**, School of Biological Sciences, University of Bristol, UK
Stroeymeyt. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'
Hosted by Dr Martin How (Royal Society University Research Fellow)

25.06.2019 **External seminar**, Centre de Recherche Apicole, Agroscope, Bern, Switzerland
Stroeymeyt. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'
Hosted by Dr Vincent Dietemann (Senior Research Scientist, Agroscope)

17.06.2019 **Know thy neighbour seminar**, Physiology, University of Lausanne, Switzerland
Stroeymeyt. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'
Hosted by Prof. Christian Widmann (Associate Professor, University of Lausanne)

11.04.2019 **BEEES seminar**, University of Zürich, Switzerland
Stroeymeyt. 'Social network plasticity decreases disease transmission in ants'
Hosted by Prof. Dr. Barbara König (full Professor, University of Zürich)

29.04.2016 **BEEPSS seminar**, Institut Pluridisciplinaire Hubert Curien, Strasbourg, France
Stroeymeyt, Cremer, Keller. 'Social interaction networks as defence against pathogens in ants'
Hosted by Dr. Cédric Sueur (associate Professor, University of Strasbourg)

13.03.2015 **Evolution Lunch Seminar Series**, IST Austria, Austria
Stroeymeyt, Cremer, Keller. 'Age-based division of labour and spreading processes in ants'
Hosted by Prof. Sylvia Cremer (full Professor, IST Austria)

30.10.2014 **External seminar**, Institut de Biologie, University of Neuchâtel, Switzerland
Stroeymeyt, Cremer, Keller. 'Social interactions and disease spread in ants'
Hosted by Prof. Rédouan Bshary (full Professor, University of Neuchâtel)

30.05.2012 **External seminar**, University of Kagawa, Takamatsu, Japan
Stroeymeyt, Giurfa, Franks. 'Prior experience and nest site selection in house-hunting ants'
Hosted by Prof. Fuminori Ito (full Professor, University of Kagawa)

24.03.2011 **External seminar**, Institut für Zoologie, University of Regensburg, Germany
Stroeymeyt, Giurfa, Franks. 'Prior experience and nest site selection in house-hunting ants'
Hosted by Prof. Jürgen Heinze (full Professor, University of Regensburg)

Speaker at international conferences

2018 **XVIII. IUSSI International Congress**, Guarujá, Brazil
Stroeymeyt, Cremer, Keller. 'Social network plasticity decreases disease transmission in the ant *Lasius niger*'

2016 **VI. IUSSI European Meeting**, Helsinki, Finland
Stroeymeyt, Cremer, Keller. 'Organisational immunity in ants'

2013 **XXXIII. International Ethological Conference**, Newcastle, UK
Stroeymeyt, Keller. 'Social homeostasis following fission and fusion in ant colonies'

2012 **V. IUSSI European Meeting**, Montecatini Terme, Italy
Stroeymeyt, Heinze, Keller. 'Colony fusion and reproductive conflicts in *Temnothorax* ants'

2010 **XVI. IUSSI International Congress**, Copenhagen, Denmark
Stroeymeyt, Giurfa, Franks. 'Prior experience and nest site selection in house-hunting ants'

2009 **IUSSI North-West European Annual Meeting**, University of Sussex, UK
Stroeymeyt, Giurfa, Franks. 'Private vs. public information in emigrating ants'

2009 **XXXI. International Ethological Conference**, Rennes, France (**second prize for best talk**)
Stroeymeyt, Giurfa, Franks. 'Memory and reconnaissance in house-hunting ants'

2008 **IUSSI North-West European Annual Meeting**, London, UK
Stroeymeyt, Giurfa, Franks. 'Latent learning and colony performance in emigrating ants'

2008 **IV. IUSSI European Meeting, La Roche-en-Ardenne**, Belgium
Stroeymeyt *et al.* 'Side-specificity in the perception of ant recognition cues'

2008 **IV. Ecology and Behaviour meeting**, Toulouse, France
Stroeymeyt *et al.* 'Physical environment and nestmate recognition in ants'

2006 **XV. IUSSI International Congress**, Washington DC, US
Stroeymeyt, Brünner, Heinze. 'Selfish worker policing controls reproduction in ants'

Posters at international conferences

2014 **XVII. IUSSI International Congress**, Cairns, Australia
Stroeymeyt, Cremer, Keller. 'Interaction networks and pathogen-induced behavioural defences in ants'

2007 **French-speaking IUSSI section meeting**, Toulouse, France (**first prize for best poster**)
Stroeymeyt, Guerrieri, van Zweden, d'Ettorre. 'Physical environment and nestmate recognition in ants'

Outreach

Jan 2019 Interview for a podcast by the Scientific American on behavioural disease defences in ants

Nov 2018 Television interview for RTS Info, a news programme on Swiss RTS television channel

Nov 2018 Radio interview for the programme 'Wissenschaftsmagazin', on Swiss SRF radio channel

Nov 2018 Radio interview for the programme 'CQFD, live on Swiss RTS radio channel

July 2017 Radio interview for the programme 'Chouette', live on Swiss RTS radio channel

2014-2018 Yearly lesson on ants for Animal Keeper students at the University of Lausanne

Aug 2017 Scientific consultant for the temporary exhibition 'Archéonimaux' at the Archéolab, Pully

July 2017	Radio interview for the programme 'Chouette', live on Swiss RTS radio channel
2016-2017	Creation of an interactive activity ('Biologiste in Vivo') and an educational video for the exhibition *Parasites!* at the Zoology museum in Lausanne
Nov 2016	Public conference on ants at the Société Vaudoise des Sciences Naturelles
Sep 2016	Radio interview for the programme CQFD, live on Swiss RTS radio channel
Aug 2016	Conference on ants for the association 'TCS Senior Suisse, Section Vaud'
April 2016	Radio interview as an expert on collective intelligence in animals for the programme CQFD, on Swiss SRF radio channel
2011-2016	Yearly organisation and participation to the University of Lausanne open days (*Les Mystères de l'UNIL)*
2012-2015	Voluntary instructor at Pro Natura Vaud (monthly nature outings for children aged 6 to 12)
Sep 2015	Organisation of a workshop on cooperation and conflict in ants for the 7th Congrès HR Sections Romandes, Lausanne, Switzerland (200 participants)
June 2015	Scientific consultant for a temporary exhibition on ants at the Vivarium, Lausanne
May 2015	Conference on ants and organisation of a laboratory visit for a Rotary group (visit coordinated by Prof. Jacques Lanarès, then vice rector of the University of Lausanne)
Oct 2014	Television interview for the programme Einstein on Swiss television channel SRF
June 2009	Organisation and participation to an activity on ants for the Festival of Nature in Bristol, UK