

Nathalie Stroeymeyt

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ResearcherID H-2371-2013

<https://scholar.google.ch/citations?user=xvCNiKoAAAAJ&hl=en>

French; Born 21.03.1984



Education

- Nov 2010** **PhD** in Neuroscience, Behaviour and Cognition (defended on the 24 November 2010)
Research Centre on Animal Cognition (CRCA), **University of Toulouse**, France
School of Biological Sciences, **University of Bristol**, UK (co-direction)
Advisors: Prof. Nigel R Franks and Prof. Martin Giurfa
- June 2007** **Master** in Ecology, Biodiversity, Evolution (ranked 1st in the Master's Program)
Ecole Normale Supérieure, Paris, France
Research Project at the University of Copenhagen, Denmark, with Prof. Patrizia d'Ettorre
Research project at the University of Regensburg, Germany, with Prof. Jürgen Heinze
- July 2006** **'Agrégation'** in Life Sciences, Earth Sciences and basic Astrophysics, France
(*Advanced teaching degree obtained through a national selective examination; ranked 2nd*)
- June 2004** **BSc** in Biology
Ecole Normale Supérieure, Paris, France (with Honours)
- July 2003** National entrance examination to **Superior Agronomic Schools**, France (ranked 1st)
National entrance examination to **Ecoles Normales Supérieures**, France (ranked 3^d and 4th)

Employment history

- April 2019-** **Assistant Professor**
Department of Biology, **University of Fribourg**
- Jan-Dec** **Scientific collaborator**
2018 Laboratory of Intelligent Systems (LIS), **Ecole Polytechnique Fédérale de Lausanne**, Switzerland
Advisor: Prof. Dario Floreano
- Dec 2015-** **Senior Swiss National Science Foundation (SNSF) Researcher**
Dec 2017 Department of Ecology and Evolution (DEE), **University of Lausanne**, Switzerland
Advisor: Prof. Laurent Keller
- Dec 2010-** **Post-doctoral research assistant**
Nov 2015 DEE, **University of Lausanne**, Switzerland
Advisor: Prof. Laurent Keller

Approved research projects

- Nov 2018** **SNSF Eccellenza Professorial Fellowship**
1 million CHF funding for a five-year research project hosted by the **University of Fribourg**.
- July 2018** **ERC Starting Grant (European Research Council)**
1.5 million EUR funding for a five-year research project hosted by the **University of Fribourg**.
- May 2007** **Allocation Moniteur Normalien**
Approved personal funding for a 3-year PhD research project
Funding body: Ministère de l'Enseignement Supérieur et de la Recherche, France

Scientific Publications (h-index 8; 283 citations)

- in* **Nature Communications**
review 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, [10.1126/science.aat4793](https://doi.org/10.1126/science.aat4793) (IF 37.205)
Stroeymeyt N, Grasse AV, Crespi A, Mersch DP, Cremer S, Keller L.
Social network plasticity decreases disease transmission in a eusocial insect.
- 2017** **Proceedings of the Royal Society B** 284:20170269, [10.1098/rspb.2017.0269](https://doi.org/10.1098/rspb.2017.0269) (IF 4.940, 2 citations)
Stroeymeyt N, Joye P, Keller L.
Polydomy enhances foraging performance in ant colonies.
- 2017** **Plos Computational Biology** 13:e1005527, [10.1371/journal.pcbi.1005527](https://doi.org/10.1371/journal.pcbi.1005527) (IF 4.542, 5 citations)
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, [10.1038/srep43607](https://doi.org/10.1038/srep43607) (IF 4.259, 3 citations)
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 [10.1016/j.cois.2014.09.001](https://doi.org/10.1016/j.cois.2014.09.001) (IF 3.660, 44 citations)
Stroeymeyt N, Casillas-Pérez B, Cremer S.
Organisational immunity in social insects.
- 2014** **Current Opinion in Insect Science** 5:iv-v, [10.1016/j.cois.2014.10.002](https://doi.org/10.1016/j.cois.2014.10.002) (IF 3.660)
Stroeymeyt N, Keller L.
Editorial. Social insects: The internal rules of ant societies.
- 2014** **Proceedings of the Royal Society B** 281:20133108, [10.1098/rspb.2013.3108](https://doi.org/10.1098/rspb.2013.3108) (IF 4.940, 19 citations)
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, [10.1016/j.anbehav.2013.03.010](https://doi.org/10.1016/j.anbehav.2013.03.010) (IF 2.869, 24 citations)
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** **The Journal of Experimental Biology** 214:3046-3054, [10.1242/jeb.059188](https://doi.org/10.1242/jeb.059188) (IF 3.320, 50 citations)
Stroeymeyt N, Franks NR, Giurfa M.
Knowledgeable individuals lead collective decisions in ants.
- 2011** **Behavioral Ecology** 22: 535-542, [10.1093/beheco/arr007](https://doi.org/10.1093/beheco/arr007) (IF 3.311, 23 citations)
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, [10.1371/journal.pone.0013059](https://doi.org/10.1371/journal.pone.0013059) (IF 2.806, 40 citations)
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, [10.1371/journal.pone.0012377](https://doi.org/10.1371/journal.pone.0012377) (IF 2.806, 31 citations)
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** 61:1449-57, [10.1007/s00265-007-0377-3](https://doi.org/10.1007/s00265-007-0377-3) (IF 2.185, 42 citations)
Stroeymeyt N, Brunner E, Heinze J.
'Selfish worker policing' controls worker reproduction in a Temnothorax ant.

Invited presentations and presentations at international conferences

Invited speaker at international conferences

- 2019** Conference of the Central European Section of the IUSSI
Stroeymeyt. ‘Social network plasticity decreases disease transmission in the ant *Lasius niger*’
 Hosted by Prof. Sylvia Cremer (full Professor at IST Austria)
- 2015** 10th Göttinger Freilandtage, German Primate Centre, Göttingen, Germany
Stroeymeyt, Giurfa, Franks. ‘Exploiting prior information in ant collective decision-making’
 Hosted by Prof. Peter Kappeler (full Professor at the German Primate Center, Göttingen, Germany)

Invited speaker at external departmental seminars

- 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 at the University of Strasbourg)
- 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 at IST Austria; collaborator)
- 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 at the University of Neuchâtel)
- 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 at the University of Kagawa)
- 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 at the University of Regensburg; collaborator)

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
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 a *Temnothorax* ant’

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’

Supervision of junior researchers

- Feb 2018-
Jan 2019** Andrea Coti
Master Behaviour, Evolution and Conservation, University of Lausanne
Direct supervision of Master's main research project (1 year)
- Feb-June 2015** Matteo Negroni
Master 2 Ecology, Biodiversity and Evolution, University Pierre and Marie Curie, Paris, France
Direct supervision of Master's main research project (5 months) at the University of Lausanne
Passed with Honours
- Feb 2014-
Jan 2015** Patrick Joye
Master Behaviour, Evolution and Conservation, University of Lausanne
Direct supervision of Master's main research project (1 year)
Final grade: 5.3/6.0
- Feb 2013-
Jan 2014** Bahram Kheradmand
Master Behaviour, Evolution and Conservation, University of Lausanne
Direct supervision of Master's main research project (1 year)
Final grade: 5.7/6.0
- 2012-2013** Jose Agüera Munagorri, Alexia Comte, Grégoire Pasquier, Theodora Steiner
Master Behaviour, Evolution and Conservation, University of Lausanne
Direct supervision of Master's first-step projects (2 months)

Teaching

- Dec 2010-
Dec 2017** Assistant teacher, DEE, University of Lausanne, Switzerland
Practical classes, Master's thesis grading, oral examinations, invigilation (Biology)
- Sep 2007-
Aug 2010** Assistant teacher ('monitorat'), University of Toulouse, France
300h teaching in Biology at Bachelor and Master Levels

Edition and Reviewing

- March 2018-
since 2007** Member of the *Biology Letter* Editorial Board
Reviewer for 16 international peer-reviewed journals, including *Biology Letters*, *Proceedings of the Royal Society B* and *PLOS Biology*
- March-Sep
2014** Edition of a series of scientific reviews for [Current Opinion in Insect Science \(Volume 5\)](#) together with Laurent Keller

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** 7^{ème} 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

Awards and Prizes

- 2009** Travel fund PRES 'Université de Toulouse', CRCA, University of Toulouse, France
- 2008** Lavoisier Excellence Grant, CRCA, University of Toulouse, France
- 2009** Second prize for best talk, XXXI. International Ethological Conference, Rennes, France
- 2007** First prize for best poster, French-speaking IUSI section meeting, Toulouse, France

Major collaborations

- since 2016** Prof. Selman Sakar, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland
Collaboration on the design of a robotic ant for controlled transmission experiments
- since 2013** Prof. Sylvia Cremer, IST Austria, Vienna, Austria
Collaboration on social immunity in ants
- 2013-2014** Prof. Iain Couzin, Princeton University, USA
Collaboration on the automated measurement of short-term activity cycles in ant colonies
- 2011-2013** Prof. Jürgen Heinze, University of Regensburg, Germany
Collaboration on the effects of colony take-over on social organisation and network structure

Outreach

- Nov 2018** Television interview for RTS Info, a news programme on Swiss RTS television channel
<http://avidexperts.ch/videos/view/9146>
- Nov 2018** Radio interview for the programme 'Wissenschaftsmagazin', on Swiss SRF radio channel
<https://www.srf.ch/sendungen/wissenschaftsmagazin/tiere-verhindern-epidemie>
- Nov 2018** Radio interview for the programme 'CQFD, live on Swiss RTS radio channel
https://rtsww-a-d.rts.ch/la-1ere/programmes/cqfd/2018/cqfd_20181123_standard_sequence-1_463d2260-e396-4cfb-ace6-36895d4914ed-128k.mp3?mediaId=9981889
- July 2017** Radio interview for the programme 'Chouette', live on Swiss RTS radio channel
www.rts.ch/play/radio/chouette-/audio/les-fourmis-lont-deja-invente-avec-nathalie-stroeymeyt-biologiste-et-specialiste-des-fourmis?id=8738705
- 2014-2018** Yearly lesson on ants for Animal Keeper students at the University of Lausanne
- Jan-Dec 2017** Science communicator for the 'Eprouvette' (outreach organ of the University of Lausanne), hosting research initiation activities for children and adults (35 activities in total)
- Aug 2017** Scientific consultant for a temporary exhibition at the Archéolab, Lausanne
- July 2017** Radio interview for the programme 'Chouette', live on Swiss RTS radio channel
www.rts.ch/play/radio/chouette-/audio/les-fourmis-lont-deja-invente-avec-nathalie-stroeymeyt-biologiste-et-specialiste-des-fourmis?id=8738705
- 2016-2017** Creation of an interactive activity ('Biologiste in Vivo') and an educational video for the exhibition *Parasites!* at the Zoology museum in Lausanne
<https://www.tempslibre.ch/vaud/manifestations/379399-biologiste-in-vivo/206599>
<https://www.youtube.com/watch?v=Y1wfsWXRKqA>
- Nov 2016** Public conference on ants at the Société Vaudoise des Sciences Naturelles
wp.unil.ch/svsn/2016/09/cycle-conferences-2016/#ancre4
- Sep 2016** Radio interview for the programme CQFD, live on Swiss RTS radio channel
www.rts.ch/play/radio/cqfd/audio/rencontre-avec-nathalie-stroeymeyt?id=8020658
- 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 RTS
www.rts.ch/play/radio/cqfd/audio/a-la-recherche-de-lintelligence-animale?id=7621488
- 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); www.congres-romand.ch/?page_id=1446
- 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
www.srf.ch/sendungen/einstein/bio-waffe-gegen-ambrosia-ameisenforschung-liebeskummer
- June 2009** Organisation and participation to an activity on ants for the Festival of Nature in Bristol (UK)