

CURRICULUM VITAE

Personal Data

Name Sylvia Cremer
Title Dr. habil. (rer. nat.)
Birth date April 24, 1973, Nürnberg, Germany
Gender Female
Nationality German
Marital Status married, 2 daughters

Current Position (since 2010)

Position **Assistant Professor**
Address IST Austria
 (Institute of Science and Technology Austria)
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Previous Assignments

2006-2010 Group Leader / Habilitation Position
 University of Regensburg
 2006 Junior Fellow at the Wissenschaftskolleg zu Berlin, Germany
 (Institute of Advanced Studies) as member of the
 Focus group: Evolutionary Immunology
 2002-2006 Postdoc at the University of Copenhagen, Denmark
 Department of Population Biology (head: Prof. Dr. J.J. Boomsma)

Habilitation

2006-2010 Habilitation > Privatdozent
 "Social immunity in tramp ants"
 University of Regensburg, Germany

Dissertation

1998-2002 Dissertation (Dr. rer. nat.) in Biology (=PhD)
 "Alternative reproductive tactics in males of the ant *Cardiocondyla*"
 Supervisor: Prof. Dr. J. Heinze (Regensburg, previously Erlangen)
 Grade: passed with distinction ("summa cum laude")

University Studies and Diploma

1992-1998 Studies with Diploma in Biology (=MSc)
 Friedrich-Alexander-University of Erlangen-Nürnberg
 "Hybridisation of two *Chorthippus* grasshoppers: genetic structure and
 female choice experiments"
 Supervisor: Prof. Dr. O. v. Helversen
 Grade: 1.0 (excellent)

Research Honours and Academic Activities

Awards

2011	Academy Member	Elected Member of the Junge Kurie (of the Austrian Academy of Sciences, ÖAW)
2008	Academy Member	Elected Member of the Junge Akademie (of the National German Academy of Sciences Leopoldina and the Berlin-Brandenburg Academy BBAW)
2006	Research Fellowship	Junior Fellow at the Institute for Advanced Study (Wissenschaftskolleg), Berlin, Germany Focus group "Evolutionary Immunology"
2000	MSc Thesis	study award of <i>vdbiol</i> (Verband deutscher Biologen)
1992	High School	(Abitur: Grade 1.1) Bavarian ministry of education and cultural affairs

Research Grants & Fellowships

2010-2015	ERC Starting Independent Researcher Grant, Ideas Actions, by the European Commission 1,3 Mio € for personel, consumables, equipment
2009-2012	Research Grant by the DFG (German Science Foundation) within the Priority Programme (SPP) "Host-parasite coevolution" personel: PhD position (3 years), 65,000€ equipment & consumables
2009-2011	DAAD Procope programme Germany-France laboratory exchange between Regensburg and Paris (Dr. C. Doums) travel costs : 9,500€
2009-2011	Joint PhD position (3 years) with Dr. C. Doums, Paris (Diversité du vivant)
2007-2010	Research Grant by the DFG (German Science Foundation) personel: PhD position (3 years); 20,000€ consumables
2006-2007	Marie Curie Reintegration Grant (ERG) by the European Commission 40,000€ for personnel, equipment, consumables
2004-2006	Marie Curie Intra-European Individual Fellowship (EIF) by the European Commission own postdoc salary; 18,000€ consumables
2003-2004	Feodor-Lynen postdoctoral Fellowship by the Alexander-von-Humboldt Foundation own postdoc salary

Smaller Grants (<5,000€)

2008 & 2009	University of Regensburg: Bonus for Third-Party-Funding Raising
2006 & 2008	University of Regensburg: Support for Women in Science
2006	Research Grant by the German Ethological Society
1999	Smith-Kline Beecham Foundation: conference attendance XIII International Congress of the IUSSI, Adelaide, Australia
1999	Boehringer Ingelheim Fund: lab visit to establish AFLP markers Dr. L. Beukeboom, University of Leiden, Leiden, the Netherlands

Organisation of Workshops, Symposia and Conferences

2011	winterschool	"Host-parasite coevolution", winter-school of the DFG Priority Programme SPP 1399, IST Austria, Klosterneuburg, Austria 02 / 2011
2010	symposium	"Parasites and immunity in social insects", International Union for the Study of Social Insects Congress, Copenhagen, Denmark 10 / 2008
2009	conference	German Zoological Society (DZG) Meeting, University of Regensburg, Germany
2008	conference	"Social behaviour" Meeting of the Ethological Society, University of Regensburg, Germany
2007	workshop	"Social immunity", 7 th Regensburg Symposium University of Regensburg, Germany
2006	symposium	"The immune system of social insects" International Union for the Study of Social Insects Congress, Washington, USA, 08 / 2006
2004	conference	Closing Symposium of the EU Research Training network "INSECTS", Helsingor, Denmark
2004	workshop	Grant-writing workshop of the EU Research Training Network "INSECTS", Tvärminne, Finland
2001	conference	7 th Meeting of PhD Students in Evolutionary Biology, Bernried, Germany

Meetings & Seminar Invitations

Talks at 16 international conferences and 11 invited institute seminars, and participation in 14 workshops during the last 5 years.

Invited talks at International Meetings

2010	Gordon Research Conference <i>Immunochemistry & Immunobiology</i> (Les Diablerets, Switzerland)
2009	Conference of the German Zoological Society (DZG), Regensburg, Germany
2009	CNRS Jacques Monod Conference <i>Insect immunity in action</i> , Aussois, France
2008	Workshop on <i>Darwinian Medicine</i> , Berlin, Germany
2007	Network Meeting of the Alexander von Humboldt-Foundation, Giessen, Germany
2006	International Conference of the International Union for the Study of Social Insects (IUSSI), Washington DC, USA

Teaching (1997-2012)

Basic / Bachelor level

Practicals	Animal Physiology, Morphology and Evolution of Molluscs, Anatomy and Cytology of Invertebrates and Vertebrates, Morphological Identification of Invertebrates, Population Genetics, Molecular Ecology, Insect Immunity
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Advanced / Masters level

Practicals	Evolution of Social Insects, Insect Population Ecology, Population Genetics, Sexual Selection
Seminars	Social Behaviour and Communication, Disease and Immunity in Social Insects, Grant Writing, Scientific Presentation and Conduct

I am teacher in both the Graduate School of the University of Regensburg and the IST Austria.

Student Supervision

2011	MSc thesis	Pathogen infection of <i>Lasius</i> ants (M. Klatt)
2010-	PhD thesis	Experimental evolution of ant pathogens (M. Stock)
2010	Diploma thesis	Immunity in the male diphenic ant <i>Cardiocondyla obscurior</i> (U. Wandinger)
2009-	PhD thesis	Social immune priming in <i>Lasius</i> ants (M. Konrad)
2009-	PhD thesis	Division of labour in social immunity (C. Westhus, joint supervision with Dr. C. Doums, Paris)
2009	Diploma thesis	Plasticity of immune defence in <i>Cardiocondyla</i> ants (M. Stock)
2009	Diploma thesis	Genetic analysis of fungal infection in <i>Lasius</i> ants (V. Drescher)
2007-	PhD thesis	Social immunity in ant societies (S. Tragust)
2004/5	MSc thesis	Social structure of invasive and non-invasive garden ants (L.V. Ugelvig)
2000-2011	practicals	regular supervision of several undergraduate and graduate student practicals per year (duration several weeks to several months) on current research topics in the group

Referee Activity (Journals)

American Naturalist, Animal Behaviour, Australian Journal of Zoology, Behavioural Ecology, Behavioral Ecology and Sociobiology, Biology Letters, Current Biology, Ecological Research, Environmental Entomology, Ethology, European Journal of Entomology, Evolution, Experimental Gerontology, Frontiers in Zoology, Insectes Sociaux, Journal of Evolutionary Biology, Journal of Insect Physiology, Molecular Ecology, Myrmecological News, Naturwissenschaften, Oecologia, Philosophical Transactions of the Royal Society Series B, PLoS Biology, PLoS One, PLoS Pathogens, Proceedings of the National Academy of Sciences PNAS

Referee Activity (Funding)

Research Grants of the University of Leuven, Belgium
Swiss National Science Foundation (SNSF)

Expert Activity

Associate Editor, Behavioural Ecology and Sociobiology

Contact for the invasive garden ant, *Lasius neglectus*, on the following web sites:

ISSG: Global invasive species database (www.issg.org/database/welcome/)

DAISIE: Delivering Alien Invasive Inventories for Europe (www.europe-aliens.org/)

Memberships (regular)

Deutscher Hochschulverband, European Society for Evolutionary Biology ESEB, International Union for the Study of Social Insects IUSSI, German Zoological Society DZG, German Ethological Society, Marie Curie Fellows Association (MCFA)

Vienna, 4. April 2012 (Sylvia Cremer)

Publications in Peer Reviewed Journals

Invited Reviews

Cremer, S.*¹ & Sixt, M. (2009) Analogies in the evolution of individual and social immunity.
Philosophical Transactions of the Royal Society London B 364: 129-142

Cremer, S.*, Armitage, S.A.O. & Schmid-Hempel, P. (2007) Social Immunity.
Current Biology 17, R693-R702

Research Papers

Konrad, M., Theis, F.J., Vyleta, M.L., Tragust, S., Stock, M., Klatt, M., Drescher, V., Marr, C., Ugelvig, L.V. & Cremer, S.* (2012) Social Transfer of Pathogenic Fungus Promotes Active Immunisation in Ant Colonies. *PLoS Biology* 10 (4): e1001300

Schrempf, A.[#], Cremer, S.[#] & Heinze, J. (2011) Social influence on age and reproduction: reduced lifespan and fecundity in multi-queen ant colonies.
Journal of Evolutionary Biology 24 (7): 1455-1461

[#] the first two authors contributed equally to the work

Cremer, S.*, Schrempf, A. & Heinze, J. (2011) Competition and opportunity shape the reproductive tactics of males in the ant *Cardiocondyla obscurior*.
PLoS One 6 (3) e17323

Ugelvig, L.V., Kronauer, D.J.C., Schrempf A., Heinze, J. & Cremer, S.* (2010) Rapid anti-pathogen response in ant societies relies on high genetic diversity.
Proceedings of the Royal Society B: Biological Sciences, 277: 2821-2828

Cremer, S.*, Ugelvig, L.V., Drijfhout, F.P., Schlick-Steiner, B.C., Steiner, F.M., Seifert, B., Hughes, D.P., Schulz, A., Petersen, K.S., Konrad, H., Stauffer, C., Kiran, K., Espadaler, X., D'Ettorre, P., Aktaç, N., Eilenberg, J., Jones, G.R., Nash, D.R., Pedersen, J.S & Boomsma, J.J. (2008) The evolution of invasiveness in garden ants.
PLoS One <http://dx.plos.org/10.1371/journal.pone.0003838> (3. December 2008)
- *PLoS One Rating: 4/5 points*

Suefuji, M., Cremer, S., Oettler, J. & Heinze, J. (2008) Queen number influences the timing of the sexual production in colonies of *Cardiocondyla* ants.
Biology Letters 4: 670-673

Cremer, S.*, D'Ettorre, P., Drijfhout, F.P., Sledge, M.F., Turillazzi, S. & Heinze, J. (2008) Imperfect chemical female mimicry in males of the ant *Cardiocondyla obscurior*,
Naturwissenschaften 95: 1101-1105

Ugelvig, L.V., Drijfhout, F.P., Kronauer, D.J.C., Boomsma, J.J., Pedersen, J.S. & Cremer, S.* (2008) The introduction history of invasive garden ants in Europe: integrating genetic, chemical and behavioural approaches.
BMC Biology 6 (11), doi:10.1186/1741-7007-6-11

Ugelvig, L.V. & Cremer, S.* (2007) Social prophylaxis: group interaction promotes collective immunity in ant colonies.
Current Biology 17, 1967-1971
- *Science Editors' Choice: Prosocial Ants (2007) Science 318, 1697*

Hughes, D.P & Cremer, S. (2007) Plasticity in anti-parasite behaviours and its suggested role in invasion biology.
Animal Behaviour 74, 1593-1599

¹ * demarks corresponding author activity

- Moder, K., Schlick-Steiner, B.C., Steiner, F.M, **Cremer, S.**, Christian, E. & Seifert, B. (2007) Optimal species distinction by discriminant analysis: comparing established methods of character selection with a combination procedure using ant morphometrics as a case study.
***Journal of Zoological Systematics and Evolutionary Research* 45(1), 82-87**
- Cremer, S.***, Ugelvig, L.V., Lommen, S.T.E., Petersen, K.S. & Pedersen, J.S. (2006) Attack of the invasive garden ant: aggression behaviour of *Lasius neglectus* (Hymenoptera: Formicidae) against native *Lasius* species in Spain,
***Myrmecological News* 9, 9-13**
- Ustinova, J., Achman, R., **Cremer, S.** & Mayer, F. (2006) Long repeats in a huge genome: Microsatellite loci in the grasshopper *Chorthippus biguttulus*.
***Journal of Molecular Evolution* 62(2), 158-67**
- Heinze, J., **Cremer, S.**, Eckl, N. & Schrempf, A. (2006) Stealthy invaders: the biology of *Cardiocondyla* tramp ants.
***Insectes sociaux* 53, 1-7**
- Schrempf, A., Heinze, J. & **Cremer, S.*** (2005) Sexual cooperation: mating increases longevity in ant queens.
***Current Biology* 15, 267-270**
- Faculty of 1000 Factor 4.8 = Must Read
- de Menten, L., **Cremer, S.**, Heinze, J. & Aron, S. (2005) Primary sex ratio adjustment by ant queens in response to local mate competition.
***Animal Behaviour* 69, 1031-1035**
- Heinze, J., Böttcher, A. & **Cremer, S.** (2004) Production of winged and wingless males in the ant, *Cardiocondyla minutior*.
***Insectes Sociaux* 51 (3), 275-278**
- Cremer, S.*** & Heinze, J. (2003) Stress grows wings: environmental induction of winged dispersal males in *Cardiocondyla* ants.
***Current Biology* 13, 219-223**
- Anderson, C., **Cremer, S.** & Heinze, J. (2003) Live and let die: why fighter males of the ant *Cardiocondyla* kill each other but tolerate their winged rivals.
***Behavioral Ecology* 14 (1), 54-62**
- Cremer, S.***, Sledge, M.F. & Heinze, J. (2002) Male ants disguised by the queen's bouquet.
***Nature* 419, 897**
- Cremer, S.***, Lautenschläger, B. & Heinze, J. (2002) A transitional stage between the ergatoid and the winged male morph in *Cardiocondyla obscurior*.
***Insectes Sociaux* 49, 221-228**
- Cremer, S.*** & Heinze, J. (2002) Adaptive production of fighter males: ant queens adjust the sex ratio under local mate competition.
***Proceedings of the Royal Society of London Series B* 269, 417-422**
- Turillazzi, S., Sledge, M.F., **Cremer, S.** & Heinze (2002) A method for analysing small-sized specimens in GC-MS.
***Journal of Insect Social Life* 4, 169-175**
- Cremer, S.** & Greenfield, M.D. (1998) Partitioning the components of sexual selection: attractiveness and agonistic behaviour in male wax moths, *Achroia grisella* (Lepidoptera: Pyralidae).
***Ethology* 104, 1-9**

Research Dissemination

Cremer, S.* & Boomsma, J.J. (2005) The drawback of mobility: invasive species in a globalised world.

Proceedings of the Marie Curie Conference Pisa Sept. 2005

Cremer, S.* & Heinze, J. (2003) Zwischen Hochzeitsflug und Brudermord: reproduktive Taktiken bei Ameisenmännchen.

Blick in die Wissenschaft Heft 15, 12. Jahrgang, 32-36

Cremer, S.* (2000) Paternity analysis with AFLPs in *Cardiocondyla* ants.

BIF Futura 15 (1), 68 -71