

## CURRICULUM VITAE

### SYLVIA CREMER

#### Current Position (since 2015)

<b>Position</b>	<b>Full Professor</b>
<b>Address</b>	IST Austria (Institute of Science and Technology Austria) Am Campus 1 A-3400 Klosterneuburg
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#### Previous Assignments

2010-2015	Assistant Professor IST Austria, Austria
2006-2010	Group Leader / Habilitation Position University of Regensburg, Germany
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)

#### Academic Education

2006-2010	Habilitation > Privatdozent "Social immunity in tramp ants" University of Regensburg, Germany
1998-2002	Dissertation (Dr. rer. nat.) in Biology (=PhD) "Alternative reproductive tactics in males of the ant <i>Cardiocondyla</i> " University of Regensburg, Germany Supervisor: Prof. Dr. J. Heinze Grade: passed with distinction ("summa cum laude")

#### Research Honours and Academic Activities

##### Awards

2013	<b>Research Award</b>	Walther Arndt Prize of the German Zoological Society (Deutsche Zoologische Gesellschaft, DZG)
2012	<b>Research Award</b>	Science Award of the state of Lower Austria (Anerkennungspreis des Landes Niederösterreich)
2011	<b>Academy Member</b>	Elected Member of the Junge Kurie (of the Austrian Academy of Sciences, ÖAW)
2008	<b>Academy Member</b>	Elected Member of the Junge Akademie (of the National German Academy of Sciences Leopoldina and the Berlin-Brandenburg Academy BBAW); Alumni since 2013
2006	<b>Research Fellowship</b>	Junior Fellow at the Institute for Advanced Study (Wissenschaftskolleg), Berlin, Germany Focus group "Evolutionary Immunology"

**Selected Invited talks at International Meetings** (past 5 years)

- 2014 **Koshland Memorial Symposium**, University of Chicago, USA  
*The ART Avoidance–Resistance–Tolerance of pathogen handling*
- 2014 17<sup>th</sup> **International Congress of the IUSSI** (International Union for the Study of Social Insects), Cairns, Australia  
*Symposium Phenotypic phenomena and molecular basis of social insect immunity*
- 2013 106<sup>th</sup> **Annual Meeting of the German Zoological Society (DZG)**, Munich, Germany  
**Award Talk for the Walther Arndt Prize**
- 2013 **ESF-EMBO Research Conference Integrated Insect Immunology**, Pultusk, Poland
- 2013 **IX Göttinger Freilandtage: The Sociality-Health-Fitness Link**, Göttingen, Germany
- 2012 **Conference The Evolution of Disgust: from Oral to Moral**, ZIF Centre for Interdisciplinary Research, Bielefeld, Germany
- 2012 **EUROIUSI 2012: 5<sup>th</sup> European Congress of the IUSSI** (International Union for the Study of Social Insects), Tuscany, Italy  
**Plenary Talk**
- 2010 **Gordon Research Conference Immunochemistry & Immunobiology**, Les Diablerets, Switzerland

**Selected Invited Institute Seminars** (past 3 years)

- 2015 **University of Veterinary Medicine Vienna, Austria**  
host: Claudia Bieber
- 2014 **University of Lausanne, Switzerland**  
host: Laurent Keller
- 2014 **University of Basel, Switzerland**  
host: Dieter Ebert
- 2014 **University of Mainz, Germany**  
hosts: Joel Meunier & Susanne Foitzik
- 2013 **University of Vienna, Austria**  
*COSB Colloquium (Center of Organismal Systems Biology)*  
host: Andreas Wanninger
- 2013 **Max Planck Institute for Chemical Ecology, Jena, Germany**  
host: Martin Kaltenpoth

## Publications in Peer Reviewed Journals

**ISI Researcher ID:** B-2199-2013

**ORCID:** [orcid.org/0000-0002-2193-3868](http://orcid.org/0000-0002-2193-3868)

**Google Scholar Profile:** [Sylvia Cremer](#)

### INVITED REVIEWS

Kappeler, P.M., **Cremer, S.** & Nunn, C.L. (2015) Sociality and health: impacts of sociality on disease susceptibility and transmission in animal and human societies.

***Philosophical Transactions of the Royal Society B: Biological Sciences***, Theme issue: *Sociality, Health and Fitness Nexus*, 370: 20140116

Stroeymeyt, N., Casillas-Pérez, B. & **Cremer, S.\*** (2014): Organisational immunity in social insects. ***Current Opinion in Insect Science*** 5: 1-15

Masri, L. & **Cremer, S.\*** (2014) Individual and social immunisation in insects.

***Trends in Immunology***, Special Issue: *The ART (Avoidance, Resistance and Tolerance) of pathogen handling* 35(10): 471-482

Ugelvig, L.V. & **Cremer, S.** (2012) Effects of social immunity and unicoloniality on host-parasite interactions in invasive insect societies. ***Functional Ecology***, Special Issue: *Invasions and Infections*, 26: 1300-1312

**Cremer, S.\*<sup>1</sup>** & Sixt, M. (2009) Analogies in the evolution of individual and social immunity.

***Philosophical Transactions of the Royal Society London B: Biological Sciences*** 364: 129-142

**Cremer, S.\***, Armitage, S.A.O. & Schmid-Hempel, P. (2007) Social Immunity. ***Current Biology***, Special Issue: *Biology of Societies*, 17: R693-R702

### RESEARCH PAPERS

Theis, F.J., Ugelvig, L.V., Marr, C. & **Cremer, S.\*** (2015) Opposing effects of allogrooming on disease transmission in ant societies. ***Philosophical Transactions of the Royal Society B: Biological Sciences***, Theme issue: *Sociality, Health and Fitness Nexus*, 370:20140108

Novak, S. & **Cremer, S.** (2015) Fungal disease dynamics in insect societies: optimal killing rates and the ambivalent effect of high social interaction rates. ***Journal of Theoretical Biology*** 372: 54-56

Konrad, M., Grasse, A.V., Tragust, S. & **Cremer, S.\*** (2015) Anti-pathogen protection versus survival costs mediated by an ectosymbiont in an ant host. ***Proceedings of the Royal Society B: Biological Sciences*** 282: 20141976

Westhus, C., Ugelvig, L.V., Tourdot, E., Heinze, J., Doums, C. & **Cremer, S.\*** (2014) Increased grooming after repeated brood care provides sanitary benefits in a clonal ant. ***Behavioral Ecology and Sociobiology*** 68: 1701-1710

Tragust, S., Mitteregger, B., Barone, V., Konrad, M., Ugelvig, L.V. & **Cremer, S.\*** (2013) Ants disinfect fungus-exposed brood by oral uptake and spread of their poison. ***Current Biology*** 23(1): 76-82

Tragust, S., Ugelvig, L.V., Chapuisat, M., Heinze, J. & **Cremer, S.\*** (2013) Pupal cocoons affect sanitary brood care and limit fungal infections in ant colonies. ***BMC Evolutionary Biology*** 13: 225

Konrad, M., Vyleta, M.L., Theis, F.J., Stock, M., Tragust, S., 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

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<sup>1</sup> \*) corresponding authorship

- Cremer, S.\***, Suefuji, M., Schrempf, A., Heinze, J. (2012) The dynamics of male-male competition in *Cardiocondyla obscurior* ants. **BMC Ecology** 12:7, doi:10.1186/1472-6785-12-7
- Schrempf, A.<sup>#</sup>, **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  
<sup>#</sup> *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'Etorre, 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** 3 (12) e3838
- 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
- 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
- Cremer, S.\***, D'Etorre, 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. & **Cremer, S.\*** (2007) Social prophylaxis: group interaction promotes collective immunity in ant colonies. **Current Biology** 17, 1967-1971
- Hughes, D.P & **Cremer, S.** (2007) Plasticity in anti-parasite behaviours and its suggested role in invasion biology. **Animal Behaviour** 74, 1593-1599
- 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
- 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