

JAN BUELLESBACH

SUMMARY

- 8+ years of research experience in Evolutionary Biology, Chemical Ecology, Molecular Biology and Bioinformatics
- 6+ years of mentoring/teaching experience
- 2+ years of scientific management and integrative research networking experience
- Areas of expertise: Analytical chemistry, quantitative + reverse genetics, computational biology, entomology, insect pheromones, cuticular hydrocarbons, behavioral isolation, speciation, phylogeny, chemical taxonomy

EDUCATION

- 2007 - 2010: **PhD** in Evolutionary Biology and Chemical Ecology at the University of Freiburg, Germany and at the Arizona State University, Tempe, USA
- 2006 - 2007: **Postgraduate studies / Master equivalent** in Bioinformatics at the University of Cologne, Germany
- 2003 - 2006: **Graduate studies** in Biology at the University of Muenster
- 2003: **Semester abroad** at the University of Pennsylvania, Philadelphia, USA
- 2000 - 2002: **Undergraduate studies** in Biology at the University of Muenster, Germany

WORK EXPERIENCE

- Since 2016: **Postdoctoral scholar** at the Department of Environmental Science, Policy & Management University of California, Berkeley, USA
- 2013-2016: **Scientific manager** of the Excellence Graduate School Jena School for Microbial Communication, Jena, Germany
- 2012 - 2013: **Scientific consultant and project manager** at Aldebaran, Hamburg, Germany and Overtaal, Utrecht, The Netherlands
- 2011 - 2012: **Postdoctoral research scholar** at the Department of Entomology, North Carolina State University, USA
- 2007 - 2010: **Research associate** at the Department of Evolutionary Biology and Animal Ecology, University of Freiburg, Germany and at the School of Life Sciences, Arizona State University, Tempe, USA
- 2003: **Research assistant** at the Department of Pharmacology, University of Pennsylvania, USA

AWARDS/SCHOLARSHIPS

- 2007 - 2010: **PhD Scholarship** from the Spemann Graduate School for Biology and Medicine (SGBM), provided by the Excellence Initiative of the German Research Foundation (DFG)
- 2006 - 2007: **Student scholarship** from the Federal Ministry of Education and Research (BMBF) for Postgraduate studies in bioinformatics at the University of Cologne
- 2003: **Semester scholarship** from the German Academic Exchange Service (DAAD) for a semester abroad at the University of Pennsylvania, Philadelphia, USA

RESEARCH SKILLS

- Applied biology:** Conception, design + conduction of behavioral + olfactometer assays, chemical quantification assays, confocal + laser-scanning microscopy, cytological apoptosis assays, FACS, neuro-anatomical functional analysis
- Molecular biology:** DNA + RNA sequencing, LI-COR electrophoresis, QTL mapping, molecular cloning, cell transformation, 2D SDS PAGE, Southern and Western Blots, RT-PCR, RNAi, microarrays
- Data analysis:** Integration of chemical, genetic and behavioral data sets (Meta studies), multivariate statistics, linear discriminant analysis, principal component analysis, agglomerative clustering (UPGMA), General Linear Models, Binary Logistic Models
- Analytical Chemistry:** GC-MS, GC-FID, GC-EAD, MALDI-Tof

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PUBLICATIONS

- Buellesbach J.**, Watt J.R., Shuker D.M. (2016). *Nasonia* Wasp Behavior Genetics. Reference Module in Life Sciences. Elsevier
- Buellesbach J.**, Schmitt T. (2015) "The Role of Cuticular Hydrocarbon-based Chemical Communication in Prezygotic Reproductive Isolation" in "Animal Communication and Cognition: Principles, Evolution and Development", Nova Science Publishers, Hauppauge NY, USA
- Buellesbach J.**, Greim C., Schmitt T. (2014) "Asymmetric interspecific mating behavior reflects incomplete prezygotic isolation in the jewel wasp *Nasonia*", *Ethology* 120 (8):834-843
- Buellesbach J.**, Gadau J., Beukeboom L.W., Eching F., Raychoudhury R., Werren J.H., Schmitt T. (2013) "Cuticular hydrocarbon divergence in males and females of the jewel wasp genus *Nasonia*: Evolutionary shifts in chemical communication?", *Journal of Evolutionary Biology* 26(11):2467-2478
- Giesbers M., Gerritsma S., **Buellesbach J.**, Diao W., Pannebakker B.A., van de Zande L., Schmitt T., Beukeboom L.W. "Prezygotic Isolation in the Parasitoid Wasp Genus *Nasonia*" in "Speciation: Natural Processes, Genetics and Biodiversity" (2013), Pawel M, Virginia Tech, Blacksburg, VA, USA / Nova Science Publishers, Hauppauge NY, USA
- *Niehuis O., ***Buellesbach J.**, *Gibson J.D., Pothman D., Hanner C., Mutti N., Judson A.K., Liebig J., Gadau J., *Ruther J., Schmitt T. (2013) "Behavioural and genetic analysis on *Nasonia* shed light on the evolution of sex pheromones", (*Authors contributed equally), *Nature* 494(7437):345-348
- *Niehuis O., ***Buellesbach J.**, Judson A.K., Schmitt T., Gadau J. (2011) "Genetics of cuticular hydrocarbon differences between males of the parasitoid wasps *Nasonia giraulti* and *Nasonia vitripennis*", (*Authors contributed equally), *Heredity* 107(1):61-70
- Raychoudhury R., Desjardins C.A., **Buellesbach J.**, Loehlin D.W., Grillenberger B.K., Beukeboom L., Schmitt T., Werren, J.H. (2010) "Behavioral and genetic characteristics of a new species of *Nasonia*." *Heredity* 104(3):278-288
- Oberle C., Huai J., Reinheckel T., Tacke M., Rassner M., Ekert P.G., **Buellesbach J.**, Borner C. (2010) "Lysosomal membrane permeabilization and cathepsin release is a Bax/Bak-dependent, amplifying event of apoptosis in fibroblasts and monocytes." *Cell Death Differ* 17(7):1167-1178
- Buellesbach J.** (2008) "Hypothetical new class of coding RNAs in insect genomes." *BMMS* 1(4):245-248
- Koenig S., Mehlich A.-M., **Buellesbach J.**, Michiels N. (2006) "Allosteric hormones in *Lumbricus terrestris*? Mass spectrometry of the setal gland product indicates role of ubiquitin." *Invertebr. Reprod. Dev.* 49(1-2):103-111

SELECTED POSTER PRESENTATIONS

- Evolutionary shifts in chemical communication: The loss of a sex pheromone, XVth European Society for Evolutionary Biology Meeting, **Lausanne, Switzerland** 2015
- Cuticular hydrocarbon variation in *Nasonia*: from phenotypic to genetic architecture, 102nd Annual meeting of the German Zoological Society, **Regensburg, Germany** 2009
- Proteomic analysis of the setal gland product from *Lumbricus terrestris*, 4th Annual Molecular Life Sciences Retreat, **Fiescheralp/Wallis, Switzerland** 2007 and 98th Annual meeting of the German Zoological Society, **Bayreuth, Germany** 2005

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SELECTED ORAL PRESENTATIONS

- Female preference and the genetic basis of species-specific male sex pheromone blends in *Nasonia*, *Nasonia* genome meeting, **Cologne, Germany 2012**
- Evolution of intraspecific variation in moth sex pheromone communication, W.M. Keck Center for Behavioral Biology Seminar, **Raleigh, USA 2012**
- Chemical communication as prezygotic isolation mechanism in *Nasonia* – from phenotypic to genetic architecture, *Nasonia* genome meeting, **Nashville, USA 2011**
- Chemical communication and premating isolation via cuticular hydrocarbons in *Nasonia*, 103rd Annual meeting of the German Zoological Society, **Hamburg, Germany 2010**
- Chemical communication involved in prezygotic isolation – from phenotypic to genetic architecture, 2nd Annual SGBM PhD Retreat, **Schluchsee, Germany 2010**
- Species-specific cuticular hydrocarbon variation and its genetic basis in *Nasonia*, *Nasonia* genome meeting, **Rochester, USA 2009** and workshop “The Role of Behaviour in Speciation”, **St. Andrews, Scotland 2009**
- Prezygotic hybridization barriers in *Nasonia*: Cuticular hydrocarbons, Annual meeting Chemical ecologists Baden-Wuerttemberg, **Freiburg, Germany 2009**
- Species-specific cuticular hydrocarbon variation and its genetic basis in *Nasonia*, 2nd Annual SGBM PhD Retreat, **Breisach, Germany 2010**
- Hints on species-specific gene loci in *Nasonia*, 101st Annual meeting of the German Zoological Society, **Jena, Germany 2008** and *Nasonia* genome meeting, **Edinburgh, Scotland 2008**
- Prezygotic hybridization barriers in *Nasonia*, Annual meeting Chemical ecologists Baden-Wuerttemberg, **Ulm, Germany 2007**
- Contents of the setal glands in *Lumbricus terrestris*, workshop “Sexual selection in hermaphrodites”, **Tuebingen, Germany 2005**
- Snap around the clock: Feeding habits in parrot fishes, external Evolutionary Ecology excursion seminars, **Hurghada, Egypt 2004**

TEACHING EXPERIENCE

- 2012: **Certificate** in University Level Teaching Techniques, North Carolina State University, USA
- 2011 - 2012: **Supervision** of PhD student Angela Bucci, North Carolina State University, USA. Thesis title: “Evolution of inter- and intraspecific variation in moth sex pheromonal communication”
- 2010 - 2011: **Supervision** of Bachelor student Christian Mueller, University of Freiburg, Germany, Thesis title: “Female Preference Tests for Sex Pheromone Extracts of RNAi-treated Males of *Nasonia vitripennis*”
- 2010 - 2011: **Supervision** of Diploma student Sebastian Vetter, University of Freiburg, Germany, Thesis title: “Cuticular Hydrocarbons as sexual signal in parasitoid wasps (Hymenoptera: Pteromalidae)”
- 2010: Technical assistant: Practical course “Exercises in zoological identification”, University of Freiburg
- 2009 - 2010: **Supervision** of Diploma student Felix Echinger, University of Freiburg, Germany, Thesis title: “Effects of the manipulation of cuticular hydrocarbon profiles on male mate discrimination behavior in *Nasonia*”
- 2009: **Supervision / Technical assistant**: Advanced practical course: “Evolutionary biology and chemical communication” for bachelor students, University of Freiburg, Germany
- 2009: **Technical assistant**: Practical course “Zoological excursions”, University of Freiburg, Germany

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TEACHING EXPERIENCE (cont'd)

- 2009: **Supervision:** Advanced seminar "Evolutionary biology and chemical communication", University of Freiburg, Germany
- 2008 - 2009: **Supervision** of Diploma student Karin Brandt, University of Freiburg, Germany, Thesis title: "Differences in female preference for different species-specific male sex pheromone blends in the genus *Nasonia* (Hymenoptera: Pteromalidae)"
- 2008: **Technical assistant:** Practical course "Exercises in zoological identification", University of Freiburg
- 2007 - 2008: **Supervision** of Diploma student Christopher Greim, University of Freiburg, Germany, Thesis title: "Prezygotic Hybridization Barriers in *Nasonia*"

SCIENTIFIC MANAGEMENT

- Organization and conception:** Multidisciplinary scientific seminars, soft skill courses, practical courses, academic career building seminars
- Professional support:** Comprehensive career mentoring, sociocultural and integrative advice
- Administration:** Acquisition, budgeting and long-term planning of major interdisciplinary research grants, lab and institute management
- External communication:** Scientific public relations, integrative networking between academia and industry

REFERENCES

Prof. Dr. Thomas Schmitt, Department of Animal Ecology and Tropical Biology, Biocenter, University of Würzburg, Am Hubland, D-97074 Würzburg, Germany phone: +49-931-31-84188, fax: +49 931 31-84352, email: thomas.schmitt@uni-wuerzburg.de

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