

OLAV RUEPPELL

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EDUCATION, POSITIONS AND EMPLOYMENT

- 2013 – current** Professor of Biology
Department of Biology, University of North Carolina, Greensboro
- 2014** Visiting Scientist
Department of Zoology, University of Regensburg, Germany
- 2011** Visiting Scholar at the National Evolutionary Synthesis Center
- 2008 – 2013** Associate Professor of Biology
Department of Biology, University of North Carolina, Greensboro
- 2003 – 2008** Assistant Professor of Biology
Department of Biology, University of North Carolina, Greensboro
- 2001 – 2003** Feodor-Lynen Postdoctoral Fellow of the Alexander-von-Humboldt Foundation
Genetics of honey bee (*Apis mellifera* L.) social behavior.
Department of Entomology, University of California, Davis (P.I.: Prof. R.E. Page Jr.)
- 2000** Postgraduate Researcher
Ant social evolution: Reproductive investment and sex allocation.
Department of Biology I, University of Regensburg, Germany (P.I.: Prof. J. Heinze)
- 1997 – 2000** Doctorate (DSC) Fellow of the German National Scholarship Foundation
Dissertation: Queen size dimorphism in ants. Causation and consequences of body size.
Department of Behavioral Physiology and Sociobiology, University of Würzburg, Germany
(advisor: Prof. B. Hölldobler)
- 1991 – 1997** Diplom-Studies in Biology, Major: Zoology; Minors: Genetics, Biochemistry
Thesis: Queen size polymorphism in *Leptothorax rugatulus* (Emery).
University of Würzburg, Germany (advisors: Prof. B. Hölldobler, Prof. J. Tautz)

HONORS, AWARDS, AND SCHOLARSHIPS

- 2016** UNCG Thomas Undergraduate Research Mentor Award
- 2015** Mid-Career Mentoring Award – Division of Biology of the Council for Undergraduate Research
- 2014** Regensburger Universitätsstiftung – Hans Vielberth Guest Researcher Fellowship
- 2013** NSF Basic Research to Enable Agricultural Development (BREAD) Ideas Challenge Winner
- 2010** Distinguished Charles Michener Lecturer, University of Kansas, Lawrence.
- 2009** UNCG Junior Research Excellence Award
- 2009** College of Arts and Sciences Featured Scholar. UNCG. Together with Drs. M. Chhetri, M. Crowe, S. Gupta, D. Remington and J. Rychtar.
- 2001 – 2002** "*Genetic Mapping and Gene Expression Analysis of the Behavioral Ontogeny of Honey Bees*", Feodor-Lynen Fellowship of the Alexander-von-Humboldt Foundation
- 1998 – 2000** "*Queen Size Dimorphism in Ants. Causation and Consequences of Body Size*", Dissertation Scholarship of the German National Scholarship Foundation
- 1998** "*Best Integration of Molecular and Organismal Biology*", Student Award of the Association of German Biologists (VdBiol).
- 1997 – 2000** "*Queen Size Dimorphism in Ants. Causation and Consequences of Body Size*", Dissertation Scholarship of the German Science Foundation: (declined in 1998).

COMPETITIVE GRANTS AND CONTRACTS

- 2017 – 2020 “*Identification of brood signals that induce hygienic behavior in honey bees to develop and implement novel strategies for Varroa control and sustainable apiculture*” (2017-68004-26321), USDA-NIFA, PI, (\$999,319)
- 2017 – 2018 “*Immune Consequences of Virus Infection in Honey Bee Queens*” (17-8130-0636-CA), USDA-APHIS, PI, (\$32,221)
- 2017 – 2018 “*Comparative Characterization of Virus Content and Resistance in Genetic Lines of US Honey Bees*” PI, Project ApisM – Healthy Hives 2020 (\$53,269)
- 2017 – 2020 “*REU Site: Mathematical Biology at the University of North Carolina at Greensboro*” (DMS #1659646), NSF, Co-PI, (\$304,959)
- 2017 – 2018 “*Understanding Semiochemical Tools for Natural Varroa Control.*” PI, National Honey Board / Project ApisM (\$56,453)
- 2016 – 2017 “*Characterization and synthesis of chemicals to induce hygienic behavior in Honey Bees; A method to control Varroa mites in Honey Bee Hives*” (2016-TEG-1503). North Carolina Biotechnology Center, PI, (\$68,627)
- 2016 “*Israeli Acute Paralysis Virus in Honey Bee Queens: Health Impact, Transmission Routes, and Immune Priming*”. USDA-APHIS, PI, (\$10,089)
- 2016 “*Monitoring social foraging behavior in a biological model system*” (W911NF1610233 / 68551LSRIP) Army Research Office, PI, (\$69,000)
- 2016 “*Immunologically structured societies*”. Triangle Center for Evolutionary Medicine, Co-PI (PI: Seth Barribeau, East Carolina University), (\$20,000)
- 2015 – 2019 “*Studies of the Plasticity of Stress Defense Induction in the Social Honey Bee Model*” (W911NF1520045 / 66989PHSR) Co-PI (PI: M. Strand, US Army), US Army Research Office (\$319,011)
- 2015 “*Investigation of the unsaturated hydrocarbon linked to Varroa, DWV, and hygienic behavior in the honey bee (Apis mellifera)*”, Co-PI, Project ApisM (\$24,835)
- 2015 “*Effects of Steel Foundation Wire on Hygienic Removal and Chemical Content of Apis mellifera Brood*”, Project ApisM, PI, (\$7,662)
- 2014 – 2017 “*REU Site: Mathematical Biology at the University of North Carolina at Greensboro*” (DMS #1359187), NSF, Faculty Mentor, (\$275,952)
- 2013 – 2015 “*Biodemography and Genomics of Aging Trajectories and Plasticity in a Social Model*” R21AG046837, NIH-NIA, PI, (\$287,000)
- 2013 – 2016 “*Behavioral and molecular studies to enhance Varroa-specific hygienic behavior of honeybees (Apis mellifera)*”, Project ApisM, PI, (\$15,000)
- 2013 – 2014 “*Identification of IAPV Replication Sites in Honey Bees*”. North American Pollinator Protection Campaign, PI, (\$5,600)
- 2012 – 2017 “*Genomic Analyses of Intraspecific Patterns of Extreme Recombination in Honey Bees*” (R15GM102753), NIH-NIGMS. PI, (\$287,000)
- 2012 “*Support of the Conference of the North-American Section of the International Union for the Study of Social Insects*”, US Army Research Office, PI, (\$5,000)
- 2010 – 2015 “*Oxidative Stress, Stress Resistance and Longevity in Apis mellifera*” (W911NF-04-D-0003), US Army Research Office, Co-PI (PI: M. Strand, US Army), (\$410,631)

- 2010 – 2014 “*FASE: Genetic Characterization of Absolute Varroa Mite Resistance in Honey Bees*” (#2010-65104-20533), PI, United States Department of Agriculture – CSREES – NIFA (\$449,988).
- 2009 – 2013 “*UBM Group: Mathematical and Biological Undergraduate Research Training at UNCG*” (DBI #0926288), Co-PI (PI: J. Rychtar, UNCG), National Science Foundation (\$233,820).
- 2009 – 2011 “*In-Vitro Culture of Intestinal Stem Cell Lines from Honey Bees as Biotechnological Tool for Genetic, Cellular, and Pathogenicity Studies*”, PI, North Carolina Biotechnology Center (\$75,000)
- 2009 – 2011 “*REU Site: Interdisciplinary Quantitative Science REU at UNCG*” (#0850465), Faculty Mentor (PI: M. Crowe, UNCG), National Science Foundation (\$182,766).
- 2008 – 2009 “*Nutritional Effects on Intestinal Health and Longevity of Honey bee Workers*”, PI, North American Pollinator Protection Campaign (\$7,500).
- 2007 – 2008 “*Comparative Genome Analysis of the Giant Honeybee (Apis dorsata)*” PI, Faculty Research Grant, University of North Carolina at Greensboro (\$ 5,000).
- 2006 – 2010 “*RUI: Genetic Dissection of the Reproductive Ground-Plan Hypothesis of Social Evolution*” (IOS #0615502), PI, National Science Foundation (\$369,265).
- 2006 – 2010 “*UBM/RUI: Using Collaborative Undergraduate Research to Train Students in Mathematics and Biology at The University of North Carolina at Greensboro*” (EF #0634182), Co-PI (PI: J. Rychtar, UNCG), National Science Foundation (\$239,835).
- 2005 – 2007 “*Mitosis and Apoptosis in Relation to Lifespan in the Honey Bee (Apis mellifera L.)*”, PI, American Federation of Aging Research (\$ 54,911).
- 2003 – 2006 “*Biodemography and Behavioral Senescence in the Honey Bee*”, subcontract from project “*Biodemographic Effects or Social Evolution in the Honey Bee*” (PI: Page) in program project: “*Biodemographic determinants of life span*” (PI: Carey, PO1 AG22500), National Institute of Aging (\$ 93,414).
- 2003 – 2004 “*Genomic Localization of Genetic Markers for the Behavioral Maturation of Honey Bee Workers*” PI, New Faculty Grant, University of North Carolina at Greensboro (\$ 5,000).
- 2002 – 2003 “*Senescence and Biodemography of the Honey Bee*“, Centre on the Economics and Demography of Aging, Pilot Grant (\$ 9,600).

PATENTS

- 2016** “Methods and Compositions for Inducing Hygienic Behavior in Honey Bees.” Patent with the United States Patent and Trademark Office (#62/188,991).

REFEREED PUBLICATIONS (mentored: * undergraduate student, # graduate student, % postdoc)

- (80) AMIRI E.%, STRAND M.K., RUEPPELL O. & TARPY D.R. (2017) Queen quality and the impact of honey bee diseases on queen health: potential for interactions between two major threats to colony health. *Insects*, 8(2), 48; doi:10.3390/insects8020048. PMID: PMC5492062.
- (79) RUEPPELL O., YOUSEFI B. *, COLLAZO J. * & SMITH D. * (2017) Early life stress affects mortality rate more than social behavior, gene expression or oxidative damage in honey bee workers. *Experimental Gerontology*, 90: 19-25. doi:10.1016/j.exger.2017.01.015. PMID: PMC5346452.
- (78) WAGONER K.M.# & RUEPPELL O. (2017) Effects of steel foundation wire on elemental content and hygienic removal of honey bee (*Apis mellifera*) brood. *Journal of Apicultural Research*, 56(3):270-277. doi:10.1080/00218839.2017.1294525.
- (77) RUEPPELL O., KUSTER R. #, MILLER K. #, FOUKS B.%, RUBIO CORREA S. *, COLLAZO J. *, PHAINCHAROEN M., TINGEK S., & KOENIGER N. (2016) A new metazoan recombination rate record and consistently high

- recombination rates in the honey bee genus *Apis* accompanied by frequent inversions but not translocations. *Genome Biology and Evolution*, 8(12): 3653-3660. [doi:10.1093/gbe/evw269](https://doi.org/10.1093/gbe/evw269). PMID: PMC5521732.
- (76) SIMONE-FINSTROM M.[°], LI-BYARLAY H.[°], HUANG M.H.[°], STRAND M.K., RUEPPELL O., & TARPY D.R. (2016) Migratory management and environmental conditions affect lifespan and oxidative stress in honey bees. *Scientific Reports*, 6: 32023. [doi:10.1038/srep32023](https://doi.org/10.1038/srep32023). PMID: PMC4995521.
- (75) LI-BYARLAY H.[°], HUANG M.H.[°], SIMONE-FINSTROM M.[°], STRAND M.K., TARPY D.R., & RUEPPELL O. (2016) Honey bee (*Apis mellifera*) drones survive oxidative stress due to increased tolerance instead of avoidance or repair of oxidative damage. *Experimental Gerontology*, 83(10): 15-21. [doi:10.1016/j.exger.2016.07.003](https://doi.org/10.1016/j.exger.2016.07.003). PMID: PMC5007199.
- (74) RUEPPELL O., AUMER D. & MORITZ R.F.A. (2016) Ties between aging plasticity and reproductive physiology in honey bees (*Apis mellifera*) reveal a positive relation between fecundity and longevity as consequence of advanced social evolution. *Current Opinion in Insect Science*, 16: 64-68. [doi:10.1016/j.cois.2016.05.009](https://doi.org/10.1016/j.cois.2016.05.009). PMID: PMC5094365.
- (73) THOMPSON E.* , EVERETT J.* , ROWELL J.T., RYCHTAR J. & RUEPPELL O. (2015) The evolution of cooperation is affected by the persistence of fitness effects, the neighborhood size and their interaction. *Letters in Biomathematics*, 2(1): 67-78. [doi:10.1080/23737867.2015.1090890](https://doi.org/10.1080/23737867.2015.1090890). PMID: PMC4798257.
- (72) VON WYSCHETSKI K., RUEPPELL O., OETTLER J. & HEINZE J. (2015) Transcriptomic signatures mirror the lack of the fecundity / longevity trade-off in ant queens. *Molecular Biology and Evolution*, 32(12): 3173-3185. [doi:10.1093/molbev/msv186](https://doi.org/10.1093/molbev/msv186). PMID: PMC5009957.
- (71) RUEPPELL O., KOENIGSEDER F., HEINZE J. & SCHREMPF A. (2015) Intrinsic survival advantage of social insect queens depends on reproductive activation. *Journal of Evolutionary Biology*, 28(12): 2349-2354. [doi:10.1111/jeb.12749](https://doi.org/10.1111/jeb.12749). PMID: 26348543.
- (70) SADD B.M., BARRIBEAU S.M., ET AL. (LIST OF 142 AUTHORS INCLUDING RUEPPELL, O.) (2015) The genomes of two key bumblebee species with primitive eusocial organization. *Genome Biology*, 16:76. [doi:10.1186/s13059-015-0623-3](https://doi.org/10.1186/s13059-015-0623-3). PMID: PMC4414376.
- (69) ROSS C.* , DEFELICE D.* , HUNT G., IHLE K., AMDAM G.V. & RUEPPELL O. (2015) Genomic correlates of recombination rate and its variability across eight recombination maps in the Western Honey Bee (*Apis mellifera* L.). *BMC Genomics*, 16:107. [doi:10.1186/s12864-015-1281-2](https://doi.org/10.1186/s12864-015-1281-2). PMID: PMC4339005
- (68) IHLE K.E., RUEPPELL O., HUANG Z.Y., WANG Y., FONDRK M.K., PAGE R.E., AMDAM G.V. (2015) Genetic architecture of a hormonal response to gene knockdown in honey bees. *Journal of Heredity*, 106: 155-165. (with cover) [doi:10.1093/jhered/esu086](https://doi.org/10.1093/jhered/esu086) PMID: PMC4323067.
- (67) MICHAUD S., BONCRISTIANI H.F.[°], GOUW J.W., STRAND M., PETTIS J., RUEPPELL O., FOSTER L.J. (2015) Response of the honey bee (*Apis mellifera* L.) proteome to Israeli acute paralysis virus infection. *Canadian Journal of Zoology*, 93(9): 711-720, [doi:10.1139/cjz-2014-0181](https://doi.org/10.1139/cjz-2014-0181).
- (66) ROSS C.* , RYCHTAR J., RUEPPELL O. (2015) A structured population model suggests that long life and post-reproductive lifespan promote the evolution of cooperation. *Journal of Theoretical Biology*, 369:85-94. [doi:10.1016/j.jtbi.2015.01.020](https://doi.org/10.1016/j.jtbi.2015.01.020). PMID: PMC4355322. (Featured in CUR Highlights on 3/7/2016).
- (65) ROSS C.* , DEFELICE D.* , HUNT G., IHLE K., RUEPPELL O. (2015) A comparison of multiple genome-wide recombination maps in *Apis mellifera*. *Springer Proceedings in Mathematics & Statistics* 109: 91-98. [doi:10.1007/978-3-319-11125-4_10](https://doi.org/10.1007/978-3-319-11125-4_10).
- (64) DEFELICE D.S.* , ROSS C.* , SIMONE-FINSTROM M.[°], WARRIT N., SMITH D.R., BURGETT M., SUKUMALANAND P., RUEPPELL O. (2015) Geographic variation in polyandry of the Eastern Honey Bee, *Apis cerana*, in Thailand. *Insectes Sociaux*, 62(1): 37-42, [doi:10.1007/s00040-014-0371-5](https://doi.org/10.1007/s00040-014-0371-5). PMID: PMC4319665.
- (63) HEINZE J., RUEPPELL O. (2014) The frequency of multi-queen colonies increases with altitude in a Nearctic ant. *Ecological Entomology*, 39: 527–529. [doi:10.1111/een.12119](https://doi.org/10.1111/een.12119)
- (62) FORKPAH C.[#], DIXON L.R.* , FAHRBACH S.E., RUEPPELL O. (2014) Xenobiotic effects on intestinal stem cell proliferation in adult honey bee (*Apis mellifera* L) workers. *PLoS ONE*, 9(3): e91180. [doi:10.1371/journal.pone.0091180](https://doi.org/10.1371/journal.pone.0091180). PMID: PMC3946715.

- (61) KUSTER R.D.[#], BONCRISTIANI H.F.[%], RUEPPELL O. (2014) Immunogene and viral transcript dynamics during parasitic *Varroa destructor* (Anderson) mite infection of developing honey bee (*Apis mellifera* L) pupae. *Journal of Experimental Biology*, 217: 1710-1718. doi:10.1242/jeb.097766. PMID: 24829325.
- (60) ELSIK C.G., WORLEY K.C., BENNETT A.K., BEYE M., CAMARA F.C., CHILDERS C.P., DE GRAAF D.C., DEBSYER G., DENG J., DEVREESE B., ELHAIK E., EVANS J.D., FOSTER L.J., GRAUR D., GUIGO R., HOFF K.J., HOLDER M.E., HUDSON M.E., HUNT G.J., JIANG H., JOSHI V., KHETANI R.S., KOSAREV P., KOVAR C.L., MA J., MALESZKA R., MORITZ R.F.A., MUNOZ-TORRES M.C., MURPHY T.D., MUZYNY D.M., NEWSHAM I.F., REESE J.T., ROBERTSON H.M., ROBINSON G.E., RUEPPELL O., SOLOVYEV V., STANKE M., STOLLE E., TSURUDA J.M., VAN VAERENBERGH M., WATERHOUSE R.M., WEAVER D.B., WHITFIELD C.W., WU Y., ZDOBNOV E.M., ZHANG L., ZHU D., AND GIBBS R.A. (2014) Finding the missing honey bee genes: lessons learned from a genome upgrade. *BMC Genomics*, 15(1):86. doi: 10.1186/1471-2164-15-86. PMCID: PMC4028053.
- (59) RUEPPELL O. (2014) The architecture of the pollen hoarding syndrome in honey bees: Implications for understanding social evolution, behavioral syndromes, and selective breeding. *Apidologie*, 45: 364-374. doi: 10.1007/s13592-013-0244-3. PMCID: PMC4264964.
- (58) DIXON L. R.*, KUSTER R.D.*, RUEPPELL O. (2014) Reproduction, social behavior, and aging trajectories in honey bee workers. *AGE*, 36: 89-101. doi:10.1007/s11357-013-9546-7. PMCID: PMC3889882.
- (57) ROSS C. R.*, RUEPPELL O., RYCHTAR J. (2013) A spatially organized population model to study the evolution of cooperation in species with discrete life-history stages. *Springer Proceedings in Mathematics & Statistics*, 64: 147-154. doi:10.1007/978-1-4614-9332-7_15.
- (56) CROWE M.L., RYCHTAR J., RUEPPELL O., CHHETRI M., REMINGTON D.L., GUPTA S.N. (2013) Proving the “proof”: Interdisciplinary undergraduate research positively impacts students. *Springer Proceedings in Mathematics & Statistics*, 64: 25-29. doi:10.1007/978-1-4614-9332-7_4.
- (55) BONCRISTIANI H.F.[%], EVANS J.D., CHEN Y., PETTIS J., MURPHY C., LOPEZ D.L., SIMONE-FINSTROEM M.[%], STRAND M., TARPY D.R., RUEPPELL O. (2013) In-vitro infection of pupae with Israeli Acute Paralysis Virus suggests variation for susceptibility and disturbance of transcriptional homeostasis in honey bees (*Apis mellifera*). *PLoS ONE*, 8(9): e73429. doi:10.1371/journal.pone.0073429. PMCID: PMC3764161.
- (54) RUEPPELL O., MEIER S.*, DEUTSCH R. (2012) Multiple mating but not recombination causes quantitative increase in offspring genetic diversity for varying genetic architectures. *PLoS ONE*, 7(10): e47220. doi:10.1371/journal.pone.0047220, PMCID: PMC3471945.
- (53) PAGE R.E., FONDRK M.K., RUEPPELL O. (2012) Complex pleiotropy characterizes the pollen hoarding syndrome in honey bees (*Apis mellifera* L.). *Behavioral Ecology and Sociobiology*, 66: 1459-1466. doi:10.1007/s00265-012-1400-x. PMID: 23226916
- (52) PAGE R.E., RUEPPELL O., AMDAM G.V. (2012) Genetics of reproduction and regulation of honey bee (*Apis mellifera* L.) social behavior. *Annual Review of Genetics*, 46: 97-119. doi:10.1146/annurev-genet-110711-155610, PMID: 22934646
- (51) DIXON L.R.*, MCQUAGE M.R.*, LONON E.J.*, BUEHLER D.*, SECK O.*, RUEPPELL O. (2012) Pleiotropy of segregating genetic variants that affect honey bee worker life expectancy. *Experimental Gerontology*, 47: 631-637. http://dx.doi.org/10.1016/j.exger.2012.05.017, PMID: 22664574
- (50) MUNDAY M.*, RINDERER T.E., RUEPPELL O. (2012) Worker ovary size and activation of Russian honey bees (*Apis mellifera* L.). *Journal of Apicultural Research*, 51: 147-149. doi: 10.3896/IBRA.1.51.1.21
- (49) SHORTER J.R., RUEPPELL O. (2012) A review on self-destructive defense behaviors in social insects. *Insectes Sociaux*, 59: 1-10. doi:10.1007/s00040-011-0210-x
- (48) RUEPPELL O., HAYES A.M.*, WARRIT N., SMITH D.R. (2011) Population structure of *Apis cerana* in Thailand reflects biogeography and current gene flow rather than *Varroa* mite association. *Insectes Sociaux*, 58: 445-452. doi:10.1007/s00040-011-0161-2
- (47) RUEPPELL O., PHAINCHAROEN M., KUSTER R.D.*, TINGEK S. (2011) Cross-species correlation between queen mating numbers and worker ovary sizes suggests kin conflict may influence ovary size evolution in honeybees. *Naturwissenschaften*, 98: 795-799. doi:10.1007/s00114-011-0822-z, PMID: 21732186
- (46) GRAHAM, A.M.[#], MUNDAY, M.D.*, KAFTANOGLU, O., PAGE R.E., AMDAM G.V., RUEPPELL, O. (2011) Support for the reproductive ground plan hypothesis of social evolution and major QTL for ovary traits of

- Africanized worker honey bees (*Apis mellifera* L.). BMC Evolutionary Biology, 11: 95. [doi:10.1186/1471-2148-11-95](https://doi.org/10.1186/1471-2148-11-95), PMID: PMC3100260
- (45) ABBOT, P., ABE, J., ALCOCK, J., ET AL. (ALPHABETICAL LIST OF 136 AUTHORS INCLUDING **RUEPPELL, O.**) (2011) Inclusive fitness theory and eusociality. Nature, 471: E1-E4. [doi:10.1038/nature09831](https://doi.org/10.1038/nature09831), PMID: 21430721
- (44) WILHELM M.E.*, CHHETRI M., RYCHTAR J., **RUEPPELL O.** (2011) A game theoretical analysis of the mating sign behavior in the honey bee. Bulletin of Mathematical Biology, 73: 626-638. [doi:10.1007/s11538-010-9544-1](https://doi.org/10.1007/s11538-010-9544-1), PMID: 20467824
- (43) **RUEPPELL O.**, METHENY J.D.[#], LINKSVAYER T.A., FONDRK M.K., PAGE R.E., AMDAM G.V. (2011) Genetic architecture of ovary size and asymmetry in European honeybee workers. Heredity, 106: 894-903. [doi:10.1038/hdy.2010.138](https://doi.org/10.1038/hdy.2010.138), PMID: PMC3080466
- (42) WILLARD L.E.[#], HAYES A.M.*, WALLRICHS M.A.*, **RUEPPELL O.** (2011) Food manipulation in honey bees induces physiological responses at the individual and colony level. Apidologie, 42:508-518. [doi:10.1007/s13592-011-0006-z](https://doi.org/10.1007/s13592-011-0006-z)
- (41) MARTINSON, V., DANFORTH, B. N., MINCKLEY, R., **RUEPPELL, O.**, TINGEK, S., MORAN, N. (2011) A simple and distinctive microbiota exclusively associated with honey bees and bumble bees. Molecular Ecology, 20: 619-628. [doi: 10.1111/j.1365-294X.2010.04959.x](https://doi.org/10.1111/j.1365-294X.2010.04959.x), PMID: 21175905 (with cover)
- (40) **RUEPPELL O.**, HAYWORTH M.K.*, ROSS N.P.* (2010) Altruistic self-removal of health-compromised honey bee workers from their hive. Journal of Evolutionary Biology, 23: 1538-1546. [doi:10.1111/j.1420-9101.2010.02022.x](https://doi.org/10.1111/j.1420-9101.2010.02022.x), PMID: 20500363.
- (39) MEZJAR E.R.*, GADAU J., KOENIGER N., **RUEPPELL O.** (2010) Comparative linkage mapping suggests a high recombination rate in all honey bees. Journal of Heredity, 101: S118-S126. [doi:10.1093/jhered/esq002](https://doi.org/10.1093/jhered/esq002), PMID: 20212006 (with cover)
- (38) KALCOUNIS-RUEPPELL M.C., PETRIC R., BRIGGS J. R., CARNEY C., MARSHALL M.M., WILLSE J.T., **RUEPPELL O.**, RIBBLE D.O., CROSSLAND J.P. (2010) Differences in ultrasonic vocalizations between wild and laboratory California mice (*Peromyscus californicus*). PLoS ONE, 5 (4): e9705. [doi:10.1371/journal.pone.0009705](https://doi.org/10.1371/journal.pone.0009705), PMID: PMC2848568
- (37) LINKSVAYER T.A., **RUEPPELL O.**, SIEGEL A., KAFTANOGLU O., PAGE R.E., AMDAM G.V.A. (2009) The genetic basis of transgressive ovary size in honey bee workers. Genetics, 183: 693-707. [doi:10.1534/genetics.109.105452](https://doi.org/10.1534/genetics.109.105452), PMID: PMC2766328 (with cover)
- (36) GOVE R.P.*, HAYWORTH M. K.*, CHHETRI M., **RUEPPELL O.** (2009) Division of labour and social insect colony performance in relation to task and mating number under two alternative response threshold models. Insectes Sociaux, 56: 319-331. [doi: 10.1007/s00040-009-0028-y](https://doi.org/10.1007/s00040-009-0028-y)
- (35) **RUEPPELL O.**, KAFTANOGLU O., PAGE R.E. (2009) Honey bee (*Apis mellifera*) workers live longer in small than in large colonies. Experimental Gerontology, 44: 447-452. [doi:10.1016/j.exger.2009.04.003](https://doi.org/10.1016/j.exger.2009.04.003), PMID: PMC2690613
- (34) HAYWORTH M. K.*, JOHNSON N.G.*, WILHELM M.E.*, GOVE R.P.*, METHENY J.D.[#], **RUEPPELL O.** (2009) Added weights lead to reduced flight behavior and mating success in polyandrous honey bee queens (*Apis mellifera*). Ethology, 115: 698-706. [doi: 10.1111/j.1439-0310.2009.01655.x](https://doi.org/10.1111/j.1439-0310.2009.01655.x)
- (33) **RUEPPELL O.** (2009) Characterization of quantitative trait loci for the age of first foraging in honey bee workers. Behavior Genetics, 39: 541-553. [doi: 10.1007/s10519-009-9278-8](https://doi.org/10.1007/s10519-009-9278-8), PMID: 19449161
- (32) AMDAM G.V., **RUEPPELL O.**, FONDRK M.K., PAGE R.E., NELSON C.M. (2009) The nurse's load: early-life exposure to brood-rearing affects behavior and lifespan in honey bees (*Apis mellifera*). Experimental Gerontology, 44: 467-471. [doi:10.1016/j.exger.2009.02.013](https://doi.org/10.1016/j.exger.2009.02.013), PMID: 19264121
- (31) VILJAKAINEN L., EVANS J.D., HASSELMANN M., **RUEPPELL O.**, TINGEK S., PAMILO P. (2009) Rapid evolution of immune proteins in social insects. Molecular Biology and Evolution, 26: 1791-1801. [doi:10.1093/molbev/msp086](https://doi.org/10.1093/molbev/msp086), PMID: 19387012
- (30) WANG Y., AMDAM G.V., **RUEPPELL O.**, WALLRICHS M.A.*, FONDRK M.K., KAFTANOGLU O., PAGE R.E. (2009) PDK1 and HR46 gene homologs tie social behavior to ovary signals. PLoS ONE, 4(4): e4899. <http://dx.plos.org/10.1371/journal.pone.0004899>, PMID: PMC2659776

- (29) CHHETRI M., JOHNSON N.*, **RUEPPELL O.**, RYCHTAR J. (2009) Revisiting the variance-based selection model of diploid drone production for multiple mating in honey bees. Journal of Interdisciplinary Mathematics, 12(2): 141-160.
- (28) **RUEPPELL O.**, HUNGGIMS E., TINGEK S. (2008) Association between larger ovaries and pollen foraging in queenless *Apis cerana* workers supports the reproductive ground - plan hypothesis of social evolution. Journal of Insect Behavior, 21: 317-321.
- (27) WARD K.N.[#], COLEMAN J.*, CLITTIN K.*, FAHRBACH S., **RUEPPELL O.** (2008) Age, caste, and behavior determine the replicative activity of intestinal stem cells in honeybees (*Apis mellifera* L.). Experimental Gerontology, 43: 530-537. doi:10.1016/j.exger.2008.03.012. PMID: 18479865.
- (26) **RUEPPELL O.**, LINFORD R.*, GARDNER P.*, COLEMAN J.*, FINE K.* (2008) Aging and demographic plasticity in response to experimental age structures in honeybees (*Apis mellifera* L.). Behavioral Ecology and Sociobiology, 62: 1621-1631. doi:10.1007/s00265-008-0591-7, PMID: PMC2440700
- (25) **RUEPPELL O.**, JOHNSON N.*, RYCHTAR J. (2008) Variance-based selection may explain general mating patterns in social insects. Biology Letters, 4: 270-273. doi:10.1098/rsbl.2008.0065, PMID: PMC2610052.
- (24) **RUEPPELL O.**, BACHELIER C., FONDRK M.K., PAGE R.E. (2007) Regulation of life history determines lifespan of worker honey bees (*Apis mellifera* L.). Experimental Gerontology, 42: 1020-1032. PMID: PMC2398712
- (23) **RUEPPELL O.**, CHRISTINE S.[#], MULCRONE C.*, GROVES L.* (2007) Aging without functional senescence in honey bee workers. Current Biology, 17: R274-R275. PMID: PMC2665029
- (22) HUNT G., AMDAM G.V., SCHLIPALIUS D., EMORY C., SARDESAI N., WILLIAMS C., **RUEPPELL O.**, GUZMÁN-NOVOA E., ARECHA VALETA-VELASCO M., CHANDRA S., FONDRK K.M., BEYE M., PAGE R.E. (2007) Behavioral genomics of honeybee foraging and nest defense. The potential of the honey bee for positional cloning: High recombination rates lead to targeted genome scans for foraging and defensive-behavior genes. Naturwissenschaften, 94: 247-267. (with cover) PMID: PMC1829419
- (21) BEYE M., GATTERMEIER I., HASSELMANN M., GEMPE T., SCHIOETT M., BAINES J., SCHLIPALIUS D., MOUGEL F., EMORE C., **RUEPPELL O.**, SIRVIÖ A., GUZMÁN-NOVOA E., HUNT G., SOLIGNAC M., PAGE R.E. (2006) Exceptionally high levels of recombination across the honey bee genome. Genome Research, 16: 1339-1344. PMID: PMC1626635 (with cover)
- (20) **RUEPPELL O.**, CHANDRA S., PANKIW T., FONDRK M.K., BEYE M., HUNT G., PAGE R.E. (2006) The genetic architecture of sucrose responsiveness in the honey bee (*Apis mellifera* L.). Genetics, 172: 243-251. PMID: PMC1456151
- (19) SIRVIÖ A., GADAU J., **RUEPPELL O.**, LAMATSCH D., BOOMSMA J.J., PAMILO P., PAGE R.E. (2006) High recombination frequency creates genotypic diversity in colonies of the leaf-cutting ant *Acromyrmex echinator*. Journal of Evolutionary Biology, 15: 1475-1485. PMID: 16910978
- (18) **RUEPPELL O.**, PAGE R.E., FONDRK M.K. (2006) Male maturation response to selection of the pollen-hoarding syndrome in honey bees (*Apis mellifera* L.). Animal Behaviour, 71: 227-234. PMID: PMC2564602
- (17) **RÜPPELL O.**, KIRKMAN R.* (2005) Extraordinary starvation resistance in *Temnothorax rugatulus* (Hymenoptera, Formicidae) colonies: Demography and adaptive behavior. Insectes Sociaux, 52: 282-290. PMID: PMC2408869
- (16) **RUEPPELL O.**, FONDRK M.K., PAGE R.E. (2005) Biodemographic analysis of male honey bee mortality. Aging Cell, 4: 13-19. PMID: PMC2441913 (with cover)
- (15) **RÜPPELL O.**, PANKIW T., PAGE R.E. (2004) Pleiotropy, epistasis and new QTL: the genetic architecture of honey bee foraging behavior. Journal of Heredity, 95: 481-491.
- (14) **RUEPPELL O.**, PANKIW T., NIELSEN D.I., FONDRK M.K., BEYE M., PAGE R.E. (2004) The genetic architecture of the behavioral ontogeny of foraging in honey bee workers. Genetics, 167: 1767-1779. PMID: PMC1471018
- (13) **RÜPPELL O.**, STRÄTZ M., BAIER B., HEINZE J. (2003) Mitochondrial markers in the ant *Leptothorax rugatulus* reveal the population genetic consequences of female philopatry at different hierarchical levels. Molecular Ecology 12: 795-801.

- (12) RÜPPELL O., SCHÄFFLER L.*, HÖLLDOBLER B. (2002) Lack of plasticity in the behaviour of queens of the ant *Leptothorax rugatulus* Emery (Formicidae: Hymenoptera). Journal of Insect Behavior 15: 447-454.
- (11) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (2002) Sex ratio variation in the facultatively polygynous and queen size dimorphic ant *Leptothorax rugatulus*. Ethology, Ecology and Evolution, 14: 53-67.
- (10) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (2002) Intracolony patterns of reproduction in the queen-size dimorphic ant *Leptothorax rugatulus*. Behavioural Ecology 13: 239-247. (with cover)
- (9) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (2001) Complex determination of queen body size in the queen size dimorphic ant *Leptothorax rugatulus* (Formicidae: Hymenoptera). Heredity 87: 33-40.
- (8) GOBIN B., RÜPPELL O., HARTMANN A., JUNGNIKKEL H., MORGAN E.D., BILLEN J. (2001) A new type of exocrine gland and its function in mass recruitment in the ant *Cylindromyrmex whymperi* (Formicidae: Cerapachinae). Naturwissenschaften 88: 395-399.
- (7) HEINZE J., HARTMANN A., RÜPPELL O. (2001) Sex allocation ratios in the facultatively polygynous ant, *Leptothorax acervorum*. Behavioral Ecology and Sociobiology 50: 270-274.
- (6) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (2001) Alternative reproductive tactics in the queen-size dimorphic ant *Leptothorax rugatulus* (Emery) and population genetic consequences. Behavioral Ecology and Sociobiology 50: 189-197.
- (5) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (2001) Genetic and social structure of the queen size dimorphic ant *Leptothorax* cf. *andrei*. Ecological Entomology 26:76-82.
- (4) RÜPPELL O., HEINZE J. (1999) Alternative reproductive tactics in females: the case of size polymorphism in ant queens. Insectes Sociaux 46: 6-17.
- (3) HEINZE J., FOITZIK S., OBERSTADT B., RÜPPELL O., HÖLLDOBLER B. (1999) A female caste specialized for the production of unfertilized eggs in the ant *Crematogaster smithi*. Naturwissenschaften 86: 93-95.
- (2) RÜPPELL O., HEINZE J., HÖLLDOBLER B. (1998) Size-dimorphism in the queens of the North American ant *Leptothorax rugatulus* (Emery). Insectes Sociaux 45: 67-77.
- (1) HEINZE J., RÜPPELL O., FOITZIK S., BUSCHINGER A. (1998) First record of ants with Cestodes from western North-America. Florida Entomologist 81:122-125.

BOOK CHAPTERS AND NON-REFEREED PUBLICATIONS

- 2018 QUIGLEY T.P., AMDAM G.V., RÜPPELL O. Honey bee workers as models of aging. In: "Conn's Handbook of Models for Human Aging", J. Ram (ed.), Elsevier Press, Atlanta, in press.
- 2017 AMIRI E., SEDDON G., ZULUAGA SMITH W., STRAND M., TARPY D.R., AND RÜPPELL O., Israeli acute bee paralysis virus and the health of honey bee queens. Bee World, 93 (4): 104.
- 2014 TARPY, D. R., SIMONE-FINSTROM M., HUANG M.H., STRAND M., RÜPPELL O. Effects of migratory beekeeping on longevity and oxidative stress. American Bee Journal, 154: 453.
- 2013 WAGONER K.M.*, BONCRISTIANI H.F., RÜPPELL O. Multifaceted responses to two major parasites in the honey bee (*Apis mellifera*). BMC Ecology, 13:26. DOI: 10.1186/1472-6785-13-26. PMCID: PMC3717026
- 2012 SACEY-MENSAH C.*, RÜPPELL O. Investigating intestinal stem cell proliferation rate as an indicator of honey bee (*Apis mellifera*) health. Integrative and Comparative Biology 52 S1, p. E151.
- 2009 RÜPPELL O. Aging of Social Insects. Book chapter in: "Organization of Insect Societies – From genomes to socio-complexity", J. Gadau & J. Fewell (eds.), Harvard University Press, pp. 51 – 73.
- 2008 RÜPPELL O. Ein Hoch dem Lernen in Akademischer Freiheit. 7th ed. in Perspektiven: Berufsbilder von und für Biologen, Biowissenschaftler und weitere Naturwissenschaftler. VDBiol, pp. 24-25.
- 2006 AMDAM G.V., RÜPPELL O. Models of aging in honeybee workers. Book chapter in: "Handbook of Models for Human Aging", P.M. Conn (ed.), Academic Press, San Diego, pp. 267-276.
- 2004 RÜPPELL O., AMDAM G.V., PAGE R.E., CAREY J.R. From genes to societies. Science Aging Knowledge Environment 2004 (5), pe5. PMCID: PMC2398693.

TEACHING AND MENTORING**CLASSROOM INSTRUCTION**

University of Würzburg: Animal Physiology Laboratory (1997 – 1999)

University of California at Davis: Animal Behavior (seminar, 2001 – 2002)
Introduction to Evolution (lecture, 2002)

University of North Carolina at Greensboro: Introduction to Biology (lecture and lab, 2003/2005)
Undergraduate Research (lab, 2004 – 2016)
Invertebrate Zoology (lecture and lab, 2004 – 2016)
Entomology (lecture and lab, 2004 – 2016)
Molecular Biological Approaches (seminar, 2005 – 2011)
Biology of Aging (lecture, 2007 – 2017)
Honors Work (2008 – 2015)
Phenotypic Plasticity (seminar, 2009)
Environmental Health Science I (guest lectures, 2011-2016)
Introduction to Graduate Studies (seminar, 2013-2016)
Animal Behavior (lecture, 2017)
Seminar in Environmental Health Science (2017)

POSTDOCS MENTORED

Mike Simone-Finstroem: “Honey bee stress and aging” (2011 – 2012)
Humberto Freire Boncristiani: “Functional genomics of IAPV infection in honey bees” (2011 – 2013)
Ming Huang: “Genetics of oxidative stress resistance in honey bees” (2012 – 2014)
Hongmei Li-Byarlay: “Genomic studies of oxidative stress resistance in honey bees” (2014 – 2017)
Bertrand Fouks: “Genomic studies of recombination and aging in honey bees” (2014 – 2015)
Esmaeil Amiri: “Stress responses and hormesis in honey bees” (2016 – current)
Kaira Wagoner: “Characterization and synthesis of chemicals to induce hygienic behavior in honey bees” (2016 – current)

GRADUATE STUDENTS MENTORED

Martina Beck: “Queen-size dimorphism in the Australian ant *Cyrtomyrma* sp.” (MSc: 1998 – 2000)
Kristen Ward: “A Study of Cellular Proliferation and Apoptosis in Short- and Long-lived Honey Bees, *Apis mellifera*.” (MSc: 2004 – 2006)
Emily Meznar: “Genomic Synteny and Comparison of Recombination between *A. mellifera* (the European Honey Bee) and *A. florea* (the Red Dwarf Honey Bee).” (MSc: 2007 – 2009)
Allie Graham: “The Genetic Architecture of Reproductive Differences in Workers of Africanized and European Honey Bees, *Apis mellifera*.” (MSc: 2007 – 2009)
Laura Willard: “Development and Analysis of Primary Cultures from the Midgut of the Honey Bee, *Apis mellifera*.” (MSc: 2008 – 2012)
Cordelia Sackey-Mensah: “The Effect of Xenobiotics on the Honeybee Adult Intestinal Stem Cell Proliferation.” (MSc: 2009 – 2012)
Ryan Kuster: “Expression Levels of Immune-genes in Developing Workers of *Apis mellifera* in Response to Reproductive Timing and Infestation Level by the Parasitic Mite *Varroa destructor*.” (MSc: 2010 – 2012)

Kaira Wagoner: “An Investigation of the Relationships Between Common Stressors, Brood-Signaling, Hygienic Behavior, and Selective Breeding in the Honey Bee (*Apis mellifera*)” (PhD: 2011 – 2015), UNCG Outstanding Dissertation Award & LaFage Award.

Kurt Langberg: “Testing the Effects of Oxidative Stress on Genomic Recombination in the Honey Bee, *Apis mellifera*.” (MSc: 2012 – 2014)

Katelyn Miller: “Construction and Fine-Scale Analysis of a High-Density, Genome-Wide Linkage Map to Examine Meiotic Recombination in the Honey Bee, *Apis mellifera*.” (MSc: 2012 – 2014)

Carlos Vega-Mendelez: “Effects of early developmental stress in *Apis mellifera*” (PhD: 2013 – current)

Wendy Zuluaga Smith: “Israeli Acute Paralysis Virus in *Apis mellifera* queens: Impact on colony role, transmission routes, and immune priming” (MSc: 2014 – 2016).

Taylor Reams: “Examining the factors influencing *Varroa destructor* host selection of *Apis mellifera* larvae” (MSc: 2016 – current)

Anissa Kennedy: “Improving stress resistance in honey bee workers through social manipulations” (MSc: 2016 – current)

Shilpi Bhatia: “Genetic basis of virus resistance in honey bees” (PhD: 2017 – current)

Prashant Waiker: “Recombination rate and genome evolution in social insects” (PhD: 2017 – current)

UNDERGRADUATE STUDENTS MENTORED

1.Rex Kirkman (2003 – 2004), 2.Oumar Seck (2003 – 2005), 3.Robyn Douglas (2004), 4.Caroline Mulcrone (2005), 5.Preston Gardner (2005 – 2006), 6.Kari Fine (2005 – 2006, Excellence Award), 7.Akuabata Kerns (2005 – 2006), 8.Anny Pena (2005 – 2006), 9.Dominique Buehler (2005 – 2006), 10.Lauren Groves (2006 – 2007), 11.Jennifer Coleman (2006 – 2008, Honor thesis), 12.Megan Wallrichs (2006 – 2008, Honor thesis), 13.Michael Munday (2006 – 2009, Honor thesis), 14.Robert Gove (2007), 15.Nels Johnson (2007), 16.Megan Leagon (2007), 17.Matthew Wilhelm (2007), 18.Miranda Hayworth (2007 – 2008, Excellence Award), 19.Javier Luzon (2007 – 2008), 20.Kaitlin Clinnin (2007 – 2008), 21.Nathan Ross (2008), 22.Ashley Hayes (2008 – 2009), 23.Stephen Brown (2009), 24.Ellen Lonon (2009), 25.Ryan Kuster (2009), 26.Dawit Adnew (2009), 27.Nicholas Arvanitis (2009), 28.Michelle McQuage (2009), 29.Danielle Lucas (2009 – 2010), 30.Luke Dixon (2009 – 2012, Excellence Award), 31.Stephen Meier (2010), 32.Candice Harrison (2011), 33.Tara McCray (2011), 34.Dominick DeFelice (2011 – 2014, Excellence Award, Honors thesis), 35.Bobbie Vannasane (2011 – 2013), 36.Kayla Jackson (2012), 37.Caitlin Ross (2012 – 2014, Excellence Award), 38.Francisco Belinchon (2012 – 2013), 39.Matthew Phillips (2012 – 2015), 40.Tiffany Fowler (2012 – 2016), 41.Babak Yousefi (2013 – 2016, Honors thesis), 42.Daniel Smith (2013 – 2015), 43.Juan Collazo (2013 – 2015), 44.Eli Thompson (2014), 45.Jasmine Everett (2014), 46.Basema Khan (2014), 47.Quinton Irby (2014 – 2015), 48.Ashley LaVere (2014), 49.Samantha McPherson (2015), 50.Greg Seddon (2015 – 2016), 51.Anissa Kennedy (2015), 52.Rachel Schomaker (2015), 53.Tinaye Mutetwa (2015 – 2017, Honors thesis, White Research Award), 54.Chelsea MaLyn Lawhorn (2015), 55.Sara Rubio-Correa (2015 – 2017, White Research Award), 56.Heeral Lakhani (2015 – 2016), 57. Katherina Santiago (2016), 58. Sherry Browne (2016), 59. Talia Heckman (2016), 60. Karen Funderburk (2016 – 2017), 61. Timothy Delory (2016), 62. Mustafa Noori (2017 – present), 63. Franco Abad (2017), 64. Antron Spooner (2017), 65. Taylor Pritchard (2017 – present), 66. Mark Rothermund (2017), 67. Samyra Blackeney (2017), 68. Christopher Reid (2017), 69. Saman Baral (2017 – present), 70. Kevin Le (2017 – present), 71. Erin Estes (2017), 72. Max McCall (2017 – present), 73. Chloe Simmons (2017 – present), 74. Foray Keita (2017 – present), 75. Kali Cox (2017 – present)

HIGH SCHOOL STUDENTS MENTORED

Patrick Nolan (2008), Fabian Gadau (2008), LeeAnn Chen (2010), Jennifer von Ende (2012), Yoav Yaacobi (2012), Zoe Schorr (2012), Sarah Schneid (2013), Nechama O’Brien (2013), Jemma Marcus-Shi (2014), Sarah Ribbs (2015).

GRADUATE THESIS COMMITTEES/EVALUATION:

- Angela Detweiler (MSc, “The Effects of Urbanization on the Food Web of the Mid-Order Stream in Rio de Janeiro, Brazil”, UNCG, 2004 – 2005)
- Amanda Killon-Atwood (MSc, “Evolution of mating isolation between populations of *Drosophila ananassae*.” UNCG, 2004 – 2005)
- Jackie Metheny (MSc, “A genetic analysis of the fission-fusion roosting behavior of tree-roosting maternity colonies of big brown bats (*Eptesicus fuscus*)” UNCG, 2006 – 2007)
- Austin Craven (MSc, “The impact of endoparasitic Wolbachia on the evolution of reproductive barriers during speciation in *Drosophila ananassae* from Southeast Asia and the South Pacific” UNCG, 2010 – 2013)
- Matthew Marshall (PhD, The Genetics of Thermal Plasticity in *Plantago lanceolata*” UNCG, 2011 – 2017)
- Bishwa Giri (PhD, “Analysis of Environmental and Genetic Basis of Life History Variation in the Evolutionary Model *Arabidopsis lyrata*” UNCG, 2012 – present),
- Ashton Trawinski (PhD, “Characterizing Ecdysteroid Titer Profiles and the Functional Role of Ecdysteroids in Adult Worker Honey Bees (*Apis mellifera*)” Wake Forest University, 2012 – 2016)
- Eckart Stolle (PhD, “Microsatellites – powerful tools for genome mapping and genome evolution – a case study on the insect *Bombus terrestris* and other social Hymenoptera”, Universität Halle-Wittenberg, 2013)
- Marcelo Schwarz-Giribaldi (PhD, “Landscape Eco-Epidemiology of the La Crosse Encephalitis Virus (CACV): The Role of Anthropogenic Land Use Change and Socio-Behavioral Risk Factors” UNCG, 2013 – present)
- Kim Yeoman (MSc, Effect of Dragonfly Nymph Presence and Conspecific Larvae Density on Oviposition Response of the Invasive Asian Tiger Mosquito (*Aedes albopictus*)” UNCG, 2013 – 2015),
- Daniel Greene (MSc, “The Establishment of a Behavioral Bioassay to Study *Lutzomyia verrucarum* Male Sex Pheromones Using *Lutzomyia longipalpis* as A Model Species.”UNCG, 2015 – 2016)
- Rojin Chitraker (MSc, Studies of Environmental Pollutant Acrolein-Induced Endothelial Dysfunction: The Role of Glutathione and NF-kappaB” UNCG, 2014 – 2015)
- Kurt Langberg (MSc, “Toxicological Analysis of the Neonicotinoid Insecticide Imidacloprid to Honey Bees, *Apis mellifera*, of Different Colonies” Virginia Tech, 2014 – 2016),
- Elizabeth du Rand (PhD, “Molecular mechanisms underlying xenobiotic tolerance in the honey bee, *Apis mellifera scutellata*”, University of Pretoria, 2014 – 2015)
- Yarira Ortiz-Alvarado (PhD, “Honey Bee Gut Microbiota and its effect on physiology and behavioral development”, University of Puerto Rico, 2014 – present)
- Nathalie Nida-Moske (PhD): “Epigenetics of *Cardiocondyla* alternative developmental trajectories” (2015 – present; Universität Regensburg, Germany)
- Robert Brown (MSc, “Impacts of *Corbicula fluminea* on methane cycle processes in stream sediments” UNCG, 2016 – present),
- Julia Giehr (PhD, “TBD”, University of Regensburg, 2016 – present)
- Jimmie Teague (MSc, “Does Lyme Disease Spread from Virginia into North Carolina: Surveillance of Ticks and *Borrelia burgdorferi* infection patterns (2016 – present)
- Michael Leshowitz (MA, “Development of Honesty in Repeated Signaling Games“, UNCG, 2017)
- Danielle Kowcich (MSc, “TBD”, UNCG, 2017 – present)
- James Withrow (PhD, “TBD”, NCSU, 2017 – present)
- Romain Dahan (PhD, “TBD”, Arizona State University, 2017 – present)

GOVERNANCE AND COMMITTEE WORK

- 2017** Faculty Search Committee, Department of Biology (Head)
- 2017** Faculty Senate Representative to the Sustainability Council

- 2017** UNCG Faculty Senator
- 2017** UNCG Departmental of Biology: Commencement Speaker
- 2016 – present** Member of UNCG’s GROWTH (Gerontology Research Outreach Workforce Teaching Hub)
- 2016** Gerontology Graduate Studies Prize Evaluation Committee, UNCG
- 2016 – 2017** Internal Research Grant Committee, UNCG
- 2016 – 2017** Review of Undergraduate Research and Creativity Awards, UNCG
- 2016** Annual Review and Merit committee, Department of Biology, UNCG
- 2016 – 2017** Scientific Advisory Board of UNCG’s Molecular Core Lab.
- 2016 = 2017** President of the International Union for the Study of Social Insects - North American Section
- 2015 – present** North American Pollinator Protection Campaign – Co-Chair of Honey Bee Health Task Force
- 2015 – 2016** Promotion and Tenure Guidelines Committee, UNCG
- 2014 – 2016** College of Arts and Science Promotion and Tenure Committee, Chair in 2015, UNCG
- 2014 – 2016** Department of Biology Personnel Committee, UNCG
- 2013 – 2016** Department of Biology Awards Committee, UNCG
- 2013 – 2017** Faculty Advisor for UNCG Student Dental Club
- 2014 – 2015** Research Excellence Awards Committee, UNCG
- 2014 – 2017** Global Engagement Implementation Advisory Committee, UNCG
- 2013 – 2015** Secretary of UNCG Sustainability Council
- 2013** Faculty Institute on Quality Enhancement Plan – “Global Engagement”
- 2012 – 2013** UNCG College of Arts and Science Budget and Planning Committee
- 2012 – 2013** UNCG Climate Action Plan – Academic Team
- 2011 – 2013** Board Member, American Association of Professional Apiculturists.
- 2011 – 2012** O’Brian Award Committee, Department of Biology, University of North Carolina, Greensboro.
- 2011 – present** UNCG Research Greenhouse Committee
- 2011 – 2012** Chair of the NAS-IUSSI Conference 2012, held in Greensboro, NC, 10/2012.
- 2010 – 2015** National Scientific Advisory Council, American Federation for Aging Research.
- 2007 – 2010** Enrollment Management Committee, University of North Carolina, Greensboro.
- 2006 – 2010** Undergraduate Research Assistantship Committee, University of North Carolina, Greensboro. (Chair 2009 - 2010)
- 2006 – 2008** PhD Program Planning Committee, Department of Biology, University of North Carolina, Greensboro (proposal approved 2009).
- 2006 – 2008** Guilford County Beekeeper Association, Board Member.
- 2005 – 2010** Gerontology Advisory Committee of the University of North Carolina, Greensboro.
- 2005 – 2007** Secretary/Chair of the Subsection Cb (Social Insects and Apiculture) of the Entomological Society of America.
- 2005 – 2006** Local Organization Committee for the South-Eastern Ecology, PopulAtion Genetics and Evolution Meeting, Greensboro, 2006.
- 2004 – 2010** International Program Center – Interview Task Force
- 2003 – 2005** Departmental Seminar Committee of the University of North Carolina, Greensboro.
- 2002** Postdoctoral Representative – Storer Life Sciences Committee of the University of California, Davis.
- 1998 – 2000** Radiation safety contact (Department of Zoology II, University of Würzburg).

1998 Graduate student representative for the revision of the curriculum for the degree programs in Biological Sciences, University of Würzburg, Germany.

OTHER PROFESSIONAL CONTRIBUTIONS AND QUALIFICATIONS

Associate Editor: “Behavioral Ecology and Sociobiology” (2008 - current)

Scientific Board: “Apidologie” (2018 – current)

Editorial Board: “PLoS ONE” (2013 - current)
“Open Longevity Science” (2011 - 2013)

Grant Reviewer for the US National Science Foundation: 2005 – 2016 (2 panels); US National Institutes of Health: 2012, 2014, 2015 (panel); US Department of Agriculture (Cooperative State Research, Education, and Extension Service): 2008 - 2017 (5 panels); American Federation for Aging Research: 2013; North American Pollinator Protection Campaign (2014-2016); United States – Israel Binational Agricultural Research and Development Fund: 2006, 2010; United States – Israel Binational Science Foundation: 2008, 2012; Belgian Federal Science Policy Office: 2006; French National Science Foundation: ANR (2010); Biotechnology and Biological Sciences Research Council (UK): 2010. German National Science Foundation: DFG (2013), NSERC Canada (2016).

Reviewer for the following scientific journals: African Journal of Agricultural Research, AGE, Aging Cell, Apidologie, Behavioral Ecology, Behavioral Ecology and Sociobiology, Biological Journal of the Linnean Society, Biological Reviews, Biology Letters, Biotechniques, BMC Biology, BMC Ecology, Bulletin of Insectology, Ecological Entomology, Economic Entomology, Evolution, Experimental Gerontology, Frontiers in Behavioral Neuroscience, Genetica, Genetics, Insectes Sociaux, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Journal of Apicultural Research, Journal of Heredity, Journal of Insect Behavior, Journal of Insect Science, Journal of the Kansas Entomological Society, Journal of Visualized Experiments, Molecular Ecology, Myrmecological News, Naturwissenschaften, Physiological and Biochemical Zoology, PlosOne, Proceedings of the Royal Society London, Quarterly Review of Biology, Science, Scientific Reports.

Textbook Reviewer for Oxford University Press (2008, 2009), Garland Science (2011, 2013), WW Norton & Company (2012)

Member of the following professional societies: "American Association for the Advancement of Science", "Entomological Society of America", "International Union for the Study of Social Insects", "Society for the Study of Evolution", "North Carolina Academy of Sciences", "North Carolina State Beekeepers Association", "American Association of Professional Apiculturists"

Conference Organization: Symposia at the International IUSI Meetings 2006 (Washington, DC), 2010 (Copenhagen, Denmark), and 2014 (Cairns, Australia) and the International AISC Meeting 2007; Meeting Organizer of the North Carolina Honey Bee Research Consortium (2005, 2010); Co-organizer of the South-Eastern Ecology, Population Genetics and Evolution Meeting 2006; Organizer of North – American Section IUSI 2012 Meeting, Co-organizer of symposium at the South-Eastern Branch meeting of the Entomological Society of America 2016. Co-organizer of the North American Section IUSI 2016 Meeting. Organizer of the Southern Appalachian Honey Bee Research Consortium (2017).

Event Organizer (Entomology) for the Science Olympiad (North Carolina: regional, 2004 – 2006, 2014 – 2015).

Diverse Entomological Outreach Activities (2003 – present).

CONFERENCE PRESENTATIONS (last 5 years)

2017 WAGONER K.M., RUEPPELL O., Chemical compounds that elicit hygienic behavior in the honey bee *Apis mellifera*. Entomology 2017, Denver, CO.

- 2017 **RUEPPELL O.**, Predictive behavioral demography: Do individual honey bee workers follow distinct trajectories in life? Entomology 2017, Denver, CO.
- 2017 LI-BYARLAY H., **RUEPPELL O.**, STRAND M., TARPY D., Social caste determination in honey bees via genome editing. Entomology 2017, Denver, CO.
- 2017 BARAL S., WAIKER P., **RUEPPELL O.**, TSURUDA J., Behavior of Honey Bees During the 2017 Great American Solar Eclipse. State of North Carolina Undergraduate Research and Creativity Symposium, Buies Creek, NC.
- 2017 PRITCHARD T., BHATIA S., BARAL S., VEGA-MELELENDEZ C., **RUEPPELL O.**, Viral resistance of honey bees, *Apis mellifera*. State of North Carolina Undergraduate Research and Creativity Symposium, Buies Creek, NC.
- 2017 OETTLER J., HEINZE J., **RUEPPELL O.**, KLEIN A., The influence of high recombination rate on genetic diversity in the invasive ant *Cardiocondyla obscurior*. 16th Congress of the European Society of Evolutionary Biology, Groningen, The Netherlands.
- 2017 NGUYEN H.N., **RUEPPELL O.**, ELSIK C.G., Chromosome level assembly of the *Apis dorsata* and *Apis florea* genome. 10th Arthropod Genomics Symposium, Notre Dame, IN.
- 2017 DELORY T., FUNDEBURK K., **RUEPPELL O.**, Exploration of genomic correlates to recombination rich regions. 100th Anniversary Mathematical Association of America Rocky Mountain Section Meeting, Pueblo, CO.
- 2017 FUNDERBURK K., DELORY T., **RUEPPELL O.**, Genomic recombination across six populations of *A. mellifera*. UNCG Undergraduate Research Expo, Greensboro, NC.
- 2017 WAGONER K., **RUEPPELL O.**, “Brood chemicals associated with common stressors and hygienic behavior.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 FUNDERBURK K., DELORY T., **RUEPPELL O.**, Genomic recombination across 6 populations of *A. mellifera*.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 REAMS T., **RUEPPELL O.**, “Examining the factors that influence *Varroa destructor* host selection of *Apis mellifera* larvae.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 AMIRI E., MEIXNER M., KRYGER P., STRAND M., TARPY D.R., **RUEPPELL O.**, “Trans-ovum or trans-ovarian: Deformed Wing Virus transmission mode from honey bee queens.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 KENNEDY A., **RUEPPELL O.**, “Improving stress resistance in honey bee workers through social manipulations.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 VEGA MELENDEZ C., **RUEPPELL O.**, “Transcriptomic responses to early developmental stress.” 13th Southern Appalachian Honeybee Research Consortium Symposium, Greensboro, NC.
- 2017 AMIRI E., SEDDON G., ZULUAGA PATRICIO W., STRAND M., TARPY D.R., **RUEPPELL O.**, “Israeli acute bee paralysis virus and the health of honey bee queens.” American Bee Research Conference, Galveston, TX.
- 2017 WAGONER K., **RUEPPELL O.**, “Hygienic response to natural and synthetic brood chemicals associated with common honey bee stressors.” American Bee Research Conference, Galveston, TX.
- 2016 **RUEPPELL O.**, Exceptional Recombination Rate Evolution in Honey Bees. The Spirit of the Hive: Mechanisms of Social Evolution Meeting, Tempe, AZ.
- 2016 **RUEPPELL O.**, The Dynamics of Israeli Acute Paralysis Virus in Honey Bees. North American Pollinator Protection Campaign Conference, Riverdale, MD.
- 2016 **RUEPPELL O.**, FOUKS, B, Comparative genomics in *Apis*. 25th International Congress of Entomology, Orlando, FL.
- 2016 VEGA-MELELENDEZ CJ (faculty mentor: **RUEPPELL O**) Effects of early developmental stress exposure on *Apis mellifera*. 25th International Congress of Entomology, Orlando, FL.
- 2016 **RUEPPELL O.**, The Potential for Multi-Trait Selection in the Honey Bee. 7th Eurbee Meeting, Cluj, Romania.

- 2016 MUTETWA T (faculty mentor: **RUEPPELL O**) Evolution of the Recombination System of Honey Bees. 11th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium, Clemson, SC.
- 2016 ZULUAGA-PATRICIO W (faculty mentor: **RUEPPELL O**) Transmission Routes and Immune Priming of Israeli Acute Paralysis Virus in Honey Bee Queens. 11th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium, Clemson, SC.
- 2016 FOWLER T (faculty mentor: **RUEPPELL O**) Preparing population comparisons of recombination rate in honey bees. 11th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium, Clemson, SC.
- 2016 RUBIO-CORREA S, **RUEPPELL O**, Extraordinary Genomic Recombination Rates Exist Throughout Honey Bee Species. 30th National Conference on Undergraduate Research, Asheville, NC.
- 2016 MUTETWA T, **RUEPPELL O**, Studies of the Recombination Machinery to Explain the Exceptional Recombination Rate in Honey Bees. 30th National Conference on Undergraduate Research, Asheville, NC.
- 2016 VEGA MELENDEZ C, KHAN B, SEDDON G, SMITH D., YOUSEFI B (FACULTY MENTOR: **RUEPPELL O**), Effects of early developmental stress on honey bees. *UNCG Graduate Research and Creativity Expo*, Greensboro, NC.
- 2016 LI-BYARLAY H., BONCRISTIANI H.F., STRAND M., TARPY D.R., **RUEPPELL O**, Transcriptomic and Methyloomic Analysis of Lethal IAPV Infection in Honey Bee Pupae. *Southeastern Branch Meeting of the Entomological Society of America*, Raleigh, NC.
- 2016 WAGONER K & **RUEPPELL O**, Hygienic Behavior in Honey Bees is Triggered by a Breed-Specific Brood Signal. *Southeastern Branch Meeting of the Entomological Society of America*, Raleigh, NC.
- 2016 ZULUAGA W, MCPHERSON S, KENNEDY A, **RUEPPELL O**, A survey of Israeli Acute Paralysis Virus in all levels of development of *Apis mellifera* and the impact of the virus on queens. *The American Association of Professional Apiculturists' 2016 American Bee Research Conference*, Jacksonville, FL.
- 2016 LI-BYARLAY H, SIMONE-FINSTROM M, HUANG MH, STRAND MK, **RUEPPELL O**, TARPY DR, Oxidative stress and survival of honey bees during the migratory management. *The American Association of Professional Apiculturists' 2016 American Bee Research Conference*, Jacksonville, FL.
- 2016 VEGA MELENDEZ (FACULTY MENTOR: **RUEPPELL O**), "The effects of early developmental stress on *Apis mellifera*. *The American Association of Professional Apiculturists' 2016 American Bee Research Conference*, Jacksonville, FL.
- 2016 WAGONER K & **RUEPPELL O**, Hygienic behavior of the honey bee (*Apis mellifera*) is influenced by breed-specific, damage-dependent brood signals. *The American Association of Professional Apiculturists' 2016 American Bee Research Conference*, Jacksonville, FL.
- 2015 LI-BYARLAY H, BONCRISTIANI, HF, TARPY DR, STRAND M, & **RUEPPELL O**, Transcriptomic analysis of lethal IAPV infection in honey bee pupae. *Annual Meeting of the Entomological Society of America*, Minneapolis, MN.
- 2015 LAWHORN ML, SCHOMAKER R, ROWELL J & **RUEPPELL O**. Comparative Analysis of Transcriptomic Data Accounting for Variation in Gene Flexibility, *Joint UNCG NCA&T REUs Minisymposium*, Greensboro.
- 2015 MILLER KJ, FOUKS B, ROSS C & **RUEPPELL O**, "Patterns of meiotic recombination in the honeybee *Apis mellifera*" *Cold Spring Harbor Laboratories Meeting on Biology and Genomics of Social Insects*, Cold Spring Harbor, NY.
- 2015 SU Y-C, SUPPASAT T, WARRIT N, **RUEPPELL O** & SMITH D, "Genetic isolation of two *Apis cerana* populations in Thailand revealed by genomic SNP data" *Cold Spring Harbor Laboratories Meeting on Biology and Genomics of Social Insects*, Cold Spring Harbor, NY.
- 2015 **RUEPPELL O**, FOUKS B, MILLER K, KUSTER R, PHIANCHAROEN M, KOENIGER N & TINGEK S, "Consistently exceptional – Genomic recombination rates in the genus *Apis*" *Cold Spring Harbor Laboratories Meeting on Biology and Genomics of Social Insects*, Cold Spring Harbor, NY.
- 2015 LI-BYARLAY H, BONCRISTIANI, HF, STRAND M, TARPY DR, & **RUEPPELL O**, "Transcriptomic analysis of lethal IAPV infection of honey bee pupae" *Cold Spring Harbor Laboratories Meeting on Biology and Genomics of Social Insects*, Cold Spring Harbor, NY.

- 2015 OETTLER J, KLEIN A, SCHRADER L, SCHREMPF A, **RUEPPELL O** & HEINZE J, "Kill your brother, date your sister – inbreeding and adaptation in *Cardiocondyla obscurior*" *Cold Spring Harbor Laboratories Meeting on Biology and Genomics of Social Insects*, Cold Spring Harbor, NY.
- 2015 YOUSEFI B, SMITH D, COLLAZO J, & **RUEPPELL O**, Behavioral and mortality changes in response to early life stress treatment. *9th Annual Carolyn & Norwood Thomas Undergraduate Research and Creativity Expo*, Greensboro, NC.
- 2015 IRBY Q, WAGONER K & **RUEPPELL O**, "Effects of silver nanoparticles on Deformed Wing Virus and Chalk Brood". *10th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Blacksburg, VA.
- 2015 DIXIT R, LI-BYARLAY H, STRAND M, **RUEPPELL O**, AND TARPY DR, "Selection variation of oxidative stress in drone honey bees". *10th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Blacksburg, VA.
- 2015 WAGONER K & **RUEPPELL O**, "Behavioral and molecular studies to enhance Varroa-specific hygienic behavior in the honey bee". *10th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Blacksburg, VA.
- 2015 COLLAZO J, SMITH D, YOUSEFI B & **RUEPPELL O**. "Investigations of selected responses to early-life stressors in *Apis mellifera* workers". *10th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Blacksburg, VA.
- 2015 VEGA-MENDELEZ C & **RUEPPELL O**. "Effects of early developmental stressors in honey bees". *10th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Blacksburg, VA.
- 2015 LI-BYARLAY H, HUNG M, STRAND M, TARPY D R. & **RUEPPELL O**, Effects of oxidative stress in the honey bee drones. *American Bee Research Conference.*, Tucson, AZ.
- 2015 WAGONER K & **RUEPPELL O**, Effects of steel foundation wire on chemical content and hygienic removal of honey bee (*Apis mellifera*) brood. *American Bee Research Conference.*, Tucson, AZ. (**Best Student Presentation Award**)
- 2014 LI-BYARLAY H, SIMONE-FINSTROM M, HUNG M, STRAND M, **RUEPPELL O**, & TARPY D R. Effects of honey bee management on oxidative stress and longevity. *62nd Annual Meeting of the Entomological Society of America*, Portland, OR.
- 2014 **RUEPPELL O**, MILLER K, KUSTER R, PHIANCHAROEN M, TINGEK S, KOENIGER N. Comparative genomic linkage mapping in *Apis*. *International Congress of the International Union for the Study of Social Insects*, Cairns, Australia.
- 2014 MILLER K, **RUEPPELL O**, JONES C, ROSS C. Analysis of a complete high-density recombination map of *Apis mellifera*. *International Congress of the International Union for the Study of Social Insects*, Cairns, Australia.
- 2014 LANGBERG K, **RUEPPELL O**, PHILLIPS M. Testing the Effects of Oxidative Stress on Genomic Recombination in the Honey Bee, *Apis mellifera*. *Evolution Meetings*, Raleigh, NC.
- 2014 **RUEPPELL O**, KUSTER R, MILLER K, PHAINCHAROEN M, TINGEK S, KOENIGER N. Exceptional Levels of Genome-Wide Recombination Extends to Novel Species in the Genus *Apis*. *Evolution Meetings*, Raleigh, NC.
- 2014 MILLER K, ROSS C, JONES C, **RUEPPELL O**. Fine-scale analysis of a genome-wide linkage map to examine meiotic recombination in the honey bee, *Apis mellifera*. *Evolution Meetings*, Raleigh, NC.
- 2014 SMITH D, **RUEPPELL O**, COLLAZO J, YOUSEFI B. Life history response to juvenile stress in *Apis mellifera*. *Evolution Meetings*, Raleigh, NC.
- 2014 **RUEPPELL O**. Aging plasticity, stress, and social behavior in the honey bee model. *American Aging Association 2014 Meeting*, San Antonio, TX.
- 2014 ROSS C, RYCHTAR J & **RUEPPELL O**. Long life and post-reproductive lifespan promote the evolution of cooperation. *American Aging Association 2014 Meeting*, San Antonio, TX.
- 2014 LANGBERG K & **RUEPPELL O**. Testing the effects of oxidative stress on the rate of genomic recombination in the honey bee *Apis mellifera*. *9th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Raleigh, NC.

- 2014** DEFELICE D, ROSS C & **RUEPPELL O.** Identifying genomic correlates of local recombination rates across eight honey bee linkage maps. *9th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Raleigh, NC.
- 2014** VEGA-MENDELEZ C & **RUEPPELL O.** Planning experiments to biodemographic responses to juvenile stress. *9th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Raleigh, NC.
- 2014** COLLAZO J, SMITH D, YOUSEFI B & **RUEPPELL O.** Behavioral and mortality changes in response to juvenile treatments. *9th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Raleigh, NC.
- 2014** MILLER K & **RUEPPELL O.** Construction and analysis of a high-density honey bee recombination map. *9th Annual Student and Postdoc Symposium of the Southern Appalachian Honey Bee Research Consortium*, Raleigh, NC.
- 2014** DEFELICE D. (FACULTY MENTOR: **O. RUEPPELL**) Geographic variation in polyandry of the Eastern Honey Bee supports division of labor hypothesis for multiple mating in social insects. *8th Annual Carolyn & Norwood Thomas Undergraduate Research and Creativity Expo*, Greensboro, NC.
- 2014** ROSS C. (FACULTY MENTOR: **O. RUEPPELL**) An investigation of genomic features affecting meiotic recombination rates in *Apis mellifera*. *8th Annual Carolyn & Norwood Thomas Undergraduate Research and Creativity Expo*, Greensboro, NC.
- 2014** YOUSEFI B. (FACULTY MENTOR: **O. RUEPPELL**) Behavioral and mortality changes in response to juvenile stress treatment. *8th Annual Carolyn & Norwood Thomas Undergraduate Research and Creativity Expo*, Greensboro, NC.
- 2013** ROSS C, DEFELICE D & **RUEPPELL O.** "An investigation of genome features and their effect on meiotic recombination rates in *Apis mellifera*." *NIMBioS Undergraduate Research Conference at the Interface of Biology and Mathematics*. Knoxville, TN.
- 2013** **RUEPPELL O.** & K. WAGONER. Interactions between *Varroa* mites and their honey bee hosts. *61st Annual Meeting of the Entomological Society of America*, Austin, Tx.
- 2013** HUANG M., M. SIMONE-FINSTROM, M. STRAND, D.R. TARPY, **O. RUEPPELL**. Drone-worker heritability of oxidative stress resistance in honey bees (*Apis mellifera*). *61st Annual Meeting of the Entomological Society of America*, Austin, Tx.
- 2013** SIMONE-FINSTROM M. M. HUNG, **O. RUEPPELL**, M. STRAND & D.R. TARPY. Management practices and honey bee stress: Effects of migratory beekeeping on longevity and oxidative stress. *61st Annual Meeting of the Entomological Society of America*, Austin, Tx.
- 2013** **RUEPPELL O.**, M. SIMONE-FINSTROM & D. DEFELICE. Comparative studies of mating and virus loads in multiple populations of the Eastern honey bee, *Apis cerana*. *61st Annual Meeting of the Entomological Society of America*, Austin, Tx.
- 2013** BONCRISTIANI H., **O. RUEPPELL** & M STRAND. Transcriptome analysis of honey bee (*Apis mellifera*) pupae in response to in-vitro infection with Israel Acute Paralysis Virus (IAPV). *61st Annual Meeting of the Entomological Society of America*, Austin, Tx.
- 2013** ROSS C, DEFELICE D & **RUEPPELL O.** "An investigation of genome features and their effect on meiotic recombination rates in *Apis mellifera*." *9th Annual University of North Carolina Greensboro Regional Mathematics and Statistics Conference*. Greensboro, NC
- 2013** **RUEPPELL O.** IAPV as a Model to Study Honey Bee Viruses. *13th Annual NAPPC International Conference*, Washington, DC.
- 2013** ROSS C. (FACULTY MENTORS: **O. RUEPPELL** & J. RYCHTAR). The effect of varying life stages on the evolution of altruism. *27th National Conference on Undergraduate Research*. La Crosse, WI.
- 2013** ZAPATERO BELINCHON F., K. WAGONER, H. BONCRISTIANI & **O. RUEPPELL**. *Apis mellifera* Brood and Virus Titers: a Quantification of Transmission Routes and mite-brood interaction of Deformed Wing Virus by *Varroa destructor*. *27th National Conference on Undergraduate Research*. La Crosse, WI.
- 2013** DEFELICE D.S. (FACULTY MENTOR: **O. RUEPPELL**) Geographic Variation in Polyandry of the Eastern Honey Bee Supports the Division of Labor Hypothesis for Multiple Mating in Social Insects. *North Carolina Academy of Sciences Meeting*, Pembroke, NC. (**2nd place: John Bowley Derieux Research Award**).

- 2013** VANNASANE B. (FACULTY MENTOR: **O. RUEPPELL**) Follow-up Studies on QTL for Ovary Size: Evaluating Sequence Variation in Two Long Non-Coding RNA Genes. *North Carolina Academy of Sciences Meeting*, Pembroke, NC.
- 2013** VANNASANE B. (FACULTY MENTOR: **O. RUEPPELL**) Follow-up Studies on QTL for Ovary Size: Evaluating Sequence Variation in Two Long Non-Coding RNA Genes. *7th UNCG Undergraduate Research Expo*, Greensboro, NC.
- 2013** ROSS C. & K. JACKSON (FACULTY MENTORS: **O. RUEPPELL** & J. RYCHTAR) The Effect of Life History Structures on the Evolution of Altruism. *7th UNCG Undergraduate Research Expo*, Greensboro, NC.
- 2013** DEFELICE D.S. (FACULTY MENTOR: **O. RUEPPELL**) Geographic Variation in Polyandry of the Eastern Honey Bee Supports the Division of Labor Hypothesis for Multiple Mating in Social Insects. *7th UNCG Undergraduate Research Expo*, Greensboro, NC.
- 2013** BONCRISTIANI H.F. & **RUEPPELL O.** Honey Bee Pupae Infection with IAPV In Vitro. *8th North Carolina Honey Bee Research Consortium Meeting*, Winston-Salem, NC.
- 2013** VANNASANE B. & **RUEPPELL O.** Follow-up Studies on QTL for Ovary Size: Evaluating Sequence Variation in Two Long Non-Coding RNA Genes. *8th North Carolina Honey Bee Research Consortium Meeting*, Winston-Salem, NC.
- 2013** DEFELICE D.S. & **RUEPPELL O.** Analysis of Geographic Variation in Mating Frequencies of the Eastern Honey Bee, *Apis cerana*. *8th North Carolina Honey Bee Research Consortium Meeting*, Winston-Salem, NC.
- 2013** WAGONER K. (FACULTY MENTOR: **O. RUEPPELL**) Behavioral and molecular studies to enhance hygienic behavior of honeybees (*Apis mellifera*) as a sustainable alternative to miticidal *Varroa* control. *American Bee Research Conference*, Hershey, PA. (**Best Student Presentation Award**).

SEMINARS AND WORKSHOPS (last 5 years)

- 2017** **RUEPPELL, O.**, KENNEDY A., AMIRI E., The Biology of the Honey Bee, Guilford County Beekeepers Association, Greensboro, NC.
- 2017** **RUEPPELL, O.** Introduction to Honey Bee Biology, Introductory Beeschool, Guilford County Beekeepers Association, Greensboro, NC.
- 2016** **RUEPPELL, O.** The Honey Bee Health Triangle: Mites, Viruses, and Stress. Invited Seminar, High Point University, NC.
- 2016** **RUEPPELL, O.** Saving the Honey Bees, Bayer Bee Care Center, Research Triangle Park, NC.
- 2016** **RUEPPELL, O.** Introduction to Honey Bee Biology, Introductory Beeschool, Guilford County Beekeepers Association, Greensboro, NC.
- 2015** **RUEPPELL, O.** Consequences of Honey Bee Social Evolution. Invited Seminar, Virginia Polytechnical University, VA.
- 2015** **RUEPPELL, O.** First steps to beekeeping, New Beekeepers Seminar, Guilford County Beekeepers Association, Greensboro, NC.
- 2014** **RUEPPELL, O.** Mechanisms and Consequences of Social Evolution in Honey Bees. Invited Seminar, University of Regensburg, Germany.
- 2014** **RUEPPELL, O.** Advanced Sociality in Honey Bees: A Potential Evolutionary Route and Consequences. Invited Seminar, Institute for Science and Technology, Klosterneuburg, Austria.
- 2014** **RUEPPELL, O.** Genomic studies to understand social evolution and health of honeybees. Invited Seminar, University of Oldenburg, Germany.
- 2012** **RUEPPELL, O.** A three-pronged approach to study honey bee – *Varroa* mite interactions USDA – NIFA PD Workshop, Oak Ridge, TN.
- 2012** **RUEPPELL, O.** The genetic architecture of the pollen hoarding syndrome confirms the reproductive ground plan of social evolution. Dept. of Genetics, North Carolina State University, Raleigh, NC.
- 2012** **RUEPPELL, O.** An Update on the UNCG Honey Bee Research Program, Rockingham Beekeepers Association.
- 2012** **RUEPPELL, O.** The genetics of the pollen hoarding syndrome confirms the reproductive ground plan of social evolution. Dept. of Entomology, North Carolina State University, Raleigh, NC.