OLAV RUEPPELL

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EDUCATION, POSITIONS AND EMPLOYMENT

2020 – current Professor of Biology
Department of Biological Sciences, University of Alberta, Edmonton, Canada
2024 – current Member of the Li Ka Shing Institute of Virology
2020 – 2026 Adjunct Professor of Biology
Department of Biology, University of North Carolina, Greensboro, USA
2019 – 2020 Florence Schaeffer Distinguished Professor of Science
Department of Biology, University of North Carolina, Greensboro, USA
2013 – 2018 Professor of Biology
Department of Biology, University of North Carolina, Greensboro
2011 Visiting Scholar at the National Evolutionary Synthesis Center, USA
2008 – 2013 Associate Professor of Biology
Department of Biology, University of North Carolina, Greensboro, USA
2003 – 2008 Assistant Professor of Biology
Department of Biology, University of North Carolina, Greensboro, USA
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, USA (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
University of Würzburg, Germany (advisors: Prof. B. Hölldobler, Prof. J. Tautz)

HONORS, AWARDS, AND SCHOLARSHIPS

2026 University of Alberta's Faculty of Science Equity, Diversity and Inclusivity Award (awarded to the EDI Committee of the Department of Biological Sciences)
2021 American Association for the Advancement of Science (AAAS) Elected Fellow
2020 UNCG Senior Research Excellence Award
2019 Elected UNCG Sustainability Faculty Fellow (2019/20)
2018 James I. Hambleton Memorial Award from the Eastern Apicultural Society of North America
2016 UNCG Thomas Undergraduate Research Mentor Award
2015 Mid-Career Mentoring Award – Division of Biology of the Council on 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.
2001 – 2002 Post-doctoral Feodor-Lynen Fellowship of the Alexander-von-Humboldt Foundation
1998 – 2000 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 Dissertation Scholarship of the German Science Foundation: (declined in 1998).

PATENTS

2023 Wagoner K.M. & Rueppell O. "Synergistic mixture for inducing hygienic behavior in honey bees, and related compositions and methods". US Patent No 11,559,045, publication date: 2022/1/27.

2020 Wagoner K.M. & Rueppell O. "Methods and Compositions for Inducing Hygienic Behavior in Honey Bees." US Patent No 10,524,455.

2019 Wagoner K.M. & Rueppell O. "Methods and Compositions for Inducing Hygienic Behavior in Honey Bees." US Patent No 10,512,251.

GRANTS AND CONTRACTS

(57) 2026-2029: "*Honey bee viruses: Understanding their virulence, transmission and management practices*" (2026F4299R), Agricultural Funding Consortium, PI (CAD 243,400)

(56) 2025-2026: "*Optimizing plant extracts to control Varroa mites and sustainably improve honey bee health*", Apisave Bee Health Science Inc., PI (CAD 35,880)

(55) 2025-2026: "*Towards understanding the conditional pathogenicity of black queen cell virus"*, North American Pollinator Protection Campaign, PI (USD 10,000)

(54) 2025-2026: "*Fission-fusion apiculture to build healthy honey bee colonies*", Pollinator Partnership Canada, PI (CAD 24,800)

(53) 2025-2026: "*Mortality effects of naturally occurring virus mixtures on honey bees*", North American Pollinator Protection Campaign, PI (USD 10,000)

(52) 2024-2025: *"Comparing different application methods for Apisave in Apiariums*", Nature Recombined Sciences Inc., PI (CAD 12,350)

(51) 2024-2027: *"Optimization trials to improve efficacy and safety of two novel Varroacides*" (2024F2208R), PI, Agricultural Funding Consortium (CAD 867,452)

(50) 2024-2027: "*Optimization trials to improve efficacy and safety of two novel Varroacides – Industry support*", Alberta Beekeepers Commission, PI (CAD 140,000)

(49) 2024-2025: "*Social immunity and the queen's retinue*" North American Pollinator Protection Campaign, PI (USD 10,000)

(48) 2023 – 2025: "*Understanding the Virome, Transcriptome, and Host Responses of Tropilaelaps clareae across Apis spp.*", Project ApisM, PI (USD 63,480)

(47) 2023-2024: "Labo*ratory screening honey bees for toxic effects of a potential plant-based Varroacide*", Nature Recombined Sciences Inc., PI (CAD 140,030)

(46) 2023 – 2024: "*The Effects of Maternal IAPV Vaccination on Apis mellifera Offspring*", North American Pollinator Protection Campaign, PI (USD 9,839)

(45) 2022 – 2025: "*Differential Resource Allocation and Stress Resistance*", (W911NF2210195) PI (Co-PI: M. Strand, US Army), US Army Research Office (USD 149,084)

(44) 2022 – 2024: "*Developing New Miticides for Varroa destructor Control in Honey Bees"* Results Driven Agriculture Research, 2022N093R, PI (CAD 499,968)

(43) 2022 – 2027: "*Individual Life History Adaptation in the Social Context of the Honey Bee Colony*". Natural Sciences and Engineering Research Council of Canada, RGPIN-2022-03629, PI (CAD 200,000)

(42) 2022 – 2023: "*High Throughput Honey Bee Biology and Health Studies*", Canada Foundation for Innovation (#41861), PI (CAD 100,000)

(41) 2022 – 2023: "*High Throughput Honey Bee Biology and Health Studies"*, Research Capacity Program of the Province of Alberta (RCP-22-020-SEG), PI (CAD 81,522)

(40) 2022 – 2025: *"Assessing Molecular, Individual, and Colony Markers of Local and Imported Stocks to Improve Honey Bee Health in Alberta"* 2022F145R, Agricultural Funding Consortium, PI (CAD 460,267)

(39) 2020 – 2022: "*Support of Honey Bee Research at the University of Alberta by the Alberta Beekeepers Commission*", Alberta Beekeepers Commission, PI (CAD 28,000)

(38) 2020 – 2021: "*Dynamics of Israeli Acute Paralysis Virus Infection within Honey Bees*" (AP20PPQS&T00C014) USDA-APHIS, PI (USD 33,058)

(37) 2019 – 2022: "*The Impact of Body Size on Resilience in Apis mellifera*", (W911NF1920161) PI (Co-PI: M. Strand, US Army), US Army Research Office (USD 49,684)

(36) 2018 – 2021: "*Characterization of the Architecture of Hygienic Behavior of Honeybees to Enable Breeding for Improved Honeybee Health*" (IS-5078-18) Binational Agricultural Research and Development Fund, Co-PI (USD 164,000)
(35) 2018 – 2019: "*Supporting U.S. Agriculture by Participation of Early Career Scientists in the 18th International Congress of the International Union for the Study of Social Insects in Guarujá, Brazil*" (2018-67013-28542), USDA-NIFA, PI (USD 25,000)
(34) 2018 – 2019: "*Virus Infection in Honey Bee Colonies: Infection Dynamics and Social Immunity*" (18-8130-0636-CA) USDA-APHIS, PI (USD 34,327)
(33) 2018: "*Climate Control Rooms for Extending Research Capabilities at the UNCG Plant and Pollinator Center*" (72180-LS-RIP), US Army Research Office, PI (USD 254,844)
(32) 2018 – 2019: "*Building a Computational and Data Infrastructure for Exploring Honey Bee Diseases via Text Mining of Scientific Literature"*. UNCG Giant Steps Research Grant, Co-PI (USD 25,000)
(31) 2017 – 2021: "*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 (USD 999,319)
(30) 2017 – 2018: "*Immune Consequences of Virus Infection in Honey Bee Queens*" (17-8130-0636-CA), USDA-APHIS, PI (USD 32,221)
(29) 2017 – 2018: "*Comparative Characterization of Virus Content and Resistance in Genetic Lines of US Honey Bees*" PI, Project ApisM – Healthy Hives 2020 (USD 53,269)
(28) 2017 – 2019: "*REU Site: Mathematical Biology at the University of North Carolina at Greensboro*" (DMS #1659646), NSF, Co-PI, (USD 304,959)
(27) 2017 – 2018: "*Understanding Semiochemical Tools for Natural Varroa Control*." PI, National Honey Board / Project ApisM (USD 56,453)
(26) 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, (USD 68,627)
(25) 2016: "*Israeli Acute Paralysis Virus in Honey Bee Queens: Health Impact, Transmission Routes, and Immune Priming*". USDA-APHIS, PI, (USD 10,089)
(24) 2016: "*Monitoring social foraging behavior in a biological model system*" (W911NF1610233 / 68551LSRIP) Army Research Office, PI, (USD 69,000)
(23) 2016: "*Immunologically structured societies*". Triangle Center for Evolutionary Medicine, Co-PI (PI: Seth Barribeau, East Carolina University), (USD 20,000)
(22) 2015 – 2020: "*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 (USD 319,011)
(21) 2015: "*Investigation of the unsaturated hydrocarbon linked to Varroa, DWV, and hygienic behavior in the honey bee (Apis mellifera)"*, Co-PI, Project ApisM (USD 24,835)
(20) 2015: "*Effects of Steel Foundation Wire on Hygienic Removal and Chemical Content of Apis mellifera Brood*", Project ApisM, PI, (USD 7,662)
(19) 2014 – 2017: "*REU Site: Mathematical Biology at the University of North Carolina at Greensboro"* (DMS #1359187), NSF, Faculty Mentor, (USD 275,952)
(18) 2013 – 2015: *"Biodemography and Genomics of Aging Trajectories and Plasticity in a Social Model*" R21AG046837, NIH-NIA, PI, (USD 287,000)
(17) 2013 – 2016: *"Behavioral and molecular studies to enhance Varroa-specific hygienic behavior of honeybees (Apis mellifera)*", Project ApisM, PI, (USD 15,000)
(16) 2013 – 2014: *"Identification of IAPV Replication Sites in Honey Bees".* North American Pollinator Protection Campaign, PI, (USD 5,600)
(15) 2012 – 2016: *"Genomic Analyses of Intraspecific Patterns of Extreme Recombination in Honey Bees*" (R15GM102753), NIH-NIGMS. PI, (USD 287,000)
(14) 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, (USD 5,000)

(13) 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), (USD 410,631)
(12) 2010 – 2014: *"FASE: Genetic Characterization of Absolute Varroa Mite Resistance in Honey Bees"* (#2010-65104-20533), PI, United States Department of Agriculture – NIFA (USD 449,988).
(11) 2009 – 2013: *"UBM Group: Mathematical and Biological Undergraduate Research Training at UNCG*" (DBI #0926288), Co-PI (PI: J. Rychtar, UNCG), National Science Foundation (USD 233,820).
(10) 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 (USD 75,000)
(9) 2009 – 2011: *"REU Site: Interdisciplinary Quantitative Science REU at UNCG*" (#0850465), Faculty Mentor (PI: M. Crowe, UNCG), National Science Foundation (USD 182,766).
(8) 2008 – 2009: *"Nutritional Effects on Intestinal Health and Longevity of Honey bee Workers"*, PI, North American Pollinator Protection Campaign (USD 7,500).
(7) 2007 – 2008: *"Comparative Genome Analysis of the Giant Honeybee (Apis dorsata)*" PI, Faculty Research Grant, UNC Greensboro (USD 5,000).
(6) 2006 – 2010: *"RUI: Genetic Dissection of the Reproductive Ground-Plan Hypothesis of Social Evolution*" (IOS #0615502), PI, National Science Foundation (USD 369,265).
(5) 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 (USD 239,835).
(4) 2005 – 2007: *"Mitosis and Apoptosis in Relation to Lifespan in the Honey Bee (Apis mellifera L.)*", PI, American Federation of Aging Research (USD 54,911).
(3) 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 (USD 93,414).
(2) 2003 – 2004: *"Genomic Localization of Genetic Markers for the Behavioral Maturation of Honey Bee Workers*" PI, New Faculty Grant, UNC Greensboro (USD 5,000).
(1) 2002 – 2003: *"Senescence and Biodemography of the Honey Bee"*, Centre on the Economics and Demography of Aging, Pilot Grant (USD 9,600).

LEADERSHIP, GOVERNANCE AND COMMITTEE WORK

2026 – 2028 Local Organizing Committee for the 2028 Meeting of the Canadian Society for Ecology and Evolution (Indigenous Collaboration, Volunteer Coordination)
2025 – 2028 Frontiers in Biology Committee, Department of Biological Sciences, University of Alberta
2025 – present Tropilaelaps Committee of the Canadian Association of Professional Apiculturists
2024 – 2026 Science faculty liaison for the Indigenous in STEM Students Association, University of Alberta
2024 – 2026 Safety Committee, Department of Biological Sciences, University of Alberta
2024 Campus Sustainability Grant adjudicator, University of Alberta
2023 – 2026 Academic Director of Research, Department of Biological Sciences, University of Alberta
2023 – 2026 Executive Committee Member, Department of Biological Sciences, University of Alberta
2023 – 2025 *Tropilaelaps* Risk Assessment Task Force, Canadian Honey Council
2023 – 2026 Alberta Beekeepers Commission Tech Team Steering Committee member
2022 Academic Representative for the Safety Strategy Advisory Committee, University of Alberta
2022 Reviewer of Undergraduate Research Initiative applications, University of Alberta
2021 – present Research Committee of the Canadian Association of Professional Apiculturists (chair 2023 – present)
2021 – 2026 Committee on Equity, Inclusion and Diversity, Department of Biological Sciences, University of Alberta (ex-officio member since 2023)
2021 – 2023 Graduate Student Admissions & Awards Committee, Department of Biological Sciences,

	University of Alberta
2021 – 2026	Faculty of Science representative to the Faculty of Agricultural, Life and Environmental Sciences Council, University of Alberta
2021 – 2024	Awards Committee, International Union for the Study of Social Insects - North American Section (co-chair 2023-2024)
2021, '23, '25	R.E. Peter Conference student presentation judge, University of Alberta
2020 – 2023	Courses and Curriculum Committee, Department of Biological Sciences, University of Alberta
2020 – 2022	Alberta Farm Animal Care – Bee Project Expert Panel
2019 – 2021	HymenopteraMine Advisory Group
2019 – 2020	Department of Biology Advisory Committee, UNCG
2019 – 2020	Faculty Awards Nomination Committee, UNCG
2018 – 2019	Faculty Search Committee – Large-Scale Ecology, Department of Biology, UNCG (Head)
2018 – 2019	University Promotion and Tenure Committee, UNCG
2018 – 2020	North Carolina Pollinator Conservation Alliance
2018 – 2019	Faculty Peer Mentor for Assistant Professor Dr. Kasie Rayman
2017 – 2020	STAMPS Faculty Mentor, UNCG
2017	Faculty Search Committee - Neurobiology, Department of Biology, UNCG (Head)
2017 – 2020	Faculty Senate Representative to the Sustainability Council, UNCG
2017 – 2020	Faculty Senator, UNCG
2017	Commencement Speaker, Departmental of Biology, UNCG
2016 – 2020	Member of UNCG's GROWTH (Gerontology Research Outreach Workforce Teaching Hub)
2016	Gerontology Graduate Studies Prize Evaluation Committee, UNCG
2016 – 2018	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 – 2018	Faculty Peer Mentor for Assistant Professor Dr. Ramji Bhandari
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 – 2023	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, UNCG (Chair in 2015)
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 (Member)
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, UNCG
2011 – 2021	UNCG Research Greenhouse Committee (Chair 2017-18)
2011 – 2012	Chair of the NAS-IUSSI Conference 2012, held in Greensboro, NC, 10/2012.
2010 – 2018	National Scientific Advisory Council, American Federation for Aging Research.

2007 – 2010 Enrollment Management Committee, UNCG

2006 – 2010 Undergraduate Research Assistantship Committee, University of North Carolina, Greensboro. (Chair 2009 - 2010)

2006 – 2008 PhD Program Planning Committee, Department of Biology, UNCG (proposal approved 2009)

2006 – 2008 Guilford County Beekeeper Association, Board Member

2005 – 2010 Gerontology Advisory Committee, UNCG

2005 – 2007 Secretary/Chair of the Subsection Cb (Social Insects and Apiculture) of the Entomological Society of America.

2004 – 2010 International Program Center – Interview Task Force (Member)

2003 – 2005 Departmental Seminar Organizer, UNCG

2002 Postdoctoral Representative – Storer Life Sciences Committee, University of California, Davis.

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

OTHER PROFESSIONAL CONTRIBUTIONS

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

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

Grant Reviewer for the US National Science Foundation: 2005 – 2018 (3 panels); US National Institutes of Health: 2012, 2014, 2015 (panel); US Department of Agriculture: 2008 - 2018 (5 panels); American Federation for Aging Research: 2013; North American Pollinator Protection Campaign (2014-2022); United States – Israel Binational Agricultural Research and Development Fund: 2006, 2010, 2020; United States – Israel Binational Science Foundation: 2008, 2012, 2018; Belgian Federal Science Policy Office: 2006; French National Science Foundation: ANR (2010); Biotechnology and Biological Sciences Research Council (UK): 2010, 2020, 2021. German National Science Foundation: 2013, 2021, 2023, 2024; NSERC Canada (2016, 2023), Canada Foundation for Innovation (2021, 2024), Alberta Conservation Association (2021, 2022), Results Driven Agricultural Research (2022), Canadian Bee Research Fund (2023, 2024).

Reviewer for the following scientific journals: African Journal of Agricultural Research, AGE, Aging Cell, Animal Genetics, Apidologie, Behavioral Ecology, Behavioral Ecology and Sociobiology, Biological Journal of the Linnean Society, Biological Reviews, Biology Letters, Biotechniques, BMC Biology, BMC Ecology, BMC Genomics, Bulletin of Insectology, Communications Biology, Current Biology, Current Opinion in Insect Science, Ecological Entomology, Economic Entomology, eLife, Evolution, Experimental Gerontology, Frontiers in Behavioral Neuroscience, Frontiers in Genetics, Genetica, Genetics, Genome Biology & Evolution, Insectes Sociaux, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Insects, iScience, Journal of Apicultural Research, Journal of Comparative Physiology B, Journal of Experimental Biology, Journal of Heredity, Journal of Insect Behavior, Journal of Insect Physiology, Journal of Insect Science, Journal of Invertebrate Pathology, Journal of the Kansas Entomological Society, Journal of Visualized Experiments, Microbiome, Molecular Ecology, Molecular Biology and Evolution, Myrmecological News, Nature Communications, Philosophical Transactions of the Royal Society B, Physiological and Biochemical Zoology, PLoS ONE, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society B, Quarterly Review of Biology, Science, Science Advances, Science of Nature (Naturwissenschaften), Science of the Total Environment, Scientific Reports, Trends in Biotechnology.

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", "North American Pollinator Protection Campaign", "Entomological Society of Canada", "International Union for the Study of Social Insects", "COLOSS Honey Bee Research Association", "Canadian Association of Professional Apiculturists", Entomological Society of Alberta, Canadian Society for Ecology and Evolution.

Conference Organization: Meeting organizer of the North American Section IUSSI Meeting (2012), the North Carolina Honey Bee Research Consortium (2005, 2010), and the Southern Appalachian Honey Bee Research Consortium (2017). Meeting co-organizer of the Cold Spring Harbor Meeting on Biology & Genomics of Social Insects (2021, 2024), the South-Eastern Ecology, PopulAtion Genetics and Evolution Meeting (2006), and the North American Section IUSSI Meeting (2016). Co-organizer of symposia at the Entomological Society of Canada Meeting (2025), the International IUSSI Meetings 2006 (Washington, DC), 2010 (Copenhagen, Denmark), 2014 (Cairns, Australia), and 2022 (San Diego, USA), the International AISC Meeting (2007), and the South-Eastern Branch Meeting of the Entomological Society of America (2016), Entomological Society of Canada (2025): Symposium organizer and student awards committee).

Event Organizer for the Science Olympiad (North Carolina: regional, 2004 – 2006, 2014 – 2015, 2019).

Diverse Entomological Outreach Activities (2003 – present).

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, 2003/2005/2019) Undergraduate Research (lab, 2004 – 2020) Invertebrate Zoology (lecture and lab, 2004 – 2016) Entomology (lecture and lab, 2004 – 2019) Molecular Biological Approaches (seminar, 2005 – 2019) Biology of Aging (lecture, 2007 – 2018) Honors Work (2008 – 2018) Phenotypic Plasticity (seminar, 2009) Environmental Health Science I (guest lectures, 2011-2019) Introduction to Graduate Studies (seminar, 2013-2016) Animal Behavior (lecture, 2017 – 2020) Seminar in Environmental Health Science (2017)
University of Alberta:	Mechanisms of Evolution (2022 – 2026) Graduate Seminar in Advanced Ecology (2022, 2023) Ecological and Evolutionary Genomics (2022-2025) Research Opportunity (2021 – 2025) Research Project (2021 – 2025)

POSTDOCS MENTORED

1. Mike Simone-Finstroem: "Honey bee stress and aging" (2011 – 2012)
2. Humberto Freire Boncristiani: "Functional genomics of IAPV infection in honey bees" (2011 – 2013)
3. Ming Huang: "Genetics of oxidative stress resistance in honey bees" (2012 – 2014)
4. Hongmei Li-Byarlay: "Genomic studies of oxidative stress resistance in honey bees" (2014 – 2017)

5. Bertrand Fouks: "Genomic studies of recombination and aging in honey bees" (2014 – 2015)
6. Kaira Wagoner: "Chemical ecology of hygienic behavior in honey bees" (2016 – 2021)
7. Esmaeil Amiri: "Viruses, stress responses and hormesis in honey bees" (2016 – 2021)
8. Alexander Walton: "Behavior and energetics of honey bee life history evolution (2022 – 2025)
9. Yosef Hamba Tola: "Optimization of the honey bee gut microbiome (2022 – 2025)

GRADUATE STUDENTS MENTORED

1. Martina Beck: "Queen-size dimorphism in the Australian ant *Cyrtomyrma* sp." (MSc: 1998 – 2000)
2. Kristen Ward: "A Study of Cellular Proliferation and Apoptosis in Short- and Long-lived Honey Bees, *Apis mellifera*." (MSc: 2004 – 2006)
3. 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)
4. Allie Graham: "The Genetic Architecture of Reproductive Differences in Workers of Africanized and European Honey Bees, *Apis mellifera*." (MSc: 2007 – 2009)
5. Laura Willard: "Development and Analysis of Primary Cultures from the Midgut of the Honey Bee, *Apis mellifera*." (MSc: 2008 – 2012)
6. Cordelia Sackey-Mensah: "The Effect of Xenobiotics on the Honeybee Adult Intestinal Stem Cell Proliferation." (MSc: 2009 – 2012)
7. 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)
8. 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.
9. Kurt Langberg: "Testing the Effects of Oxidative Stress on Genomic Recombination in the Honey Bee, *Apis mellifera*." (MSc: 2012 – 2014)
10. 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)
11. Carlos Vega-Melendez: "Effects of early developmental stress in *Apis mellifera*" (PhD: 2013 – 2019)
12. Wendy Zuluaga Smith: "Israeli Acute Paralysis Virus in *Apis mellifera* queens: Impact on colony role, transmission routes, and immune priming" (MSc: 2014 – 2016).
13. Taylor Reams: "Examining the Factors Influencing *Varroa destructor* Host Selection of *Apis mellifera* Larvae" (MSc: 2016 – 2018)
14. Anissa Kennedy: "Increased Stress Resistance in Socially Manipulated Honey Bee (*Apis mellifera*) Workers" (MSc: 2016 – 2018)
15. Prashant Waiker: "Recombination rate and genome evolution in social insects" (PhD: 2016 – 2022)
16. Phoebe Snyder: "The effect of group size on hygienic performance in honey bees" (MSc: 2018 – 2020)
17. Jacob Herman: "Variation in honey bee worker size" (PhD: 2018 – current)
18. Robert XinZhi Lu: "Evaluation of the efficacy of the novel varroacide 1-allyloxy-4-propoxybenzene, and assessment of sublethal exposure on honey bee and Varroa destructor gene expression" (MSc: 2021 – 2024), NSERC CGS-M Scholarship, Alberta Innovates Scholarship
20. Prabashi Manuja Wickramasinghe: "Molecular basis of IAPV pathogenesis and antiviral immune response in *Apis mellifera*" (PhD: 2022 – current), AGES scholarship, Entomological Society of Canada MSc Award.

21. Gursimran Toor: "Colony-level genomic studies of complex social phenotypes of honey bees" (MSc: 2023 – 2025)
22. Ajay Poudel: Antiviral properties of plant compounds (MSc: 2025 – current)
23. Claudia Garcia Figueroa: Genomic study of brood signals in honey bees (PhD: 2025 – current), Costco-PAm Scholarship
24. Lindsay Ellis: Fission-fusion apiculture in Alberta (MSc: 2025 – current)
25. Chenoa Kaufman: Molecular investigation of black queen cell virus virulence patterns and mechanisms (MSc: 2025 – current), NSERC CGS-M Scholarship

UNDERGRADUATE HONOURS THESES

1. Jennifer Coleman: "Intestinal stem cell replication in reproductive workers" (2006-2008)
2. Megan Wallrichs: "Behavioral QTL effects on ovary size support the reproductive groundplan hypothesis" (2006-2008)
3. Michael Munday: "Ovary size variation in Russian honey bees" (2007-2009)
4. Dominick DeFelice: "Geographic variation in mating number of *Apis cerana*" (Excellence Award; 2011-2012)
5. Babak Yousefi: "Longevity and aging responses to juvenile stress treatments in *Apis mellifera*" (2014-2016)
6. Tinaye Mutetwa: "Studies of the recombination machinery to explain the exceptional recombination rate in honey bees" (White Research Award; 2016-2017)
7. Saman Baral: "Examining the relationship between Israeli acute paralysis virus susceptibility and vitellogenin from various genotypes of *Apis mellifera*" (2017-2018)
8. Asia Brannon: "The dynamics of immune responses to viruses in honey bees, *Apis mellifera*" (2019-2020; Excellence Award)
9. Chenoa Kaufman: "Black queen cell virus pathogenicity across honey bee castes" (2023 – 2025, multiple awards, including NSERC-USRA, URI, Lieutenant-Governors Gold Medal, The Governor General's Silver Medal)
10. Travis Murray: "Virulence of naturally occurring honey bee virus mixtures" (2024 – 2025, NSERC-USRA award)
11. Andrea Wong: "Developmental mechanisms of honey bee body size" (2024 – 2025)

ADDITIONAL 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.Robert Gove (2007), 12.Nels Johnson (2007), 13.Megan Leagon (2007), 14.Matthew Whilhelm (2007), 15.Miranda Hayworth (2007 – 2008, Excellence Award), 16.Javier Luzon (2007 – 2008), 17.Kaitlin Clinnin (2007 – 2008), 18.Nathan Ross (2008), 19.Ashley Hayes (2008 – 2009), 20.Stephen Brown (2009), 21.Ellen Lonon (2009), 22.Ryan Kuster (2009), 23.Dawit Adnew (2009), 24.Nicholas Arvanitis (2009), 25.Michelle McQuage (2009), 26.Danielle Lucas (2009 – 2010), 27.Luke Dixon (2009 – 2012, Excellence Award), 28.Stephen Meier (2010), 29.Candice Harrison (2011), 30.Tara McCray (2011), 31.Bobbee Vannasane (2011 – 2013), 32.Kayla Jackson (2012), 33.Caitlin Ross (2012 – 2014, Excellence Award), 34.Francisco Belinchon (2012 – 2013), 35.Matthew Phillips (2012 – 2015), 36.Tiffany Fowler (2012 – 2016), 37.Daniel Smith (2013 – 2015), 38.Juan Collazo (2013 – 2015), 39.Eli Thompson (2014), 40.Jasmine Everett (2014), 41.Basema Khan (2014), 42.Quinton Irby (2014 – 2015), 43.Ashley LaVere (2014), 44.Samantha McPherson (2015), 45.Greg Seddon (2015 – 2016), 46.Anissa Kennedy (2015), 47.Rachel

Shomaker (2015), 48.Chelsea MaLyn Lawhorn (2015), 49.Sara Rubio-Correa (2015 – 2017, White Research Award), 50.Heeral Lakhani (2015 – 2016), 51.Katherine Santiago Garcia (2016), 52.Sherry Browne (2016), 53.Talia Heckman (2016), 54.Karen Funderburk (2016 – 2017), 55.Timothy DeLory (2016), 56.Mustafa Noori (2017 – 2018), 57.Franco Abad (2017), 58.Antron Spooner (2017), 59.Taylor Pritchard (2017 – 2018), 60.Mark Rothermund (2017), 61.Samyra Blackeney (2017), 62.Christopher Reid (2017), 63.Kevin Le (2017 – 2018), 64.Erin Estes (2017), 65.Max McCall (2017 – 2018), 66.Chloe Simmons (2017 – 2018), 67.Foray Keita (2017 – 2018), 68.Kali Cox (2018 – 2019), 69.Tatiana Molina-Marciales (2018 – 2019), 70.Zea Robinson (2018), 71.Katherine Barrs (2018), 72.Mohamad Omar Ani (2018), 73.Kimberlyn Eversman (2018), 74.Eliza Glass (2018). 75.Sarah Krug (2018 – 2019), 76.Cristian Hernandez (2019 – 2020), 77.Shaun Pitts (2019 – 2020), 78.Emily Jordon (2019), 79.Anh Pham (2019 – 2020), 80.Bethany Carswell (2019 – 2021), 81.Matthew Hill (2019), 82.Maya Brody (2019), 83.Spencer Moore (2019), 84.Jenifer Cardenas-Conde (2019 – 2020), 85.Ashley Williams (2020), 86.Jackson Keever (2020), 87. Sandrena Trowers (2020), 88.Jaymie Martin (2021, URI Award), 89.Kayla De Jong (2021 – 2024), 90.Tianna Tanasichuk (2021 – 2024, I-STEAM Award), 91.Cleo Randall (2021 – 2022, URI Award). 92.Akanksha Yeola (2021 – 2022). 93.Bogdan Cojocaru-Marian (2022 – 2023), 94.Hunter Haeberle (2022), 95.Luke Nelson (2022), 96.Dawit Shibiru (2022 – 2024), 97.Kaitlin Kinahan (2022 – 2023), 98.Jocelyn Chui (2023), 99.Nick Krys (2023), 100.Heather Anderson (2023 – 2024), 101.Rupika Banda (2024, URI Award), 102.Breanna Bevan (2024 - 2025, I-STEAM Award), 103.Vanessa Gomes Fornaziero (2024), 104.Mingcong Zeng (2024), 105.Luan Mesquita da Silva (2024), 106.Harneet Tatla (2024), 107.Breana Yim (2024-2025), 108.Ammy Pacheco (2025 – current, SESA Award), 109.Rosie Whiskeyjack (2025, I-STEAM Award), 110.Keane Nedamo (2025), 111.Claire Mitchell (2026, I-STEAM Award). 112.Ada Yemis (2026 – current), 113.Hargun Kochar (2026 – current, SESA Award), 114.Grecia Mariela Rodriguez Luna (2026, Mitacs award), 115. Viktoriia Lukashyk (2026, Mitacs award).

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), Sarah Meadows (2018), Isabella Romaine (2018); Sheila Mendelbaum (2019).

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

Google Scholar: h-index = 45, i10-index = 102, Total citations = 8130

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BOOK CHAPTERS AND NON-REFEREED PUBLICATIONS

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QUIGLEY T.P., AMDAM G.V., **RUEPPELL O.** (2018) Honey bee workers as models of aging. In: "Conn's Handbook of Models for Human Aging", J. Ram (ed.), Elsevier Press, Atlanta, p.533-547.

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INVITED PRESENTATIONS, SEMINARS, AND OUTREACH TALKS (last 5 years, * = HQP)

PACHECO A.*, WICKRAMASINGHE P.*, **RUEPPELL O.** What is bugging the bug? Science Talks, Faculty of Science, University of Alberta, Edmonton, AB. 2026/02/25.

BAHREINI R.*, **RUEPPELL O.** Novel varroacides for Alberta's apicultural industry. RDAR Showcase, Leduc, AB, 2026/01/21.

BAHREINI R.*, MEIER D.*, TURNBULL A.*, YIM B.*, LAI C.*, **RUEPPELL O.** Varroacide development project: Progress update. Alberta Beekeepers Association Convention, Edmonton, AB. 2025/11/18.

RUEPPELL O. Honey bee viruses - Invisible and understudied killers. Annual British Columbia Honey Producer Association Meeting. Salmon Arm, BC. 2025/10/25.

RUEPPELL O. Egg Size Variation Honey Bee Queens. Edmonton and District Beekeepers Association Meeting. Spruce Grove, Alberta. 2025/10/23.

RUEPPELL O., KAUFMAN, C.N.G.*, WICKRAMASINGHE P.* Honey bee viruses in the field, the lab, and the bee. NAPPC Member Moment, 25th Annual NAPPC International Conference, online. 2025/10/22.

RUEPPELL O. Plasticity in Reproductive Specialists: Life History Adaptations in Honey Bees. Gordon Research Conference "Fertilization and Activation of Development", Holderness, NH, 2025/07/28.

2025 **RUEPPELL O.** Inside the Hive: How Honey Bee Colonies Thrive and Survive. Educated Luncheon Series, University of Alberta Alumni Association, Edmonton, AB.

2024 WALTON A.*, HERMAN J.J.*, **RUEPPELL O.** Individuality in the hive: How variation in worker stress susceptibility can bolster social insect colony health. Annual Meeting of the Entomological Society of America, Phoenix, AZ.

2024 **RUEPPELL O.** Life history theory and practice in social insects. Invited Seminar, Entomology Lecture Series, University of Alberta, AB.

2024 **RUEPPELL O.** Size in social insects and other creatures. Invited Seminar, University of Regensburg, Germany, online.

2024 **RUEPPELL O.** Individual Life History Evolution in the Eusocial Context of Superorganisms. Departmental Seminar, North Carolina State University, NC.

2024 **RUEPPELL O.** Viruses: The big tiny unknowns in honey bee health. NCSBA 2024 Spring Conference, New Bern, NC.

2024 **RUEPPELL O.** Towards IPM control of Varroa. NCSBA 2024 Spring Conference, New Bern, NC.

2023 **RUEPPELL O.** Keeping Hives Alive – Behavioural Defence of Honey Bees against Disease. Western Apicultural Society Meeting, Calgary, AB.

2023 **RUEPPELL O.** Study thy foe and friend: On how to help honey bees against Varroa. Agriculture Agri-Food Canada Annual Bee Day, Beaverlodge, AB.

2023 **RUEPPELL O.** From brood signaling to the development of a new hygienic assay. Invited Seminar, Big Island Hawaiian Beekeeper Association, online.

2023 **RUEPPELL O.** Reproduction takes center stage in honey bee biology and health. Departmental Seminar, University of Manitoba, online.

2023 **RUEPPELL O.** Cell size – egg size – bee size. Invited Seminar, Calgary and District Beekeeper Association, online.

2022 **RUEPPELL O.,** HERMAN J.J.*, HOFMEYR J.*, SNYDER P.*, EREZ T., SOROKER V. (e)QTL mapping of hygienic behavior in honey bees. Annual Meeting of the Entomological Society of America, Vancouver, BC.

2022 **RUEPPELL O.** The importance of social defences in the superorganism. Ecology and Evolution Seminar, University of Alberta.

2022 **RUEPPELL O.** The central role of the ovary for honey bee health and biology. Departmental Seminar, Montana State University.

2022 **RUEPPELL O.** Keeping hives alive: Behavioural defence of honey bees against disease, Science Talks, Faculty of Science, University of Alberta, Edmonton AB.

2022 **RUEPPELL O.** Honey bees get sick from viruses, too. Integrated Pest Management Workshop of the Alberta Beekeepers Commission, Edmonton, AB.

2021 **RUEPPELL O.** Social behavioral defenses against Varroa. 2021 ABC Annual Conference & Trade Show. Edmonton, AB.

2021 **RUEPPELL O.**, WAGONER K. Varroa-specific hygienic behaviour. COLOSS Varroa Task Force Meeting. online.

2021 **RUEPPELL O.** Social stress protection: Can it explain aging patterns of social insects? Gutenberg Symposium, Mainz, Germany.

2021 **RUEPPELL, O.** Does royalty protect against virus infection? COLOSS Virus Task Force Meeting, online.

2021 **RUEPPELL, O.** Honey bee viruses (and queens). Integrated Pest Management Workshop of the Alberta Bekeepers Commission, online.

CONFERENCE PRESENTATIONS (last 5 years, * = HQP)

KAUFMAN C.N.G.*, **RUEPPELL O.** Towards understanding the conditional pathogenicity of black queen cell viruses. 2025-26 NAPPC Grantee Reporting Symposium, online, 2026/05/27.

RUEPPELL O. Mortality effects of naturally occurring virus mixtures on honey bees. 2025-26 NAPPC Grantee Reporting Symposium, online, 2026/05/27.

PACHECO, A.*, WICKRAMASINGHE, P.*, **RUEPPELL, O.** Exploring the effects of chronic bee paralysis virus (CBPV) and Israeli acute paralysis virus (IAPV) co-infection in *Apis mellifera*. R.E. Peter Conference, Edmonton, AB, 2026/03/19.

POUDEL, A.*, LAI, C.M.*,HERMAN, J.J.*, LU, R.X.*, WICKRAMASINGHE, P.M.*, DUANGPHAKDEE, O., **RUEPPELL, O.** Host-specific viral diversity in *Tropilaelaps mercedesae* mites from Thai honeybee colonies. R.E. Peter Conference, Edmonton, AB, 2026/03/18.

ELLIS, L.*, PRINS, L., PRINS, A., GARCIA FIGUEROA, C.*, BIXBY M., **RUEPPELL O.** Fusion-fission beekeeping. Canadian National Beekeeping Convention. Calgary, AB, 2026/02/14.

BAHREINI, R.*, MEIER, D.*, TURNBULL, A.*, YIM, B.*, LAI, C.*, **RUEPPELL O.** Field evaluation of next-generation miticides against *Varroa destructor*. Canadian National Beekeeping Convention. Calgary, AB, 2026/02/14.

RUEPPELL O., HAN B. Queen ovary regression during swarming. Canadian National Beekeeping Convention. Calgary, AB, 2026/02/14.

WICKRAMASINGHE, P.*, KAUFMAN, C.N.G.*, PACHECO, A.*, **RUEPPELL O.** Molecular basis of IAPV pathogenesis and antiviral immune response in *Apis mellifera*. Canadian National Beekeeping Convention. Calgary, AB, 2026/02/13.

GARCIA FIGUEROA, C.*, **RUEPPELL O.**, Variation in brood signaling of Varroa infestation. Canadian National Beekeeping Convention. Calgary, AB, 2026/02/13.

KAUFMAN C.N.G.*, **RUEPPELL O.** Comparing the dynamics of Black queen cell virus infection between developing workers and queens. 2026 American Bee Research Conference, Mobile AL, USA, 2026/01/09.

BAHREINI R.*, MEIER D.*, TURNBULL A.*, YIM B.*, **RUEPPELL O.** Toxicity profiles of two synthetic miticides in mature and immature *Apis mellifera.* 2025 Joint Annual Meeting of the Entomological Societies of Canada and Alberta. Calgary, AB, 2025/10/06.

TOOR G.*, LU, R.X.*, **RUEPPELL O.** Imidacloprid susceptibility is linked to life history regulation in honey bees (*Apis mellifera*). 2025 Joint Annual Meeting of the Entomological Societies of Canada and Alberta. Calgary, AB, 2025/10/06.

KAUFMAN C.*, **RUEPPELL O.** Studying honey bee caste based differences in Black queen cell virus infection response. 2025 Joint Annual Meeting of the Entomological Societies of Canada and Alberta. Calgary, AB, 2025/10/06. (2nd Place in President's Prize Competition), 2025/10/06.

LAI C.M.*, HERMAN J.J.*, LU R.X.*, WICKRAMASINGHE P.M.*, **RUEPPELL O.** Comparing effects of the honey bee ectoparasitic mite *Tropilaelaps mercedesae* on gene expression in a native (*Apis dorsata*) and novel (*Apis mellifera*) host. 2025 Joint Annual Meeting of the Entomological Societies of Canada and Alberta. Calgary, AB, 2025/10/06.

BAHREINI R.*, MEIER D.*, TURNBULL A.*, **RUEPPELL O.** Chemical innovations in *Varroa destructor* mite control. Apimondia. Copenhagen, Denmark. 2025/09/28

BAHREINI R.*, MEIER D.*, FERREIRA T.*, SUN M., SARNA L., LIM G., **RUEPPELL O.** Laboratory evaluation of phytochemical extracts of *Humulus lupulus* against *Varroa destructor*. COLOSS workshop, Copenhagen, Denmark. 2025/09/26

RUEPPELL O., AMIRI E., HAN B. Causes and consequences of reproductive plasticity of honey bee queens. Annual Conference of the Canadian Society of Ecology and Evolution, Sherbrooke, QC. 2025/07/09

WICKRAMASINGHE P.M.*, KAUFMAN C.N.G., **RUEPPELL O.** Artificial selection for high and low virulence of an RNA virus in *Apis mellifera* workers. Annual Conference of the Canadian Society of Ecology and Evolution, Sherbrooke, QC. 2025/07/08

2025 TOLA Y.H. *, WAGONER K.M., STRAND M.K., **RUEPPELL O.**, & TARPY D.R. Hygienic behavior & gut microbiomes. Spring 2025 South Carolina ASM Meeting, Greenville, SC.

2025 KAUFMAN C.*, **RUEPPELL O.** Inoculation of developing honey bees with black queen cell virus shows complex infection dynamics and mortality trends. RE Peter 16th Annual Biology Conference, Edmonton, AB (First place, undergraduate presentation award).

2025 WICKRAMASINGHE P.M.*, AMIRI E.*, HAN B.*, **RUEPPELL O.** Immune defenses of *Apis mellifera* queens against Israeli acute paralysis virus. RE Peter 16th Annual Biology Conference, Edmonton, AB.

2025 TOOR G.*, **RUEPPELL O.** Precocious honey bee (*Apis mellifera*) foragers exhibit transcriptional similarity to nurses and reduced stress tolerance. RE Peter 16th Annual Biology Conference, Edmonton, AB.

2025 TURNBULL A.*, BAHREINI R. *, MEIER D. *, HOFMEYR J. *, SUN M., SARNA L., LIM G., **RUEPPELL O.** Transcriptome analysis of *Varroa* mites and honey bees in response to organic acaricides. Integrated Pest Management Meeting, Edmonton, AB.

2025 MEIER D.*, BAHREINI R.*, FERREIRA T.*, TURNBULL A.*, HOFMEYR J.*, SUN M., SARNA L., LIM G., **RUEPPELL O.** Acaricidal effects of inorganic and organic compounds on *Apis mellifera*, and their ectoparasite, *Varroa destructor*. Integrated Pest Management Meeting, Edmonton, AB.

2025 WALTON A.*, **RUEPPELL O.** Social immunity in the queen's retinue. Breeder's Day of the Alberta Beekeepers Commission. Edmonton, AB.

2025 KAUFMAN C.N.G.*, **RUEPPELL O.** Black queen cell virus. Breeder's Day of the Alberta Beekeepers Commission. Edmonton, AB.

2025 PERNAL S.F., PLETTNER E., **RUEPPELL O.,** LU R.X.* Evaluation of a new acaricide against *Varroa destructor*. Canadian National Beekeeping Convention, Ottawa, ON.

2025 **RUEPPELL O.**, MURRAY T.*, BANDA R.*, ANDERSON H.* Lethality of the viral landscape in Alberta. Canadian National Beekeeping Convention, Ottawa, ON.

2025 BAHREINI S.F.*, MEIER D.*, TURNBULL A.*, **RUEPPELL O.** The challenges in integrated management of Laelapidae mites. Canadian National Beekeeping Convention, Ottawa, ON.

2025 PERNAL S.F., PLETTNER E., **RUEPPELL O.,** LU R.X.* Evaluation of a new Acaricide against *Varroa destructor*. American Bee Research Conference, Reno, NV.

2024 BHAREINI R.*, MEIER D.*, TURNBULL A.*, **RUEPPELL O.** Varroacide project progress update. Alberta Beekeepers Commission Conference and Trade Show, Edmonton, AB.

2024 HOLMES L., KERNS J., MCCORMICK N., IBRAHIM A., SMITH T.*, ANDERSON H.*, HOFMEYER J.*, HOOVER S., LABUSCHAGNE R., PERNAL S., **RUEPPELL O.** Results of a collaborative stock comparison from across Alberta. Alberta Beekeepers Commission Conference and Trade Show, Edmonton, AB.

2024 BAHREINI R.*, GONZÁLEZ-CABRERA J., HERNÁNDEZ-RODRÍGUEZ C.S., MORENO-MARTÍ S., MUIRHEAD S., LABUSCHAGNE R., **RUEPPELL O.** The persistence of acaricides resistance in *Varroa destructor* population in Canada. Joint Annual Meeting of the Entomological Societies of Quebec and Canada 2024, Quebec City, QC.

2024 WICKRAMASINGHE P.M.*, **RUEPPELL O.,** AMIRI E.*, HAN B.* Virus infection dynamics and immune response in honey bee queens. Joint Annual Meeting of the Entomological Societies of Quebec and Canada 2024, Quebec City, QC.

2024 BEVAN B.*, **RUEPPELL O.**, ZHANG X. Egg size plasticity in honey bees. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB.

2024 KAUFMAN C.*, WICKRAMASINGHE P.M.*, **RUEPPELL O.** Israeli Acute Paralysis Virus honey bee vaccination. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB. (Student Presentation Award)

2024 WICKRAMASINGHE P.M.*, AMIRI E.*, HAN B., STRAND M.K., TARPY D.R., **RUEPPELL O.** Viral immune response of honey bee queens. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB.

2024 BAHREINI R.*, TURNBULL A.*, MEIER D.*, FERREIRA T.P.*, HOMFEYR J.*, WICKRAMASINGHE P.M.*, SUN M., SARNA L., LIM G., **RUEPPELL O.** Differential gene expression in *Apis mellifera* exposed to plant extracts. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB.

2024 BAHREINI R.*, MEIER D.*, FERREIRA T.P.*, HOMFEYR J.*, SUN M., SARNA L., LIM G., **RUEPPELL O.** Laboratory evaluating plant extracts on *Varroa destructor* ectoparasitic mite of *Apis mellifera*. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB.

2024 BAHREINI R.*, MEIER D.*, FERREIRA T.P.*, HOMFEYR J.*, **RUEPPELL O.** Comparative toxicity of putative new miticides to different honey bee castes. Entomological Society of Alberta 72nd Annual Meeting, Lethbridge, AB.

2024 HERMAN J.J.*, WALTON A.*, **RUEPPELL O.** The Weak Worker Hypothesis as a novel perspective on division of labor in social insects. CSHL Meeting on Biology & Genomics of Social Insects, Cold Spring Harbor, NY.

2024 AMIRI E.*, HAN B.*, **RUEPPELL O.** Exploring egg size plasticity and its proximate causes in honey bee castes. CSHL Meeting on Biology & Genomics of Social Insects, Cold Spring Harbor, NY.

2024 WICKRAMASINGHE, P.M.*, KAUFMAN, C.*, **RUEPPELL, O.** Maternal vaccination with IAPV does not protect honey bee offspring. NAPPC Grantee Reporting Symposium, Online.

2024 KAUFMAN C.*, WICKRAMASINGHE P.M.*, **RUEPPELL O.** *Apis mellifera* maternal vaccination against Israeli acute paralysis virus (IAPV). RE Peter 15th Annual Biology Conference, Edmonton, AB.

2024 WICKRAMASINGHE P.M.*, KAUFMAN C.*, **RUEPPELL O.** Artificial selection for high and low virulence of an RNA virus in *Apis mellifera* workers. RE Peter 15th Annual Biology Conference, Edmonton, AB.

2024 TOOR G.*, **RUEPPELL O.** Precocious foraging behavior in honey bees (*Apis mellifera*) occurs independently of chemical stress tolerance. RE Peter 15th Annual Biology Conference, Edmonton, AB.

2024 ANDERSON H.*, **RUEPPELL O.** Investigating virus presence in three different genetic stocks of honey bee queens (*Apis mellifera*). RE Peter 15th Annual Biology Conference, Edmonton, AB. (BSc student presentation award: 3rd place).

2024 HERMAN J.J.*, WALTON A.W.*, **RUEPPELL O.** The weak worker hypothesis: A new framework for understanding division of labor in social insects. RE Peter 15th Annual Biology Conference, Edmonton, AB. (PhD student presentation award: 1st place)

2024 DEJONG K.*, **RUEPPELL O.** Buzzing with potential: Prediction of honey bee queen success by stock, physical attributes, and behavioral traits. RE Peter 15th Annual Biology Conference, Edmonton, AB.

2024 KINAHAN K.*, HERMAN J.J.*, **RUEPPELL O.** Susceptibility to temperature stressors at the individual and colony level. RE Peter 15th Annual Biology Conference, Edmonton, AB.

2024 WICKRAMASINGHE P.M.*, KAUFMAN C.*, **RUEPPELL O.** The effects of maternal IAPV vaccination on *Apis mellifera* offspring. Canadian National Beekeeping Convention and Tradeshow, Calgary, AB.

2024 BAHREINI R.*, GONZÁLEZ-CABRERA J., HERNÁNDEZ-RODRÍGUEZ C.S., MORENO-MARTÍ S., MUIRHEAD S., LABUSCHAGNE R., **RUEPPELL O.** Mutations associated with the resistance to acaricides detected in Alberta populations of *Varroa destructor*. Canadian National Beekeeping Convention and Tradeshow, Calgary, AB.

2024 HAN B.*, AMIRI E.*, **RUEPPELL O.** Causes and consequences of worker egg size variation. Canadian National Beekeeping Convention and Tradeshow, Calgary, AB.

2024 HERMAN J.J.*, WALTON A.W.*, **RUEPPELL O.** The weak worker hypothesis: a new framework for understanding differences in individual and group division of labor. American Bee Research Conference, New Orleans, LA.

2024 HAN B.*, WU J., WEI Q., LIU F., CUI L., **RUEPPELL O.,** XU S., Life-history stage determines the diet of ectoparasitic mites on their honey bee hosts. American Bee Research Conference, New Orleans, LA.

2024 WALTON A.*, CORBY-HARRIS V, **RUEPPELL O.,** Nutritional and pheromonal environment interact with hormonal regulation of honey bee worker longevity. American Bee Research Conference, New Orleans, LA.

2023 BAHREINI R.*, HOFMEYR J.*, NELSON L.*, MEIER D.*, FERREIRA T.*, **RUEPPELL O.** Comparative evaluation of novel miticides against *Varroa* mites. Alberta Beekeepers Commission Meeting and Tradeshow. Edmonton, AB.

2023 WALTON A.W.*, HERMAN J.J.*, **RUEPPELL O.** Social stress resistance facilitates exceptional aging patterns in social insects. Entomological Society of America Annual Meeting, National Harbor, MD.

2023 BAHREINI R.*, HOFMEYR J.*, **RUEPPELL O.,** Evaluating miticidal effects of active ingredients against *Varroa destructor* ectoparasitic mites of honey bees, *Apis mellifera*. Entomological Society of Alberta, Edmonton, AB.

2023 LU R. X.*, BHATIA S.*, WAIKER P.*, SIMONE-FINSTROEM M., **RUEPPELL O.** Viral Variance: QTL screening for variation in honey bee virus susceptibility. R.E. Peter Conference, Edmonton, AB.

2023 TANASICHUK T.K.*, DEJONG K.*, HERMAN J.J.*, **RUEPPELL O.** Effects of variation of comb cell size on egg size. R.E. Peter Conference, Edmonton, AB.

2023 SMITH T.*, **RUEPPELL O.** Stock selection project update. Breeder's Day Meeting. Edmonton, AB.

2023 HERMAN J.J.*, CARSWELL B.*, HOFMEYR J.*, **RUEPPELL O.** A dose-response transcriptome of honey bee workers: Characterizing gene expression across a large range of oxidative stress. American Bee Research Conference, Jacksonville, FL.

2023 BHAREINI R.*, NELSON L.*, HOFMEYR J.*, SMITH T.*, **RUEPPELL O.** Toxicity of potential new Varroacides to honey bee queens under laboratory and field conditions. American Bee Research Conference, Jacksonville, FL.

2023 AMIRI E.*, FLORES-RODRIGUEZ M.*, VYAS S.*, BRANNON A.*, TARPY D.R., STRAND M.K., **RUEPPELL O.** Analysis of host-virus interactions in honey bees infected with Israeli acute paralysis virus. American Bee Research Conference, Jacksonville, FL.

2023 SMITH T.*, HOOVER S., LABUSCHAGNE R., PERNAL S.F., **RUEPPELL O.** Assessing molecular, individual, and colony markers of local and important stocks to improve honey bee health in Alberta. RDAR Research Showcase, Leduc, AB.

2022 BHAREINI R.*, **RUEPPELL O.** Developing New Miticides for Varroa Destructor Control in Honey Bees. Alberta beekeepers Commission Conference and Trade Show, Edmonton, AB.

2022 DEJONG K.*, TANASICHUK T.K.*, HERMAN J.*, **RUEPPELL O.** Little sons and big daughters: Honeybee queen cell size experience effects on egg laying behaviour. Joint Annual Meeting of the Entomological Society of America and Entomological Society of Canada. Vancouver, BC.

2022 LU R. X.*, BHATIA S.*, WAIKER P.*, SIMONE-FINSTROEM M., **RUEPPELL O.** Screening for salvation: QTL-based screening for virus resistance in honey bees. Joint Annual Meeting of the Entomological Society of America and Entomological Society of Canada. Vancouver, BC. (1st Place Presentation Award)

2022 SMITH T.*, HOOVER S., LABUSCHAGNE R., PERNAL S.F., **RUEPPELL O.** Beyond body size: Using honey bee queen behaviour to predict queen quality and colony success. Joint Annual Meeting of the Entomological Society of America and Entomological Society of Canada. Vancouver, BC.

2022 PERNAL S.F., PLETTNER E., LU R.X.*, **RUEPPELL O.**, MACIAS-SAMANO J., IBRAHIM A. Field trials of a new compound to control Varroa destructor, an ectoparasite of honey bees (*Apis mellifera*). Joint Annual Meeting of the Entomological Society of America and Entomological Society of Canada. Vancouver, BC.

2022 HERMAN J.J.*, HOFMEYR J.*, CHANTAWANNAKUL P., **RUEPPELL O.** A dose-response transcriptome of honey bee workers: Characterizing gene expression across a large range of oxidative stress. Joint Annual Meeting of the Entomological Society of America and Entomological Society of Canada. Vancouver, BC.

2022 PERNAL S., PLETTNER E., LU R.*, **RUEPPELL O.**, SÁMANO J.M., IBRAHIM A. A new acaricidal compound against *Varroa*. *47th Apimondia Meeting*, Istanbul, Turkey.

2022 BHAREINI R.*, **RUEPPELL O.** Developing New Miticides for Varroa Destructor Control in Honey Bees. COLOSS Varroa Task Force conference, Coloss Honey Bee Research Association.

2022 TANASICHUK T.K.* (MENTORED BY **O RUEPPELL**). Egg size manipulated by variable honeycomb. I-STEAM Symposium of the University of Alberta, Edmonton, AB.

2022 AMIRI E.*, HAN B.*, TARPY D.R., STRAND M.K., **RUEPPELL O.** Comparing the castes: Dynamics of virus infection and immune response reaction in workers and queens. XIV International Congress of the International Union for the Study of Social Insects, San Diego, USA.

2022 HAN B.*, AMIRI E.*, **RUEPPELL O.** Social regulation of egg size plasticity in the honey bee. XIV International Congress of the International Union for the Study of Social Insects, San Diego, USA.

2022 **RUEPPELL O.**, WAGONER K.* From hygienic brood signals to a predictive assay of honey bee (*Apis mellifera*) colony health. XIV International Congress of the International Union for the Study of Social Insects, San Diego, USA.

2022 WAIKER P.*, ULUS Y., TSUI M.T.K., **RUEPPELL O**. Urbanization is associated with mercury accumulation in honey bees across the United States. 118th Annual Meeting of the North Carolina Academy of Sciences, Buies Creek, NC.

2022 DEJONG K.*, HERMAN J.*, **RUEPPELL O.** Cell size effects on queen oviposition preferences and behaviour" IPM Workshop of the Alberta Beekeepers Commission, Edmonton, AB.

2022 LU RX.*, BHATIA S.*,SIMONE-FINSTROEM M, **RUEPPELL O.** QTL analysis of virus resistance in honeybees. IPM Workshop of the Alberta Beekeepers Commission, Edmonton, AB.

2022 HAN B., WEI Q., AMIRI E., HU H. MENG L., STRAND M.K., TARPY D.R.., XU S., **RUEPPELL O.** Smaller ovaries produce bigger eggs: Egg size alteration from colony population to gene action. American Bee Research Conference, online.

2021 WAGONER K.M.*, SPIVAK M., MILLAR J., KELLER J., WAIKER P.*, SCHAL C., **RUEPPELL O.** Hygiene-eliciting brood semiochemicals as a tool for assaying honey bee (Hymenoptera: Apidae) colony resistance to Varroa (Mesostigmata: Varroidae). Entomological Society of Canada, online.

2021 **RUEPPELL O.**, AMIRI E.* "Honey bee queen antiviral immune responses". 21st Conference of the North American Pollinator Protection Campaign. online.

2021 HAN B.*, AMIRI E.*, WEI Q., QI D., STRAND M.K., TARPY D.R., LI J., XU S., **RUEPPELL O.**, "Cooperatively breeding effects on egg size and queen ovary plasticity in honey bees". 2021 CSHL Meeting on Biology & Genomics of Social Insects, online.

2021 AMIRI E.*, HAN B.*, STRAND M.K., TARPY D.R., **RUEPPELL O.**, "The ontogeny of immune responses in honey bee virus infected queens". 2021 CSHL Meeting on Biology & Genomics of Social Insects, online.

2021 LI-BYARLAY H.*, BONCRISTIANI H.F.*, HOWELL G., HERMAN J.*, CLARK L., STRAND M.K., TARPY D.R., **RUEPPELL O.**, "Honey bee epigenomic and transcriptomic response to lethal viral infections with a temporal manner". 2021 CSHL Meeting on Biology & Genomics of Social Insects, online.

2021 WAGONER K.*, SPIVAK M., MILLAR J., SCHAL C., **RUEPPELL O.** Brood hygiene-eliciting signal as a tool for assaying honey bee colony pest and disease-resistance. *American Bee Research Conference*, online.

2021 HAN B.*, WEI Q, WU F, HU H, MA C, MENG L, ZHANG X, FENG M, FANG Y, LI J, **RUEPPELL** O. Tachykinin signaling modulates task-specific responsiveness of honey bee workers. *American Bee Research Conference*, online.

2021 AMIRI E.*, HAN B.*, STRAND M.K., TARPY D.R., **RUEPPELL O**. Immune response of different developmental stages of honey bee queens to Israeli acute bee paralysis virus infection. *American Bee Research Conference*, online.

SERVICE ON THESIS COMMITTEES / EXTERNAL 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 *D. 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 – 2021)

Kim Yeoman (MSc, Effect of Dragonfly Nymph Presence and Consepecific 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, committee member)

Elizabeth du Rand (PhD, "Molecular Mechanisms Underlying Xenobiotic Tolerance in the Honey Bee, *Apis mellifera scutellata*", University of Pretoria, 2014 – 2015, external examiner)

Yarira Ortiz-Alvarado (PhD, "Honey Bee Gut Microbiota and its Effect on Physiology and Behavioral Development", University of Puerto Rico, 2014 – 2018, committee member)

Nathalie Nida-Moske (PhD, “Epigenetics of *Cardiocondyla* alternative developmental trajectories”, Universität Regensburg, Germany, 2015 – 2017, external examiner)

Robert Brown (MSc, “Impacts of *Corbicula fluminea* on Methane Cycle Processes in Stream Sediments” UNCG, 2016 – 2018, committee member)

Jimmie Teague (MSc, “Does Lyme Disease Spread from Virginia into North Carolina: Surveillance of Ticks and *Borrelia burgdorferi* infection patterns”, UNCG, 2016 – 2018, committee member)

Michael Leshowitz (MA, “Development of Honesty in Repeated Signaling Games“, UNCG, 2017, examiner)

Danielle Kowcich (MSc, “Oviposition Site-Selection of *Phlebotomus papatasi*: The Effects Conspecific Stages”, UNCG, 2017 – 2018, committee member)

James Withrow (PhD, “Induced Polygyny in Honey Bees”, NCSU, 2017 – 2019, committee member)

Romain Dahan (PhD, “Queen Polymorphism, Reproductive Cheating, and the Evolution of Social Parasitism”, Arizona State University, 2017 – 2021, committee member)

Brian Springall (MSc, “The in-flight Social Calls of Insectivorous Bats; Species Specific Behaviors and Context of Call Production” UNCG, 2018 – 2019, committee member)

Matthew Miller (PhD, “Measuring the Impact of Homologous Recombination and Adaptation on Prokaryote Evolution”, UNCG, 2018 – 2019, committee member)

Timothy DeLory (PhD, “Recombination in Social Insects”, Utah State University, 2019 – present, committee member)

Cortney MacInnis (PhD, “Evaluating the impact of emerging parasites on European honey bee health”, University of Alberta, 2020 – 2024, committee member)

Maggie McDonald (PhD, “Assessing ground beetle (Coleoptera: Carabidae) biodiversity and trophic interactions in pulse agroecosystems in Alberta”, University of Alberta (2021, examiner)

Grant Doehring (PhD, “Synchronized activity rhythms and collective motion in ant colonies”, McMaster University, 2021, external examiner)

Kathleen Dogantzis (PhD, “Understanding the evolutionary origin and ancestral composition of honey bee (Apis mellifera) populations.” York University, 2022, external examiner)

Sissi Yuli (PhD, “Molecular dissection of sleep in the *Drosophila* brain”. University of Alberta, 2024 – current, committee member).

Clement Chevret (PhD, “Mitochondrial pathway shift with insect aging”. University of Alberta, 2025 – current, committee member).