

GREGORY M. PASK
Curriculum Vitae

Department of Biology
Middlebury College
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EDUCATION

Ph.D.	Biological Sciences	Vanderbilt University	2013
B.S.	Biochemistry <i>Cum Laude with Honors in Chemistry</i>	Muhlenberg College	2008

PROFESSIONAL EXPERIENCE

Middlebury College	Assistant Professor, Biology, 2020 – present
Bucknell University	Assistant Professor, Biology, 2017 – 2020
Washington & Lee University	Visiting Assistant Professor, Biology, 2015 – 2017
University of California, Riverside	Postdoctoral Fellow, Entomology, 2013 – 2015

HONORS AND AWARDS

2017-2020	Swanson Fellowship in the Sciences and Engineering
2008	Lehigh Valley American Chemical Society Prize
2007	Alphonse C. Lova Memorial Award in Chemistry
2006 – 2008	Muhlenberg Chemistry Honors Program
2004 – 2008	Muhlenberg Scholars Honors Program

RESEARCH

PEER-REVIEWED PUBLICATIONS

Pask GM. Invertebrate Olfactory Receptors. In: *The Senses: A Comprehensive Reference. Olfaction and Taste Vol. III.* 2020. 2nd edition, 453-465

- Yan H, Jafari S, **Pask GM**, Zhou X, Reinberg D, Desplan C. Evolution, Developmental Expression and Function of Odorant Receptors in Insects. *J. Exp. Biol*, 2020 223, jeb208215
- Pask GM**, Slone JD, Millar JG, Das P, Moreira JA, Zhou X, Bello J, Berger SL, Bonasio R, Desplan C, Reinberg D, Liebig J, Zwiebel LJ, Ray A. Specialized odorant receptors in social insects that detect cuticular hydrocarbon cues and candidate pheromones. *Nature Commun*, 2017 8 (1), 297
- Slone JD, **Pask GM**, Ferguson ST, Millar JG, Berger SL, Reinberg D, Liebig J, Ray A, Zwiebel LJ. Functional characterization of odorant receptors in the ponerine ant, *Harpegnathos saltator*. *PNAS*, 2017 114 (32) 8586-8591
- Pask GM**, Ray A. Insect Olfactory Receptors: An Interface Between Chemistry and Biology. In: *Chemosensory Transduction: Detection of Odor, Taste and other Chemostimuli*. 2016. Edited by: Zufall and Munger. Elsevier. /2016:101–122
- Kumar BN, Taylor RW, **Pask GM**, Zwiebel LJ, Newcomb RD, Christie DL. A Conserved Aspartic Acid Is Important for Agonist (VUAA1) and Odorant/Tuning Receptor-Dependent Activation of the Insect Odorant Co-Receptor (Orco). *PLOS ONE*, 2013 8 (7): e70218
- Pask GM**, Bobkov YV, Corey EA, Ache BW, Zwiebel LJ. Blockade of Insect Odorant Receptors with Amiloride Derivatives. *Chem Senses*. 2013 38 (3): 221-229.
- Pask GM**, Romaine IM, Zwiebel LJ. The Molecular Receptive Range of a Lactone Receptor in *Anopheles gambiae*. *Chem Senses*. 2013 Jan;38(1):19-25.
- Jones PL, **Pask GM**, Romaine IM, Taylor RW, Reid PR, Waterson AG, Sulikowski GA, Zwiebel LJ. Allosteric Antagonism of Insect Odorant Receptor Ion Channels. *PLOS ONE*, 2012, 7 (1): e30304
- Pask GM**, Jones PL, Rützler M, Rinker DC, Zwiebel LJ. Heteromeric Channels of Anopheline Odorant Receptors Exhibit Distinct Channel Properties. *PLOS ONE*, 2011, 6 (12): e28774
- Jones PL, **Pask GM**, Rinker DC, Zwiebel LJ. Functional Agonism of Insect Odorant Receptor Ion Channels. *PNAS*, 2011 May 24, 108 (21): 8821-8825
- Bohbot JD, Jones PL, Wang G, Pitts RJ, **Pask GM**, Zwiebel LJ. Conservation of Indole Responsive Odorant Receptors in Mosquitoes Reveals an Ancient Olfactory Trait. *Chem Senses*, 2011 Jan;36(2): 149-60.

INVITED PRESENTATIONS (*denotes undergraduate student authors)

Pask GM. Sniffin' Out Your Friends: Decoding Smell in Ants and Fireflies. 2021. City University of New York Neuroscience Seminar Series. New York, New York.

Pask GM, Cannizzaro DN*, Naughton LF*, Martins LM*, Tran H*, Longo JN*, Ham KM*, Millar JG, Collins DB, Lower SS. Social Sniffers: Decoding of olfaction in ants and fireflies. 2020. Entomological Society of America Annual Meeting. Virtual Meeting

Pask GM. Smells Like Queen Spirit: Unraveling Social Communication in the Indian Jumping Ant. 2019. Bloomsburg University Department of Biological and Allied Health Sciences Seminar Series. Bloomsburg, Pennsylvania.

Pask GM. How to Smell Your Sisters: Detection of Cuticular Hydrocarbon Pheromones in Ants. 2018. Cornell University Neurobiology and Behavior Seminar Series. Ithaca, New York

Pask GM, Jones PL, Zwiebel LJ. Exploring Insect Odorant Receptor Function Through the Use of Novel Chemical Modulators. 2012. International Symposium on Olfaction and Taste. Stockholm, Sweden

PRESENTATIONS (*denotes undergraduate student authors)

Cannizzaro DN*, Naughton LF*, **Pask GM.** Making Sense of Evolution: Deciphering the Rapid Expansion of Ant Pheromone Receptors. 2020. Society for Integrative and Comparative Biology Annual Meeting. Austin, Texas

Naughton LF*, Cannizzaro DN*, **Pask GM.** One Big, Smelly Family: Decoding the Olfactory Receptors in the Indian Jumping Ant. 2020. Society for Integrative and Comparative Biology Annual Meeting. Austin, Texas

Pask GM. Working to Learn: Applying Labor-Based Assessment to Scientific Writing and Laboratory Courses. 2020. Society for Integrative and Comparative Biology Annual Meeting. Austin, Texas

Longo JN*, Ham KM*, Pomonis BL*, **Pask GM.** Decoding the Ant Sniffer: Functional Characterization of Odorant Receptors in *Harpegnathos saltator*. 2019. Association of Chemoreception Studies Annual Meeting. Bonita Springs, Florida.

Witherell H*, Hoffman L*, Ellis E*, **Pask GM,** Schreiber WB. Effects of Fixed-Trial Stimulus Exposures on Exploratory and Avoidance Responding in *Pogonomyrmex occidentalis*. 2019. L. Starling Reid Undergraduate Psychology Research Conference. Charlottesville, Virginia.

Kittredge MJ*, Hawk A*, Meng O*, Lamparter M, Thul T, **Pask GM**. Creeping on Ants: Developing the PiSpy, an Affordable and Flexible Video Recording Platform for Monitoring Animal Behavior. 2019. Association of Chemoreception Studies Annual Meeting. Bonita Springs, Florida.

Kittredge MJ*, Hawk A*, Meng O*, Lamparter M, Thul T, **Pask GM**. PiSpy: Affordable Video Rig for Monitoring Animal Behaviors. 2019. Society for Integrative and Comparative Biology Annual Meeting. Tampa, Florida

Courts LG*, Kittredge MJ*, **Pask GM**. Cracking the CHC Code: Olfactory Communication in the Eusocial *Harpegnathos saltator*. 2019. Society for Integrative and Comparative Biology Annual Meeting. Tampa, Florida

Pask GM, Slone JD, Millar JG, Das P, Moreira JA, Zhou X, Bello J, Liebig J, Zwiebel LJ, Ray A. How to Smell Your Sisters: Detection of Cuticular Hydrocarbon Pheromones in Ants. 2018. Society for Integrative and Comparative Biology Annual Meeting. San Francisco, California

Pask GM, Millar JG, Slone JD, Das P, Moreira JA, Zhou X, Bello J, Zwiebel LJ, Ray A. The Molecular Basis of Cuticular Hydrocarbon Detection in the Ant *Harpegnathos saltator*. 2016. European Meeting of the International Union for the Study of Social Insects. Helsinki, Finland

Pask GM. How To Smell Your Sisters: Discovering Pheromone Receptors in Ants. 2015. Washington & Lee University Biology Seminar Series. Lexington, Virginia.

Pask GM. How To Smell Your Sisters: The Molecular Basis of Pheromone Detection in Ants. 2015. 2nd Annual Center for Plant Cell Biology Postdoc Symposium. Riverside, California

Pask GM and Zwiebel LJ. Exploring Insect Odorant Receptor Function Through the Use of Novel Chemical Modulators. 2012. Vanderbilt Institute of Chemical Biology Student Symposium. Nashville, Tennessee

Pask GM, Jones PL, Zwiebel LJ. Using Drug Discovery Techniques To Develop Novel Mosquito Repellents. 2011. Invited seminar at Muhlenberg College. Allentown, Pennsylvania

Pask GM, Jones PL, Zwiebel LJ. A Novel Characterization of an Insect Odorant Receptor as an Ion Channel. 2011. Keystone Symposia Conference: Transmembrane Signaling by GPCRs and Channels. Taos, New Mexico

EXTERNAL GRANT SUPPORT

- 2021 NSF Continuing Grant from the Division of Integrative Organismal Systems [2035239]
Collaborative Research: RUI: From Molecules to Mating: An Integrative Approach to Understanding Chemical Signal Evolution in Fireflies
\$268,261 over five years
- 2019 New Investigator Research Grant from the Charles E. Kaufman Foundation
Eavesdropping on Ants: The Molecular Basis of Chemical Communication in Social Insects
\$150,000 over two years (declined support for Year 2)
- 2011 NIH Pre-doctoral National Research Service Award from the NIDCD [DC011989]
Examination of the Molecular Mechanisms of Mosquito Odorant Receptors
\$78,480 over three years

INTERNAL GRANT SUPPORT

- 2019 Scadden Research Fellowship from Bucknell University
From Molecules to Mating: The Evolution of Chemical Signaling in Fireflies
\$5,000

PATENTS

- 2017 Zwiebel LJ, **Pask GM**. *Thermal volatilization of orco agonists*. Pat. No. WO2017011466A1
- 2015 Takken W, Van Loon JJA, Zwiebel LJ, **Pask GM**, Mukabana WR. *Insect repellent compositions and methods of use*. Pat. No. WO2015063238A1
- 2012 Zwiebel LJ, **Pask GM**, Rinker DC, Romaine IM, Sulikowski GA, Reid PR, Waterson AG, Kim K, Jones PL, Taylor RW. *Compositions For Inhibition Of Insect Sensing*. Pat. No. WO2012154403A3
- 2012 Zwiebel LJ, **Pask GM**, Rinker DC, Jones PL. *Compositions For Inhibition Of Insect Host Sensing*. Pat. No. WO2012061039A2

RESEARCH COURSEWORK

- 2011 Insect Chemical Ecology Ph.D. Course
Swedish University of Agricultural Sciences, Alnarp, Sweden

MEDIA COVERAGE RELATED TO RESEARCH

Development of VUAA1 insect repellent: CNN, ABC News, Discover Magazine, Popular Science, Bloomberg, Daily Mail

Characterization of Ant Odorant Receptors: Smithsonian, Futurity, Salon, PNAS Commentary, Science Daily, Standard Journal

Podcast Guest on the Arthro-Pod (episode 73) and The Smell Podcast (episode 74)

TEACHING

TEACHING EXPERIENCE

Middlebury College 2020 – present
Invertebrate Biology, Cell Biology & Genetics, Receptor Biology, Entomology

Bucknell University 2017 – 2020
Neural Cell Biology, Neurophysiology Laboratory, Cell and Molecular Neurobiology, Molecules and Cells Laboratory, Receptors of Biological Membranes

Washington & Lee University 2015 – 2017
Genetics, Genetics Laboratory, Membrane Pharmacology, Experimental Insect Behavior, and Breaking Bugs: Managing Insect Pests

Vanderbilt University (as teaching assistant) 2009 – 2011
Biological Sciences Laboratory

RESEARCH ADVISING AND MENTORING

Middlebury College

Zachary Sieb (Neuroscience major)	2021-present
Tobias Ziemke (Molecular Biology and Biochemistry major)	2021-present
Daphné Halley (Conservation Biology major) °	2021-present
Hannah Gellert (Biology major)	2021-present
Aiden Masters (Molecular Biology and Biochemistry major) °	2020-present
Ben Morris (Molecular Biology and Biochemistry major) #°	2020-present

Bucknell University

Seoyeon Kim (Neuroscience major) [!]	2019-2020
Niki Marathe (Neuroscience major)	2019-2020
Joanna Raup-Collado (Neuroscience major) °&	2019-2020
Deanna Cannizzaro (Neuroscience major) #°	2019-2020

Lydia Naughton (Neuroscience major) ^{#°}	2019-2020
Bea Casey (Computer Science major) ^{#°}	2019-2020
Jenna Longo (Biology major) ^{*\$}	2018-2019
Marcy Kittredge (Neuroscience major) ^{**^°\$}	2018-2020
Bri Pomonis (Neuroscience major) [°]	2018-2019
Lilly Courts (Biology major) ^{**^°\$}	2017-2019
Laura Charos (Neuroscience major)	2018
Kendall Ham (Biology major)	2017-2018

Washington & Lee University

Chris Myers (Neuroscience major)	2016-2017
Sarah Reed (Neuroscience major) ^{*°}	2016-2017
Allison Rutledge (Neuroscience major) [°]	2016-2017

University of California, Riverside

Careen Khachatoorian (Ph.D. student in CMD program)	2014
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Vanderbilt University

Stephen Derryberry (Molecular and Cellular Biology major) ^{^°}	2011-2013
Winston Hale (Biology major)	2011
Brandon Turner (Ph.D. student in IGP program)	2012

* *presented at a national conference*

presented at local meeting

^ *received a presentation award*

° *awarded funding for summer research*

\$ *awarded travel funds*

! *Presidential Fellow*

& *STEM Scholars Program for incoming first-year students*

TEACHING DEVELOPMENT

2021	Middlebury CTLR Learning Institute: Educational Inequities and the Pandemic
2021	Ungrading Reading Group - <i>Ungrading: Why Rating Students Undermines Learning (and What to Do Instead)</i>
2020-present	STEM Pedagogy workgroup
2020	Inclusive Practitioners Program Anti-Racism Summer Workshops
2019	B-Fab Bucknell Fabrication Workshop at Bucknell University
2018	Labor-based Contract Grading Workshop at Bucknell University
2017	CrawFly Invertebrate Neurophysiology Course at Cornell University
2017	Teaching of Writing Workshop at Bucknell University

SERVICE**PROFESSIONAL SERVICE**

2021 Career Seminar at University of California Riverside
 2019 Academic Careers Panel at AChemS
 2019-2021 Social Media Team for AChemS
 2018 Invited blog post for the SICB
 2018-2020 Judge for student presentations at SICB annual meeting

Manuscript Reviewer for *PLOS Genetics*, *Nature Communications*, *Cell Reports*, *Scientific Reports*, *Insect Biochemistry and Molecular Biology*, *Frontiers in Physiology*, *Frontiers in Ecology and Evolution*, *Current Opinion in Insect Science*, *Parasites and Vectors*, *Biological Reviews*, *Journal of Medical Entomology*, *iScience*, *Chemical Senses*, *American Journal of Undergraduate Research*

COLLEGE SERVICE

2021-present Institutional Biosafety Committee
 2020 Panelist for Ungrading Discussion during CTLR Learning Institute
 2020 Presented on Non-traditional Grading Approaches in STEM Pedagogy group
 2019 First-year Common Reading Discussion Leader
 2019 Coordinator of Biology Brown Bag Lunch Talks
 2019 Led the Biology Writing Assessment Plan for the Writing Across the Curriculum Council
 2019 Visiting Assistant Professor (Neuroscience and Psychology) Search Committee Member
 2019 Visiting Assistant Professor (Neurobiology) Search Committee Member
 2019 STEM Scholars Mentor
 2018-2020 Faculty Mentor for Softball Team
 2018 Committee on Instruction (COI) Member
 2018 Visiting Assistant Professor (Cell & Molecular Biology) Search Committee Member
 2018-2020 Writing Across the Curriculum Council Member
 2017-2020 Graduate School Advisor for Biology and Cell Biology/Biochemistry majors
 2017 Presentation at the Faculty Learning Series on the teaching of discipline-specific writing

OUTREACH

2021	MiddChat Interview on Discord and Twitch
2020-2021	Led two virtual Q&As on insects and senses for Community Friends
2020	Skype-A-Scientist Live on Ants
2020	Insect Demonstration for STEAM DAY at Line Mountain Elementary
2019-2020	PA Firefly Festival Educational Outreach Team Member
2019	Neurophysiology Demonstration for STEAM DAY at Line Mountain Elementary
2019	Letters to a Pre-Scientist Pen Pal
2018	Neuroscience Outreach at Milton and Shikellamy High Schools
2018-present	Skype-A-Scientist Q&A sessions with K-12 classrooms from USA, Canada, and Morocco
2017-present	Blacklighting for Insect Observation nights with area youth
2015	Assisted classroom at Mary McLeod Bethune Elementary during Innovate, Design, Create Day on insects
2015	Contributed to the Annual Riverside Insect Fair
2014	Introduced home school co-op students interested in science to laboratory research

PROFESSIONAL ASSOCIATIONS

Society of Integrative and Comparative Biology (SICB)
Association of Chemoreception Sciences (AChemS)
Entomological Society of America (EntSoc)
Council of Undergraduate Research (CUR)