CHRISTINA M GROZINGER Curriculum Vitae

Pennsylvania State University, 401G Life Sciences Building, University Park, PA 16802
cmg25@psu.edu; 814-321-3082

EDUCATION

1997 BSc, McGill University, Montreal, Quebec, Canada, (Chemistry, Honours; Biology, Major with Great Distinction; Certificate of Proficiency in German
1999 MA, Harvard University, Cambridge, MA (Chemistry)
2001 PhD, Harvard University, Cambridge, MA (Chemistry)

PROFESSIONAL EXPERIENCE / APPOINTMENTS

Current Publius Vergilius Maro Professor, Pennsylvania State University
Director, Huck Institutes of the Life Sciences (since 2025)
2009-2025 Director, Center for Pollinator Research
2019-2025 Director, Insect Biodiversity Center
2015-2020 Distinguished Professor of Entomology, Pennsylvania State University
2013-pres. Professor, Entomology Dept, Huck Institutes of the Life Sciences, Penn State
2008-2013 Associate Professor, Entomology Dept, Huck Institutes of the Life Sciences, Penn State
2004-2008 Assistant Professor, Insect Genomics; Depts of Entomology and Genetics; W.M. Keck Center for Behavioral Biology; North Carolina State University
2001-2004 Beckman Institute Fellow; Beckman Institute for Advanced Science and Technology; Dept of Entomology, University of Illinois, Urbana-Champaign (mentor: Gene Robinson)

AWARDS (selected)

2023 Penn State President's Award for Excellence Academic Integration
2021 National Academy of Sciences Prize in Food and Agriculture Science
Senior Fellowship in the Freiburg Research Collaboration Program (FRESCO) at the Freiburg Institute for Advanced Studies (2021-2025)
2019 Eastern Branch Entomological Society of America's L.O. Howard Award
Fellow, American Association for the Advancement of Science
2018 Fellow of the Entomological Society of America
Evolutionary Think Tank Fellow, University of Muenster, Germany
Penn State Outstanding Postdoc Mentor Award
2017 Penn State Division of Development and Alumni Relations Outstanding Support Award
2016 Penn State Alex and Jessie C. Black Award for Excellence in Research
2013 James I. Hambleton Award, Eastern Apicultural Society of North America
2008 NSF Faculty Early Career Development (CAREER) Award
2001-2004 Beckman Institute Fellowship
2001 Thomas T. Hoopes Prize in Teaching
1998, 2000 Harvard University Certificate of Distinction in Teaching
1997-2000 National Science Foundation (NSF) Graduate Research Fellowship

RESEARCH AND SCHOLARSHIP

Expertise. Grozinger has expertise in behavior, health and conservation of managed bees and wild bees. Her research spans ecology, animal behavior, chemical ecology, evolutionary biology, physiology and genomics, and, more recently, leveraging artificial intelligence and machine learning to monitor, model and forecast how bee species and communities respond to environmental factors, including land use, weather and climate. Since 2020, she has published 62 peer-reviewed papers (168 total), 2 book chapters (6 total), 1 book, 8 extension articles, and given 36 invited presentations at universities/conferences. Her Google Scholar Citation Index is 19923 citations, h-index of 62, and i10 index of 149.

Selected current and recent grants.

- 2023-2028 Interdisciplinary Studies in Entomology, Computer Science and Technology NETwork. NSF Research Traineeship Program. **PI Grozinger**, 9 coPIs. $3,000,000 and 250,000 NSF INCLUDES Research Experience and Mentoring supplement

- 2022-2024 INterdisciplinary Studies in Science, Education, Communication and Technology.
- NETwork (INSSECT NET). Sloan Foundation EPP. PI **Grozinger**, coPIs: coPIs: PSU: Ali, Boyle, Felton, Ingram, James, CSU: Li-Byarlay Chowan: Gill, UMES: Zebelo. $75,000
- 2021-2025 Beescape NexGen: Creating Decision Support Tools to Manage Bee Health and Ecosystems through Transdisciplinary Action. USDA-NIFA-FACT. PI **Grozinger**, coPI Robinson (Penn State), Khanna (U Pittsburgh), Lonsdorf (U Minnesota), Senior Personnel Goslee (USDA-ARS). $949,000
- 2021-2025. Friends with benefits? A holistic approach to diffuse mutualism in plant-pollinator interactions. Human Science Frontiers Program. PI Sicard (Swedish University of Ag Sciences) coPI **Grozinger**, Risse (U Muenster). $1,095,000
- 2021-2025. AGricultural Science in Elementary EDucation –Learning IN Gardens at School (AG SEED-LINGS). USDA-EWD- Professional Development for Agricultural Literacy. PI: Hill (Penn State), coPIs: Boyle, Cesare, **Grozinger**, Patch, $300,000

TEACHING/ MENTORSHIP

Selected courses

2013-present ENT 222 Honey Bees and Humans (co-taught with Patch)
2014-present ENT 522 Critical Thinking and Professional Development (co-taught with 2 instructors)
2023-present ENT 530 and 597 Technology in Living Systems (co-taught with Boyle)

Mentoring

High School Students (PSU/NCSU): 2, first and second place at regional science fairs
Undergraduates (PSU/ NCSU): 62, including students from NSF ADVANCE program (3), SROP program (3), Millennium Scholars (1), McNair Program (1), Barry Goldwater Scholarship (1). 20 received undergraduate research awards.
Graduate Students (committee chair, PSU/NCSU): 31 total (19 PhD, 11 MSc); 2 PhD and 2 MSc currently. Awards include NSF- and USDA-AFRI Predoctoral Fellowships (7), Fulbright (1), Sloan (1) Outstanding Graduate Theses awards (NCSU and PSU), Sigma Xi (5), NE SARE Graduate Research Fellowship (4), etc.
Graduate Students (committee member, PSU/NCSU): 33 total (25 PhD, 8 MSc).
Postdoctoral Fellow Training (PSU/NCSU): 20 total, 1 currently. Three received USDA Postdoctoral Research Fellowships, one a US-Israel Vaadia-BARD fellowship, one a NSF Postdoctoral Fellowship and one a PSU Presidents' Fellowship.

PROFESSIONAL ACTIVITIES

Service to the Scientific Community (selected).

- Chair of the USDA National Agricultural Research, Extension, Education, and Economics Advisory Board Pollinator Subcommittee (2024-present)
- Served on Editorial Boards for Annual Review of Entomology (2018-2027, co-chair from 2021-2027), Journal of Insect Physiology (2012-2022), Behavioral Ecology and Sociobiology (2013-2019), Insect Biochemistry and Molecular Biology (2015-2019)
- Served as Panel Manager for USDA-NIFA Pollinator Health Program (2019, 2020)
- Served on Entomological Society of America's Insect Biodiversity and Pollinator Position Statement Writing Group (2015, 2019, 2021), Pollinator Committee (2016-2019), Science Policy Committee (2019-2021)

Conferences and Workshops Organized (selected). Co-organized or served on steering committee for: International Conference on Pollinator Biology, Health and Policy (2026, 2023, 2019, 2016, 2013, 2011); Apimondia International Apicultural Congress (2019); International Congress of Entomology (2016); coPI for 'Putting pesticides on the map to guide conservation of pollinators and their ecosystem services' (NSF SESYNC, Maryland, 2017-2019) and "sBombus: Leveraging Artificial Intelligence for Global Bumble Bee Monitoring and Conservation" (iDiv, Leipzig, Germany, 2024-2027). Fellow for Research Corporation for Science Advancement "Neurobiology and Changing Ecosystems" (2024-present).

SELECTED PEER-REVIEWED PUBLICATIONS

Mokkapati Sravanthi J., Hill, M., Boyle, N., Ouvrad, P., Sicard, A., and **C.M. Grozinger**. "Foraging bee species differentially prioritize quantity and quality of floral rewards" *PNAS Nexus* Volume 3, Issue 10, October 2024, pgae443, https://doi.org/10.1093/pnasnexus/pgae443 (2024)

McNeil, D. J., Goslee, S. C., Kammerer, M., Lower, S. E., Tooker, J. F., **Grozinger, C. M**. "Illuminating patterns of firefly abundance using citizen science data and machine learning models". *Science of The Total Environment*, *929*, 172329. https://doi.org/10.1016/j.scitotenv.2024.172329 (2024)

Ray, A.M., Gordon, E.C., Seeley, T.D., Rasgon, J.L. and **C.M. Grozinger**. "Signatures of adaptive decreased virulence of deformed wing virus in an isolated population of wild honey bees (*Apis mellifera*)" *Proceedings of the Royal Society B* 290(2009). https://doi.org/10.1098/rspb.2023.1965 (2023).

Quinlan, G. M., Miller, D.A.W., and **C.M. Grozinger**. "Examining spatial and temporal drivers of pollinator nutritional resources: Evidence from five decades of honey bee colony productivity data" *Environmental Research Letters* 18(11): 114018 **DOI** 10.1088/1748-9326/acff0c (2023).

Bresnahan, S. T., Galbraith, D., Ma, R., Anton, K., Rangel, J., and **C.M. Grozinger**. "Beyond conflict: kinship theory of intragenomic conflict predicts individual variation in altruistic behavior" *Molecular Ecology* 32, 5823–5837. https://doi.org/10.1111/mec.17145 (2023).

Erickson, E., Junker, R.R., Ali, J.G., McCartney, N., Patch, H.M., and **C.M. Grozinger**. "Complex floral traits shape pollinator attraction to ornamental plants" *Annals of Botany* mcac082, https://doi.org/10.1093/aob/mcac082 (2022).

Kammerer, M., Goslee, S., Douglas, M.R., Tooker, J.F., **Grozinger, C.M.** "Wild bees as winners and losers: relative impacts of landscape composition, quality, and climate." *Global Change Biology* January 12 https://doi.org/10.1111/gcb.15485 (2021).

Grozinger C.M. and A. Zayed. "Genomics for understanding and improving pollinator health in a world of multiple stressors" *Nature Reviews Genetics* 21: 277–291 DOI: 10.1038/s41576-020-0216-1 (2020).

Douglas, M.R., Sponsler, D.B., Lonsdorf, E.V. and **C.M. Grozinger**. "County-level analysis reveals a rapidly shifting landscape of insecticide hazard to honey bees (*Apis mellifera*) on US farmland" *Scientific Reports* 10(1), 1-11 https://doi.org/10.1038/s41598-019-57225-w (2020).

Sponsler, D.B., **Grozinger, C.M.,** Hitaj, C., Rundlöf, M., Botías, C, Code, A., Lonsdorf, E.V., Melathopoulos, A.P., Smith, D.J., Suryanarayanan, S., Thogmartin, W.E., Williams, N.M., Zhang, M., and M. R. Douglas. Pesticides and pollinators: a socioecological synthesis. *Science of the Total Environment* 662: 1012-1027 https://doi.org/10.1016/j.scitotenv.2019.01.016 (2019).

Grozinger C.M. and Flenniken, M.L.. "Bee Viruses: Ecology, Pathogenicity, and Impacts". *Annual Review of Entomology* 64: 205-226 https://doi.org/10.1146/annurev-ento-011118-111942 (2019).

Galbraith, D. A., Z. L. Fuller, A. Brockman, M. Frazier, M. W. Gikungu, K. M. Kapheim, J. T. Kerby, S. D. Kocher, O. Losyev, E. Muli, H. M. Patch, J. M. Sakamoto, S. Stanley, A. D. Vaudo and **C. M. Grozinger**. "Investigating the viral ecology of global bee communities with high-throughput metagenomics " Scientific Reports 8 (1): 8879 https://doi.org/10.1038/s41598-018-27164-z (2018)

Vaudo, A.D., Patch, H.M., Mortensen, D.A., Tooker, J.F., and **C.M. Grozinger**. "Macronutrient ratios in pollen shape bumble bee (*Bombus impatiens*) foraging strategies and floral preferences." *Proceedings of the National Academy of Sciences* 113(28): E4035–E4042 https://doi.org/10.1073/pnas.160610111 (2016).

Galbraith, D.A., Kocher, S.D., Glenn, T., Albert, I., Hunt, G.J., Strassmann, J.E., Queller, D.C., and **C.M. Grozinger.** "Testing the kinship theory of intragenomic conflict in honey bees (*Apis mellifera*)." *Proceedings of the National Academy of Sciences* 113(4):1020-1025 https://doi.org/10.1073/pnas.151663611 (2016).