YOLANDA H. CHEN

Dept. of Plant and Soil Science
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PROFESSIONAL APPOINTMENTS

2018-present	Gund Fellow, Gund Institute for the Environment, University of Vermont
2016	Visiting Scientist, Laboratorio Nacional de Genómica para la Biodiversidad, (LANGEBIO) - Cinvestav Irapuato, Mexico
2015-present	Associate Professor, Department of Plant and Soil Sciences, University of Vermont, Burlington, VT
2008-2015	Assistant Professor, Department of Plant and Soil Sciences, University of Vermont, Burlington, VT
2004-2007	Entomologist-Host Plant Resistance, International Rice Research Institute, Los Baños, Philippines
2001-2003	USDA Postdoctoral Fellow, University of California, Berkeley, CA
1996-2001	NSF Predoctoral Fellow and Graduate Student Researcher, University of California, Berkeley, CA

EDUCATION

2001	Ph. D. in Environmental Science, Policy, and Management, University of California, Berkeley
1995	B. Sc. (Natural Resource Management) *summa cum laude* Rutgers University, New Jersey

SELECTED GRANTS (Last 3 years)

Chen, Y. H. (PI) and S. D. Schoville (co-PI). 2022-2027. Evaluating the role of epigenetics in the evolution of insecticide resistance. $683,490. USDA AFRI Pests and Beneficial Species Program.

***Swan, A.** and **Y. H. Chen**. 2021-2023**.** Developing a plant-based attractant to trap swede midge, *Contarinia nasturtii* (Diptera: Cecidomyiidae). Northeast Graduate Student Research Grant. NE SARE $14,438.

Chen, Y. H. 2021-2024. Developing a plant-based lure for the swede midge, an invasive pest of Brassica crops. Vermont Specialty Crop Block Grant. $44,310.

Chen, Y. H. and **E. Bueno***. 2020-2024. Evaluating cross-tolerance to stress in the Colorado potato beetle, *Leptinotarsa decemlineata.* Howard Hughes Medical Institute Gilliam Fellowship. $150,000. Awarded to mentor/mentee teams.

Chen, Y. H., S. Schoville, and S. McKay**.** 2019-2022**.** Evaluating cross-tolerance to stress in the Colorado potato beetle, *Leptinotarsa decemlineata*. Vermont Agricultural Experiment Station Hatch Award. $60,000.

Chen, Y. H. (PI) and D. Tobin (co-PI) 2019-2021. Identifying hotspots for agrobiodiversity in Mexico, a major center of crop origin. Gund Institute Catalyst Award. $50,000.

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Chen, Y. H. (PI) 2018-2021. Identifying hotspots for agrobiodiversity in Mexico, a major center of crop origin. Conservation, Food and Health Foundation. $29,916

Del Maestro (PI), A., H. Garavan, **Y. Chen** (Co-PI), J. Vanegas, and J. Bongard. 2018-2020. MRI: Acquisition of a GPU Accelerated Vermont Advanced Computing Core. NSF Office of Advanced Cyberinfrastructure. $893,120

Chen, Y. H. (PI) 2018-2021. Potential for a pheromone mating disruption program for the invasive swede midge within complex annual rotational system. Northeastern Sustainable Agriculture Research and Education Program Novel Approaches. $199,854.

Chen, Y. H. and C. Hoepting. (PI) 2018-2019. Testing ground barriers for swede midge IPM on at-risk small-scale brassica farms. Northeast Integrated Pest Management Partnership Grant. $50,000.

Jansky, S., S. Schoville, R. Groves, **Y. Chen** (Collaborator), D. Hawthorne, A. Alyokhin, and S. Rondon. 2017-2018. Identification and knock-down of pesticide resistance genes in Colorado potato beetle. USDA-ARS State Partnership Potato Program 5090-21220-002-00D. $89,000.

RECENT PUBLICATIONS (Last three years. *graduate student, ^undergraduate student)

***Hodgdon, E. A.**, R. H. Hallett, J. D. Heal, ***C. A. Stratton**, C. A. Hoepting, and **Y. H. Chen**. Submitted. Field tests of candidate pheromone blends show promise for mating disruption of the invasive swede midge (Diptera: Cecidomyiidae). The Canadian Entomologist.

Mastretta-Yanes, A., D. Tobin, A. Cibrián-Jaramillo, E. von Wettberg, M. R. Bellon, A. Wegier, A. S. Monroy-Sais, N. Gálvez-Reyes, **J. Ruiz-Arocho***, and **Y. H. Chen**. Submitted. Human management of ongoing evolutionary processes in agroecosystems. Preproposal accepted at Proceedings of the the Royal Society B.

Cohen, Z., **Y. H. Chen**, R. Groves, and S. D. Schoville. Submitted. Selective sweeps, demography and recombination illuminate rapid adaptation in two divergent Colorado potato beetle populations. Invited contribution Evolution in Agricultural Systems Special Issue. Evolutionary Applications.

Pélissié, B., **Y. H. Chen**, Z. P. Cohen, M. S. Crossley, D. J. Hawthorne, V. Izzo, S. D. Schoville. 2022. Genome resequencing reveals rapid, repeated evolution in the Colorado potato beetle, *Leptinotarsa decemlineata*. Molecular Biology and Evolution 30(2): msac016, https://doi.org/10.1093/molbev/msac016

Shafer, P. J., T. Reynolds, **Y. H. Chen**, and E. J. B. von Wettberg. 2022. Farm to institution to farm: Circular food systems with native entomoculture. Frontiers in Sustainable Food Systems.5: . 10.3389/fsufs.2021.721985

Margus, A., S. Piiroinen, P. Lehmann, A. Grapputo, I. Ovcarenko, L. Gilbert, **Y. H. Chen**, and L. Lindström. 2021. Qualitative and quantitative differences in the acetylcholinesterase genes can partly explain the resistance differences in *Leptinotarsa decemlineata*

populations. Ecology and Evolution 11(22): 15995-16005. http://doi.org/10.1002/ece3.8269

Mori, B. A., C. Coutu, **Y. H. Chen**, E. O. Campbell, J. R. Dupuis, M. A. Erlandson, and D. D. Hegedus. 2021. De novo whole genome assembly of the swede midge (Contarinia nasturtii), a specialist of Brassicaceae, using linked-read sequencing. Genome Biology and Evolution. 13(3):evab036. DOI: 10.1093/gbe/evab036. IF = 3.41, 20/50 Evolutionary Biology

Brevik, K., E. M. Bueno, S. McKay, S. D. Schoville, and **Y. H. Chen**. 2021. Insecticide exposure affects intergenerational patterns of DNA methylation in the Colorado potato beetle, *Leptinotarsa decemlineata.* Evolutionary Applications. 14(3):746-757.

Cohen, Z. P., **K. Brevik, Y. H. Chen**, D. J. Hawthorne, B. D. Weibel, and S. D. Schoville. 2021. Elevated rates of positive selection drive the evolution of pestiferousness in the Colorado potato beetle (*Leptinotarsa decemlineata*, Say). Molecular Ecology 30(1): 237-254.

Hodgdon, E. A., R. H. Hallett, J. D. Heal, **A. E. M. Swan**, and **Y. H. Chen**. 2020. Synthetic pheromone exposure increases calling and reduces subsequent mating in female *Contarinia nasturtii* (Diptera: Cecidomyiidae). Pest Management Science 77(1): 548-556.

Thomas, G. W. C., Dohmen, E., Hughes, D. S. T., Murali, S. C., Poelchau, M., Glastad, K., Anstead, C. A., Ayoub, N. A., Batterham, P., Bellair, M., Binford, G. J., Chao, H., **Chen, Y. H.**, Childers, C., Dinh, H., Doddapaneni, H. V., Duan, J. J., Dugan, S., Esposito, L. A., … Richards, S. (2020). Gene content evolution in the arthropods. Genome Biology, 21(1), 15. https://doi.org/10.1186/s13059-019-1925-7. IF = 13.58, 6/175 Genetics & Heredity

Stratton, C. A., **E. Hodgdon**, C. Rodriguez-Saona, A. M. Shelton, and **Y. H. Chen**. 2019. Odors from phylogenetically-distant plants to Brassicaceae repel an herbivorous Brassica specialist. Scientific Reports. 9: 10621.

Hodgdon, E. A., R. H. Hallett, K. F. Wallin, **C. A. Stratton**, and **Y. H. Chen**. 2019. Racemic pheromone blends disrupt mate location in the invasive swede midge, Contarinia nasturtii. Journal of Chemical Ecology 45(7): 549–558.

Hodgdon, E. A., R. H. Hallett, **C. A. Stratton**, and **Y. H. Chen**. 2019. Diel patterns of emergence and reproductive behaviour in the invasive swede midge (Diptera: Cecidomyiidae). Canadian Entomologist 151(4): 510-520. https://doi.org/10.4039/tce.2019.21.

Chen, Y. H., **J. Ruiz-Arocho***, E. J. B. von Wettberg. 2018. Crop domestication: Anthropogenic effects on insect-plant interactions in agroecosystems. Current Opinion in Insect Science 29: 56-63.

Stratton, C. A.*, **E. A. Hodgdon***, **S. G. Zuckerman^**, A. M. Shelton, and **Y. H. Chen**. 2018. A single swede midge (Diptera: Cecidomyiidae) can render cauliflower unmarketable. Journal of Insect Science 18(3): 1-6.

Chen, Y. H. and S. D. Schoville. 2018. Editorial Overview: Ecological adaptation in agroecosystems: Novel opportunities to integrate evolutionary biology and agricultural

entomology. Overview for Special Issue titled, "Ecological Adaptation in Agroecosystems". Current Opinion in Insect Science. 26: iv-viii.

Brevik, K.*, L. Lindström, S. D. McKay, and **Y. H. Chen**. 2018. Transgenerational effects of insecticides – implications for rapid pest evolution in agroecosystems. Special Issue, "Ecological Adaptation in Agroecosystems". Current Opinion in Insect Science. 26:34-40. https://doi.org/10.1016/j.cois.2017.12.007.

Hernandez-Cumplido, J., M. Giusti, Y. Zhou, V. Kyryczenko-Roth, **Y. H. Chen** and C. Rodriguez-Saona. 2018. Testing the 'plant domestication-reduced defense' hypothesis in blueberries: The role of herbivore identity. Arthropod-Plant Interactions. 12(4): 483-493.

Brevik, K.*, S. D. Schoville, D. Mota-Sanchez, and **Y. H. Chen.** 2018. Pesticide durability and the evolution of resistance: A novel application of survival analysis. Pest Management Science 74(9):1953-1963. 10.1002/ps.4899.

Schoville, S. D., **Y. H. Chen**, M. N. Andersson, J. B. Benoit, A. Bhandari, J. H. Bowsher, **K. Brevik***, K. Cappelle, M-J. M. Chen, A. K. Childers, C. Childers, O. Christiaens, J. Clements, E. N. Elpidina, P. Engsontia, M. Friedrich, I. García-Robles, C. Goswami, A. Grapputo, K. Gruden, M. Grynberg, B. Henrissat, E. C. Jennings, J. W. Jones, M. Kalsi, S. A. Khan, A. Kumar, F. Li, V. Lombard, X. Ma, A. Martynov, N. J. Miller, R. F. Mitchell, M. Munoz-Torres, A. Muszewska, Brenda Oppert, S. R. Palli, K. A. Panfilio, Y. Pauchet, L. C. Perkin, M. Petek, M. F. Poelchau, E. Record, J. P. Rinehart, H. M. Robertson, A. J. Rosendale, V. M. Ruiz-Arroyo, G. Smagghe, Z. Szendrei, E. M. Szuter, G. W. C. Thomas, A. S. Torson, I. M. Vargas Jentzsch, M. T. Weirauch, A. D. Yates, G. D. Yocum, J-S Yoon, Stephen Richards. 2018. A model species for agricultural pest genomics: the genome of the Colorado potato beetle, *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae). Scientific Reports 8: 1931.

Izzo, V., Y. H. Chen, S. D. Schoville, C. Wang, D. J. Hawthorne. 2018. Origin of pest lineages of the Colorado potato beetle, *Leptinotarsa decemlineata.* Journal of Economic Entomology. 111(2): 868-878.

Bernal, J. S., A. M. Dávila-Flores, R. F. Medina, **Y. H. Chen**, K. E. Harrison, and K. A. Berrier. 2018. Did maize domestication and early spread mediate the population genetics of corn leafhopper? Insect Science. 26(3): 569-586. DOI 10.1111/1744-7917.12555.

TEACHING

PSS 106 Entomology and Pest Management (4 credits) 2013-present
PSS 232 Biological Control (3) spring 2010-present, alternating years
PSS 298 Ecological Frontiers in Agroecology (3) 2019

MEMBERSHIPS AND PROFESSIONAL SERVICE

Guest Editor, Current Opinion in Insect Science. Special Issue, "Ecological Adaptation in Agroecosystems". April 2018, Issue 26.

Organizer, Ecology, Evolution and Environmental Biology Lunch (Triple EB lunch seminar) at University of Vermont 2014-2019

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Membership in Professional Associations
Entomological Society of America (since 1996)
500 Women Scientists – since 2017
National Center for Faculty Development and Diversity – since 2019

Affiliations in University of Vermont
Food Systems Graduate Group – Faculty
Quantitative and Evolutionary STEM Training (QuEST) Program Faculty – Fall 2018

Affinity Group Membership in University of Vermont Affinity Groups
UVM Faculty of Color – 2016 – present
Currently co-leading efforts to organize BIPOC faculty and staff on campus

MISCELLANEOUS
Languages: English, Mandarin Chinese, Spanish