CURICULUM VITAE

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Education

1984 Doctor of Philosophy (Biology, Entomology Concentration)
SUNY College of Environmental Science and Forestry, Syracuse, New York

1981 Master of Science (Biology, Entomology Concentration)
SUNY College of Environmental Science and Forestry, Syracuse, New York

1978 Bachelor of Science (Environmental Biology)
Juniata College, Huntingdon, Pennsylvania

Professional Employment

Jan. 2015	Donald Wilbur Endowed Professor of Stored Product Protection, Department of Entomology, Kansas State university, Manhattan, KS
July 2007-Date	Professor, Department of Entomology (Dept. Head July 2007-March 2011) Kansas State University, Manhattan, KS.
Oct. 1996-June 2007	Assoc. Professor and Professor (2002), Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK.
July 1990-Oct. 1996	Research Entomologist, USDA ARS Stored-Product Insect Research Unit, Madison, WI; joint appointment as tenure-track Assistant Professor, Department of Entomology, University of Wisconsin, Madison, WI. (1990-1994). Tropical Fruit and Vegetable Research Unit, Hilo, HI (1995-1996); GS-13.
Jan.1986-July1990	Postdoctoral Research Associate, Entomology and Nematology Department, University of Florida, Gainesville, FL
June 1984-Dec. 1985	Postdoctoral Research Associate, Dept. of Environmental and Forest Biol. SUNY College of Environmental Science and Forestry, Syracuse, NY (Spring and Summer sessions). Visiting Instructor, Cranberry Lake Biological Station (June 1984); The Ranger School, Forest Technician Program of SUNY College of Environmental Science and Forestry, Wanakena, NY (Fall sessions)
Sept. 1979-May 1984	Graduate Research Assistant, Department of Environmental and Forest Biology, SUNY College of Environmental Science and Forestry, Syracuse, NY (M.S. and Ph.D. programs)

Publications since 2010-Peer Reviewed

82. Adam, B. D., M. Siaplay, P. W. Flinn, B. W. Brorsen and T. W. Phillips. 2010. Factors affecting economic profitability of sampling-based integrated pest management of wheat in country elevators. J. Stored Prod. Res. 46:186-196.

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86. Ghimire, M. N. and T. W. Phillips. 2010. Mass rearing of *Habrobracon hebetor* Say (Hymenoptera: Braconidae) on larvae of the Indianmeal moth, *Plodia interpunctella* (Lepidoptera: Pyralidae): effects of host density, parasitoid density, and rearing containers. J. Stored Prod. Res. 46: 214-220.

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88. Hagstrum, D. W., P. W. Flinn, C. R. Reed and T. W. Phillips. 2010. Ecology and IPM of insects at grain elevators and flat storages. Biopestic. Int. 6: 1-20.

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91. Phillips, T. W. and J. E. Throne. 2010. Biorational Approaches to Managing Stored-Product Insects. Ann. Rev. Entomol. 55: 375-397.

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95. Edde, P. A., M. D. Toews and T. W. Phillips. 2011. Effects of various semiochemicals on the responses of *Rhyzopertha dominica* to pheromone traps in the field. Ann. Entomol. Soc. Am. 104: 1297-1302.

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171. Ramadan, G. R. M., K. Y. Zhu, S. A. M. Abdelgaleil, M. S. Shawir, A. S. El-bakary, P. A. Edde, and T. W. Phillips. 2020. Ethanedinitrile as a fumigant for *Lasioderma serricorne* (Coleoptera: Anobiidae), and *Rhyzopertha dominica* (Coleoptera: Bostrichidae): toxicity and mode of action. J. Econ. Entomol. Online doi: 10.1093/jee/toz343

172. Rogers, W., Campbell, Y. L., Zhang, X., Shao, W., White, S., Phillips, T. W., Schilling, M. W. 2020. The application of food grade short chain fatty acids to prevent infestation of *Tyrophagus putrescentiae* on dry cured ham and the effects on sensory properties. Vol. 89, https://doi.org/10.1016/j.jspr.2020.101684

173. Afful E, Cato, A., Nayak, M. K., Phillips, T. W. 2021. A rapid assay for the detection of resistance to phosphine in the lesser grain borer, *Rhyzopertha dominica* (F.) (Coleoptera: Bostrichidae). J. Stored Prod. Res. Vol. 91. https://doi.org/10.1016/j.jspr.2021.101776

174. Doud, C.W.; Cuperus, G.W.; Kenkel, P.; Payton, M.E.; Phillips, T.W. 2021. Trapping *Tribolium castaneum* (Coleoptera: Tenebrionidae) and other beetles in flourmills: evaluating fumigation efficacy and estimating population density. Insects, 12, 144. https://doi.org/10.3390/insects12020144

175. Hasan, M. M., Aikins , M. J., Schilling, M. W. and Phillips, T. W. 2021. Sulfuryl fluoride as a methyl bromide alternative for fumigation of *Necrobia rufipes* (Coleoptera: Cleridae) and *Tyrophagus putrescentiae* (Sarcoptiformes: Acaridae), major pests of animal-based stored products. J. Stored Prod Res. Vol 91 online https://doi.org/10.1016/j.jspr.2021.101769

176. Manu, N., Schilling, M. W. and Phillips, T. W. 2021. Natural and synthetic repellents for pest management of the storage mite *Tyrophagus putrescentiae* (Schrank) (Sarcoptiformes: Acaridae). Insects. 12, 711. https://doi.org/10.3390/insects12080711

177. Myers, S.W., Ghimire, S. N., Arthur, F. H. and Phillips, T. W. 2021. A Combination sulfuryl fluoride and propylene oxide treatment for *Trogoderma granarium* (Coleoptera: Dermestidae). J. Econ. Entomol. 114: 1489–1495

178. Hasan, M. M., Aikins, M. J., Mahroof, R. M. and Phillips, T. W. 2021. Effects of diet and temperature on the life history of the red-legged ham beetle, *Necrobia rufipes* DeGeer (Coleoptera: Cleridae). Environ. Entomol. 51(1), (2022), 278–285 https://academic.oup.com/ee/article-abstract/51/1/278/6419898

179. Hubert, J., Nesvorna, M., Bostlova, M., Sopko, B., Green, S. J. and Phillips, T. 2022. The effect of residual pesticide application on microbiomes of the storage mite *Tyrophagus putrescentiae* Microbial Eclogy https://doi.org/10.1007/s00248-022-02072-y

180. Shao, W., Campbell, Y. L., Phillips, T. W., Freeman, C., Kundu, Crist, C. A., Williams, J. B. and Schilling. W. M.. 2021. The application of chitosan in food-grade coatings to control *Tyrophagus putrescentiae* on dry-cured hams and the effects on sensory properties. J. Stored Prod. Res. 94:101899. https://doi.org/10.1016/j.jspr.2021.101899

181. Yang, Xiangbing, Liu, Yong-Biao, Singh, Rippy, Phillips, Thomas W. 2022. Nitric oxide fumigation for control of ham mite, *Tyrophagus putrescentiae* (Sarcoptiformes: Acaridae). J. Econ. Entomol. https://doi.org/10.1093/jee/toac014

182. Ramadan, G. R. M., Zhu, K. Y. and Phillips, T. W. 2022. Synergism of deltamethrin with a mixture of short chain fatty acids for toxicity against pyrethroid-resistant and

susceptible strains of *Tribolium castaneum* (Coleoptera: Tenebrionidae). Pesticide Biochem. Physiol. 184: 105132; https://doi.org/10.1016/j.pestbp.2022.105132

183. Edde, P.A. and Phillips, T. W. 2022. Integrated pest management strategies for cigarette beetle control in the tobacco industry – a mini review. Contributions to Tobacco and Nicotine Research. Volume 31 @ No. 2 @ July 2022 DOI: 10.2478/cttr-2022-0009

184. Ramadan, G. R. M., Maille, J. J. and Phillips, T. W. 2022. Sorption and desorption dynamics of ethyl formate and propylene oxide as fumigants in durable agricultural commodities. J. Stored Prod. Res. https://doi.org/10.1016/j.jspr.2022.102007

185. Hubert, J., Navratilova, B., Sopko, B., Nesvorna, M., and Phillips, T.W. 2022. Pesticide residue exposure provides different responses of the microbiomes of distinct cultures of the stored product pest mite *Acarus siro*. BMC Microbiology. 22:252, https://doi.org/10.1186/s12866-022-02661-4 .

186. White, S.A., Zhang, X., Campbell, Y.L., Smith, S.W., Phillips, T.W., Freeman, C., Schilling, M.W. 2023. Effectiveness of nets treated with food-grade coatings following various drying methods for controlling mite growth on dry-cured hams. Journal of Stored Products Research. 100:10265. https://doi.org/10.1016/j.jspr.2022.102065

187. Fatehi, S., Aikins, M. J., Phillips, T. W., Brown, S., Zhu, K.Y., Scully, E. D. Park, Y. 2023. Characterization of Iflavirus in the red flour beetle, *Tribolium castaneum* (Coleoptera; Tenebrionidae). Insects. 14, 220. https://doi.org/10.3390/insects14030220

188. Maille, J. M., Edde, P. A., Phillips, T. W. 2023. Efficacy of propylene oxide and ethyl formate as fumigants to control *Lasioderma serricorne* (F.) (Coleoptera: Ptinidae). J. Stored Prod. Res. Vol. 100: 102047 https://doi.org/10.1016/j.jspr.2022.102047

189. Maille. J. M., Schilling, M. W. and Phillips, T. W. 2023. Efficacy of the fumigants propylene oxide and ethyl formate to control two pest species of dry-cured hams. Insects. 14, 511. https://doi.org/10.3390/insects14060511

190. Shao, W., Campbell, Y. L., Phillips, T. W., Freeman, C., Zhang, X., Hendrix, J.D., Kezia, V. T., Dinh, T., Rogers, W. D., Schilling M. W.. 2023. Using liquid smoke to control infestations of the ham mite, *Tyrophagus putrescentiae*, on dry-cured hams during aging. Meat Sci. Volume 200 109139 https://doi.org/10.1016/j.meatsci.2023.109139

191. Deliephan, A., T.W. Phillips, B. Subramanyam, C. G. Aldrich, Ja. Maille and N. Manu. 2023. Efficacy of liquid smoke to mitigate infestations of the storage mite, *Tyrophagus putrescentiae*, in a model semi-moist pet food. Animals Vol. 13, 3188. https://doi.org/10.3390/ani13203188

192. White, S. A., Smith S. W., Zhang, X., Campbell, Y. L., Phillips, T. W., Freeman, C., Schilling, M. W. 2023. Uses and Commercialization of Food-grade Coated Ham Nets: A Review. Textile Research Journal. https://DOI: 10.1177/00405175231211951

193. Smith, S. W., Zhang, X., Little E. M., Zaldivar, L. R., White, S. A., Campbell, W. L., Phillips, T. W., Schilling, M. W. 2023. Efficacy of a carboxymethylcellulose (CMC)-based edible film with propylene glycol to control ham mite populations that infest dry cured ham. J. Stored Prod. Res. 103: 102162 https://doi.org/10.1016/j.jspr.2023.102162

194. Hasan M. M., Mahroof R. M., Aikins, M. J., Athanassiou, C. G., Phillips, T. W. 2023. Pheromone-based auto-confusion for mating disruption of *Plodia interpunctella* (Lepidoptera: Pyralidae) in structures with raw and processed grain products. J. Stored Prod. Res. 104: 102201. https://doi.org/10.1016/j.jspr.2023.102201

195. Ramadan, G.R.M., Mosallam, E. M., Phillips, T. W. 2024. Methyl benzoate and its derivative, acetophenone, as fumigants to control stored product insects. J. Stored Prod Res. 105: 102248

196. Smith, S. W., Zhang, X., Little. E. M., Coatney, A., Tang, G., Phillips, T. W., Schilling, M. W. 2024. Inhibiting *Tyrophagus putrescentiae* orientation to and reproduction on dry cured hams: The impact of acetic acid-treated ham nets. J. Stored Prod. Res. 105:

197. Sserunjogi, M., C.J. Bern, T.J. Brumm, D.E. Maier and T.W. Phillips. 2024. Mechanical stirring of bulk-stored maize in steel bins to suppress maize weevils and other beetle populations. J. Stored Prod. Res. Vol 106 (2024) 102281

Recent Books and Book Chapters

10. Phillips, T. W. 2010. Chapter 12, pp. 169-178, Storage Practices. In: Peairs, F. B., ed.,

11. Phillips, T. W. 2012. Biologically based stored product insect pest management. pp. 239-251. In: Opender Koul, G. S. Dhaliwal, S. Khokhar and Ram Singh (eds.), Biopesticides in Environmental and Food Security. Scientific Publishers, Jodhpur, India.

12. Edde. P. A., M. Eaton, S. A. Kells and T. W. Phillips. 2012. Chapter 5. Biology, Behavior and Ecology of Pests in Other Durable Commodities. pp. 45-61, In: Hagstrum, D. W., T. W. Phillips and G. Cuperus (Eds.). Stored Product Protection. Kansas State University. Manhattan, KS.

13. Hagstrum, D. W., T. W. Phillips and G. Cuperus 2012. Chapter 1. Introduction, pp. 1-5, In: Hagstrum, D. W., T. W. Phillips and G. Cuperus (Eds.). In: Stored Product Protection. Kansas State University. Manhattan, KS.

14. Hagstrum, D. W., T. W. Phillips and G. Cuperus (Eds.) 2012. Stored Product Protection. Kansas State University. KSRE Publ. S-156. Manhattan, KS. 352 p.

15. Phillips, T. W., E.M. Thoms, J. DeMark and S. Walse. 2012. Chapter 14. Fumigation. pp. 157-177. In: Hagstrum, D. W., T. W. Phillips and G. Cuperus (Eds.). Stored Product Protection. Kansas State University. Manhattan, KS.

16. Scheff, D. S. and Phillips, T. W. 2022. Ch. 23, Integrated pest management. pp 661-675. In: Rosentrater, Ed., Storage of Cereal Grains and Their Products (Fifth Edition). Cereals & Grains Association. Published by Elsevier Inc.

Recent Extramural Research Support-Competitive

2010-2011 USDA Foreign Ag. Service, "Norman E. Borlaug International Agricultural Sciences and Technology Fellows Program," for **$49,778.** Co-PI with Praveen Vadlani and Nina Lilja, specifically for funding of Borlaug Visiting Fellow Dr. Dalia Barakat to the Phillips lab.

2011-2013 USDA NIFA Methyl Bromide Transition Program, "Evaluation of methyl bromide alternatives for their efficacy at controlling pests of dry cured ham and aged cheese products," for $499,701 to Mississippi State university, **$197,510** to KSU on sub-contract. T.W. Phillips is co-PI with lead PIs at MSS. Duration 24 mos., 9/1/11 to 8/31/13.

2011-2014 USDA Agricultural Research Service, Specific Cooperative Agreement, titled "Factors affecting hematophagous arthropod attraction to infested and uninfested animals," for **$6,000** in 2011 and more funds expected in subsequent years. T. W. Phillips is lead KSU PI with Dr. Lee Cohnstaedt as lead PI for ARS. During is 9/1/11 to 8/31/14.

2013-2015 Plant Biosecurity- Cooperative Research Center-Australia. "Strength and Spatio-temporal Dynamics of Resistance to Phosphine and Contact Insecticides in Key Stored Grain Pests". **$185,640**, 1/1/13-06/30/15.

2013-2015 Plant Biosecurity- Cooperative Research Center-Australia. Ecology of *Sitophilus* and *Crytolestes* Species. **$174,420**, 1/1/13-12/31/15.

2013-2016 USDA NIFA Methyl Bromide Transitions Program, "Developing IPM with Methyl Bromide Alternatives for Protecting Southern Dry-Cured Hams," for **$479,946**, 9/1/13 to 8/31/16

2015-2016 USDA APHIS Cooperative Research Agreement. Development of new treatment options for khapra beetle, *Trogoderma granarium*. **$90,420** for 9/7/15 to 9/6/16.

2017-2019 USDA NIFA Methyl Bromide Transitions Program. "Integration of food grade coatings into ham nets as a means to control ham mite infestations." Awarded to Mississippi State University with sub-award to KSU. PIs are Freeman, C., Schilling, M.W., Black, C., Kundu, S., Christ, C.A., Phillips, T.W., Adam, B. **$498,387**. 2017-2019.

2017-2020 USDA NIFA Crop Protection Program. "Developing and Implementing a Diversified Integrated Pest Management Program to Prevent Stored-Product Insect Infestation. Co-PI with K. Zhu, R. Morrison and others. **$325,000**

2018-2021 USDA NIFA Methyl Bromide Transition, "IPM for the Ham Mite using Alternatives to Methyl Bromide". Lead PI from KSU: T. W. Phillips, W. Schilling and B. Adam. **$499,713**

2021-2024 USDA NIFA Methyl Bromide Transition program for "Multi-Tactic Strategies to Manage Arthropod Pests of Dry-Cured Pork", project 2021-51102-35190, for **$500,000** to T. W. Phillips, W. Schilling, et al.

Recent Invited Research Presentations

Phillips, T. W. 2010. Mortality responses to fumigant alternatives: diversity among stored product insects. Invited speaker in symposium titled, "Diversity in Stored Product Pests, their Biology and Management Solutions," at the national meeting of the Entomological Society of America, December 12, San Diego, CA.

Phillips, T. W., M. M. Hasan, M. J. Aikins and R, Mahroof. 2011. Fumigation and IPM alternatives for arthropod pests of museums. Invited speaker at the International Conference on Cultural Heritage Pests, Jun8 in Piacenza, Italy.

Phillips, T. W., R. Mahroof, M.M. Hasan and M.J. Aikins. 2011. Efficacy of the SP*Tabs*® Auto-Confusion System for mating Disruption of the Indianmeal Moth, *Plodia interpunctella*. Invited speaker at the International Organization on Biological Control-Stored Products Division, July 5, University of Thessaly, Volos, Greece.

Abbar, S., Y. Zhao, M. W. Schilling and T. W. Phillips. 2013. Chemical alternatives for suppressing the ham mite, *Tyrophagus putrescentiae*. Annual International Research Conference on Methyl Bromide Alternatives and Emission Reduction, San Diego, CA, November 4-6. Abstract no. 36.

Amoah, B., M. W. Schilling, T.W. Phillips. 2013. Trapping the ham mite, *Tyrophagus putrescentiae*, with a food bait: toward a monitoring tool for IPM. Annual International Research Conference on Methyl Bromide Alternatives and Emission Reduction, San Diego, CA, November 4-6. Abstract no. 37.

Phillips, T. W. and M. W. Schilling. 2013. Fumigation alternatives for the ham mite, *Tyrophagus putrescentiae*: challenges and prospects. Annual International Research Conference on Methyl Bromide Alternatives and Emission Reduction, San Diego, CA, November 4-6. Abstract no. 38.

Phillips, T. W. 2014. Fumigation of Stored Grain and Milled Products: Challenges and Opportunities. Invited lecture at the 2014 GEAPS (Grain Elevators and Processors Society) Exchange, Omaha, NE, Feb. 23.

Phillips, T. W. 2014. Alternatives to managing stored-product pests as challenges to fumigation dominate the horizon. Invited presentation in "Stored Product Entomology: Making Significant Contributions to Clarify and Solve Important Challenges". Member Symposium. Entomological Society of America annual conference, Portland, OR, November 18, 2014.

Phillips, T. W., Cato, E. Afful, G. Opit and M. Nayak. 2014. Phosphine Resistance: The North American Challenge. Invited paper at the International Working Conference for Stored Product Protection. Chiang Mai, Thailand.

Phillips, T. W. 2014. Stored Grain Integrated Pest Management in the United States of America. Invited seminar to the Stored Grain Institute, Henan University of Technology, Zhengzhou, China. Dec. 1.

Phillips, T. 2014. Chemical and Non-chemical Controls for Stored-Product Insects. Phosphine Resistance in Stored-Product Insects. Pheromones for Stored-Product Insects: Monitoring and Mating Disruption. Stored Product Pest Management: Challenges and Opportunities in Research and Applications. Invited seminar speaker at Department of Entomology, University of Nebraska at Lincoln, NB. Feb. 18

Phillips, T. W. 2015. Stored Product and Import/Export Pests. Invited lecture to the EPA scientists and regulators, sponsored by Association of Structural Pest Control Regulatory Officials. March 25, headquarters of Rollins, Inc., Atlanta, GA.

Phillips, T. 2015. Insect monitoring techniques for stored-products in storage, processing and marketing. Paper delivered in "Board Certified Entomologist's (BCE) Member Symposium: State of the Art Insect Monitoring Approaches", at the annual ESA meeting, Minneapolis, MN November 15-18, 2015.

Phillips, T. W. 2016. "Pest Management for Stored Products: Persistent Problems and Hopeful Possibilities." Invited seminar speaker to the Department of Entomology and Nematology, University of California-Davis. Feb. 10, 2016

Phillips, T. 2016. "Challenges facing fumigation of stored products and research for solutions." Invited speaker at symposium titled: Stored Product Entomology: Challenges that Transcend Borders. ICE-2016-International Congress of Entomology. Orlando, FL. Sept. 27, 2016.

Phillips, T., B. Amoah, S. Abbar and W. Schilling. 2016. "Methyl Bromide Alternatives for the Ham Mite, Tyrophagus putrescentiae: IPM via Prevention, Monitoring and Mitigation". Invited symposium presentation at the International Conference on Controlled Atmospheres and Fumigation in Stored Products. Nov. 10, 2016. New Delhi, India.

Phillips, T., A. Cato, E. Afful and Z. Chen. 2016. "Phosphine Resistance in North American Grain Beetles". Invited symposium presentation at the International Conference on Controlled Atmospheres and Fumigation in Stored Products. Nov. 11, 2016. New Delhi, India.

Phillips, T. W., S. Abbar, B. Amoah, M. W. Schilling, X. Zhang, Y. Zhao and Y. Campbell. 2017. "Nothin' but net…and some other stuff: Pest management innovations for *Tyrophagus putrescentiae*." Invited presentation to the Stored Product Symposium of the ESA National Conference in Denver, CO, 5 November 2017

Phillips, T. W., L. Pfannenstiel and D. Hagstrum. 2018. "Survey of *Trogoderma* species (Coleoptera: Dermestidae) Associated with International Trade of Dried Distiller's Grains and Solubles in the USA" Invited presentation at the International Working Conference on Stored Product Protection. Berlin, Germany. 7-11 October 2018.

Phillips, T. 2019. "Pest Management for Stored Products: Challenges with Mites and Beetles." Invited speaker in the Department of Entomology, University of Manitoba, Winnipeg, MAN. Feb. 12, 2019.

Recent Recognition, Special Invitations and Special Service

2004 Member of the Expert Review Panel for the Biological Research Unit, USDA ARS,

2006-2007 Chair, Faculty Council of Oklahoma State University, the faculty government equivalent to a Faculty Senate

2006 Sarkey's Distinguished Professor Award in honor of Elmo Bauman, in recognition of outstanding contributions to agriculture. Oklahoma State University, Division of Agricultural Sciences and Natural Resources. September 21.

2008-present	Appointed as member of the Permanent Organizing Committee for the International Conference on Controlled Atmospheres and Fumigation of Stored Products, "CAF".
2010	Keynote speaker at conference titled "Biopesticides: Emerging Trends" in Hisar, India, October 20-22, speaking on, "Biologically Based Approaches to Managing Storage Insects."
2014- present	Appointed to the Permanent Committee for the International Working Conference for Stored Product Protection.
2015	Named the Donald Wilbur Sr. Endowed Professor for Stored Product Protection at Kansas State University.
2018-present	Appointed to the editorial board of the journal "Insects" for which I provide input and final decisions for acceptance of papers.
2019-2021	Appointed to the editorial board of "Journal of Economic Entomology" for which I provide input to journal decisions affecting operations.
2020	Received the Commerce Bank Distinguished Graduate Faculty Award in August
2022	Awarded US Patent 31 May-2022, titled, "Compositions of food grade coatings to control pest infestations and methods of applications" number 11,344,055, with co-inventors Schilling; Mark Wes, Zhao; Yan, Campbell; Yan, Abbar; Salehe and Amoah; Barbara.

Teaching

Forest and Aquatic Entomology (EFB 453, SUNY ESF, Cranberry Lake Biological Station). A lecture and field course on the ecology, behavior and diversity of forest and aquatic insects of the Adirondack Mountains (June 1984).

Forest Protection I (FTC 213, SUNY ESF Forest Tech. Prog.). A lecture, laboratory and field course in forest entomology and pathology. Forest technician candidates were exposed to major forest pests, including their biologies, recognition and management (Fall 1984 and 1985).

Forest Ecology (FTC 206, SUNY ESF Forest Tech. Prog.). Taught section on forest synecology, covering the concepts of competition, succession and community analysis; conducted related field exercises (Fall 1985)

Ecological Genetics in Insects (ENT 903, University of Wisconsin) Co-taught graduate seminar/discussion course in which theory and issues of ecological genetics related to insects and pest management were covered (Spring 1992).

Postharvest Pest Management (ENT 905, University of Wisconsin). A graduate seminar course reviewing new techniques in the management of pests infesting postharvest commodities (Spring 1994).

Insects in Forest Ecosystems (ENTO 3461, Oklahoma State University). An undergraduate service course for Forestry majors that covers the basic biology, recognition and management of major forest inset pests. (Spring even-numbered years; 1998-present)

Ecological Methodology (ENTO 4223, Oklahoma State University). An upper level undergraduate and graduate course that uses insects and other arthropods as model systems for describing and evaluating interactions of individuals and populations with their environments. Team-taught with K. Giles and N. Elliot. (Fall 1998)

Chemical Ecology (ENTO 5733, Oklahoma State University). This is a graduate course in chemical ecology that addresses the interaction among organisms that are mediated by naturally produced chemicals. (Fall of odd-numbered years; Fall 1999 to present)

Postharvest Insect Pests (ENTO 3021, Oklahoma State University). An undergraduate course attended by Entomology and Agronomy majors. Overview of major insect pest of durable and fresh commodities, with emphasis on biology, recognition and management. (Spring of odd-numbered years; 2001 to present)

Horticultural Insect Pests (ENTO 3421, Oklahoma State University). An undergraduate service course designed for Horticulture majors. Overview of insect pests and their management from fruits, vegetable, nuts, woody ornamentals and turf. This is a team-taught course in which TWP is responsible for covering trees and shrubs as well as concepts of IPM and biological control. (every Spring, began 2003).

General Entomology (ENTOM 312, Kansas State University). An undergraduate service course for 3 credit hours in general insect biology with emphasis on classification, anatomy, morphology, physiology, behavior, ecology and pest management; 50 students, Fall every year.

Insects of Stored Products (ENTOM 805, Kansas State University). Offered in Spring even years; co-taught with David Hagstrum. Biology, ecology, and behavior of stored-product insects and current practices involved in their control.

Insect Chemical Ecology (ENTOM 845, Kansas State University). This is a graduate course in chemical ecology that addresses the interaction among insect and with other organisms that are mediated by naturally produced chemicals. Spring of odd-numbered years.

Recent Graduate Students Advised and Their Current Status

Oklahoma State University

Michael D. Toews, M.S. 1998, Oklahoma State University (co-advised with Dr. G. Cuperus). Went on to pursue a Ph.D. at OSU in the Phillips laboratory.

Carl Doud, M.S. 1999, Oklahoma State University. TWP was major prof. Mr. Doud received his Ph.D. in Entomology from Kansas State University, served and retired from the U.S. Naval Medical Corps; now is Director for the Midland County Mosquitoes Control, Sanford, MI.

Bryna Donnelly, M.S. 2000, Oklahoma State University TWP was major prof. Ms. Donnelly earned her Ph.D. in Insect Biochemistry at OSU and now is employed by Greater Good.org.

Michael D. Toews, Ph.D. May 2001. TWP was major prof. Thesis topic: "Using Traps to Estimate Populations of the Rusty Grain Beetle, *Cryptolestes ferrugineus*, and Other Beetles in Stored Grain." Now a Professor of Entomology at University of Georgia at Tifton, GA..

Sinedu Abate-Zeru, M.S. Dec. 2001. TWP was major prof. Thesis topic: "Natural Products as Grain Protectants against Stored Product Insects." Returned to Ethiopia to assume government position as an applied entomologist.

Mukti Ghimire, M.S. May2004. TWP was major prof. Thesis topic: "Host Specificity of the Parasitoid *Anisopteromalus calandrae* of Stored Grain Beetles." Entered OSU Ph.D. program.

Peter Edde, Ph.D. December 2005. Thesis topic: "Studies with the Aggregation Pheromones of *Rhyzopertha dominica* (Coleoptera: Bostrichidae): Habitat Affinities, Seasonal Flight Activity, and Pheromone-Mediated Host Selection Behavior." Currently Entomologist with Altria Client Services in Richmond, VA

Siwei Liu, M.S. December 2005. Thesis topic: "Combination Treatments for Controlling Stored Product Insects." Entered Ph.D. program at OSU.

Mukti Ghimire, Ph.D. December 2007. Thesis topic: "Biological Control of Stored Product Moths with the Parasitoid Wasp, *Bracon hebetor*." Now Entomologist with the USDA APHIS Plant Pest and Quarantine Service, Atlanta, GA..

Manuel Campos, Ph.D. December 2008. Thesis topic: "Attract-and-Kill Methods for *Plodia interpunctella*, (Lepidoptera: Pyralidae), and Comparisons with other Pheromone-Based Methods." Research Entomologist with Texas A&M University, AgriLife Research Center in Weslaco, TX.

Kishan Sambaraju, Ph.D. August 2007. Thesis topic: "Ecology and Behavior of Female Indianmeal Moths." Research Scientist with Canadian Forestry Service, Quebec City, QB.

J. Barrett Robertson, M.S. December 2008. Thesis topic: "Efficacy of Spinosad Formulations to Control Stored Grain Insects". Employed by USDA.

<u>Kansas State University</u>

Matthew Sellner, M.S. May 2013. Thesis topic: "Seasonal Activity of Insects Trapped in Stored Wheat in Kansas and Stored Rice in Texas." Co-advised with Jim Campbell. Employed by the US EPA.

Barbara Amoah, Ph.D. May. 2016. Dissertation topic: "Towards IPM of the Ham Mite, *Tyrophagus putrescentiae* (Acarina: Acaridae)-Orientation, Behavior and Monitoring of Mites in Commercial Facilities." Postdoc at South Carolina State University.

Salehe Abbar, Ph.D. Dec. 2016. Dissertation topic: "Alternatives to Methyl Bromide for Managing the Ham Mite, *Tyrohagus putrescentiae* in Commercial Facilities." Postdoc at Rutgers University.

Aaron Cato, MS. August 2015. Thesis topic: "Phosphine Resistance in the Red Flour Beetle, *Tribolium castaneum*, (Coleoptera: Tenebrionidae)". Ph.D. student at University of Arkansas.

Stephen Losey, MS. Dec. 2015. Thesis topic: "Orientation and Dispersal Ecology of the Rusty Grain Beetle, *Cryptolestes ferrugineus*, (Coleoptera: Sylvanidae). Ph.D. student at Kansas State University.

Edwin Afful, PhD. October 2018. Dissertation topic: "Phosphine Resistance in the Lesser Grain borer, *Rhyzopertha dominica*, (Coleoptera: Bostrichidae)." Postoc at University of Maryland

Jacqueline Maille, M.S. December 2019. Thesis topic: "Alternative Fumigants for Dissinfestation of the Ham Mite, *Tyrophagus putrescentiae* (Acarina:Acaridae) and the cigarette beetle, *Lasioderma serricorne* (Coleoptera: Anobiidae)." http://hdl.handle.net/2097/40244 Continued with a Ph.D. program in KSU Entomology in the lab of Erin Scully.

Naomi Manu, Ph.D. May 2023. Dissertation topic: "Pest Management Options to Prevent Infestations of the Ham Mite, *Tyrophagus putrescentiae* (Acarina:Acaridae). Employed by Apex Bait Technologies http://www.apexbait.com/

M. Jamie Aikins, Ph.D. February 2024. Dissertation Topic: "Functional Genomics of Pheromone Biology in the Red Flour Beetle, *Tribolium castaneum*." Employed by Kansas State University as Research Manager in the Phillips laboratory.

Postdoctoral and Visiting Scientists Advised

Aseffa Gebre-Amlak (Ph.D.). Dr. Gebre-Amlak worked in the Phillips lab. during 1997-98 as a postdoctoral scientist studying the effects of cedar oil and individual oil components on stored grain insects at OSU.

Christian Nansen (M.Sc.) Mr. Nansen, a Danish student working at the International Institute of Tropical Agriculture, was a visiting student in the Phillips lab. for one month in early 1999. Mr. Nansen undertook a concentrated course of study on techniques in insect pheromone research and conducted experiments on pheromone production in the larger grain borer.

George Mbata (Ph.D.). Dr. Mbata joined the Phillips lab. from April 1999 to August 2000 as a Postdoctoral Fellow studying the efficacy of various physical control methods against stored-product insects as substitutes to chemical fumigants.

Yong-Shik Chun (Ph.D.). Dr. Chun was a visiting scientist sponsored by the government of Korea to work in the Phillips lab. for 2 years studying biological control of stored grain insects.

Baige Zhou (M.S.) Ms. Zhou is a visiting scholar on leave as a faculty member from Hennen University in China who joined the Phillips lab. for two years beginning Feb. 14, 2000. Ms. Zhou is developing molecular detection methods for mites in processed food products.

Christian Nansen (Ph.D.) After completing his Ph.D. in Denmark based on work on the larger grain borer in Benin, Dr. Nansen joined the Phillips lab. as a Postdoctoral Fellow in February 2001. Dr. Nansen's work centers on using synthetic sex pheromones and natural oviposition stimulants to develop lure-and-kill technologies against the Indian meal moth.

Rajshekhar Hulasare (Ph.D.). Postdoctoral Fellow beginning in January 2002 to study methods and applications of low pressure for disinfestation of stored products and also to pursue engineering aspects of grain storage structures relative to IPM practices.

Sergio Jimenez (Ph.D.). Visiting Research Professor from the Universidad Nacional Autonoma de Mexico, Mexico City, MX, from June 2004 to February 2005, to study the use of natural products as insect repellents for protecting packaged food from stored product insects.

Rizana Mahroof (Ph.D.). Postdoctoral Fellow beginning July 1, 2005 for two years, to study ecology, behavior and physiology of host associations in stored-product beetles. Visiting Scientist at Kansas State University, June-August, 2008.

Md. Mahbub Hasan (Ph.D.). Visiting Scholar and Fulbright Fellow from Rajshahi University, Bangladesh, studying fumigant alternatives for control and management of stored product insect pest; Feb. 2008 to Feb. 2010.

Yujie Lu (Ph.D.). Visiting Scholar from Food and Grain College, Henan University of Technology, Zhengzhou, Henan Province, China, March 2010 to October 2011, to study biology and functional genomics of pheromones in the red flour beetle.

Zhaorigetu Chen (Ph.D.) Postdoctoral Research Fellow studying genetic markers for phosphine resistance in stored product insects. August 2013 to 2017.

Özgür Sağlam (Ph.D.). Visiting Scientist from Nemik Kemal University, Tekirdag, Turkey, studying phosphine resistance in the cigarette beetle and fumigation alternatives for stored-product insects, August 2013-2015

Gomaa Ramadan (M.S.). Visiting Ph.D. student from University of Alexandria, Egypt, conducting research toward his Ph.D. on fumigant alternatives for stored grain insects. Feb. 2018-Feb. 2020.

Adenike Adeyemo (Ph.D.). Visiting Scholar from Nigeria studying naturally based insect repellents and feeding deterrents as tools for stored product pest management. March – August 2018