

REBECCA CREAMER

Professor Dept. Entomology, Plant Pathology and Weed Science
New Mexico State University
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EDUCATION

- Ph.D., 1989 Plant Pathology, University of California, Davis. Dissertation: Aphid transmission specificity and mixed infection interactions of barley yellow dwarf viruses.
M.S., 1985 Plant Pathology, University of California, Davis. Thesis: Characterization and elicitor activity of lipids from *Phytophthora infestans* in the hypersensitive response of potato tuber tissue and studies of phytoalexin elicitors in *Bipolaris carbonum* and *Ceratocystis fimbriata*.
B.S., 1981 Plant Pathology, University of Kentucky, Lexington.

PROFESSIONAL EXPERIENCE

- 2011 – present Professor, Department of Entomology, Plant Pathology, and Weed Science, New Mexico State University
2008 – 2013 Director, Molecular Biology Graduate Program, NMSU
2005 - 2011 Associate Professor, Department of Entomology, Plant Pathology, and Weed Science, New Mexico State University
1999 - 2005 Assistant Professor, Department of Entomology, Plant Pathology, and Weed Science, New Mexico State University
1990 - 1999 Assistant Professor, Department of Plant Pathology, University of California, Riverside
1989 - 1990 Post-Doctoral Researcher, Department of Plant Pathology, Ohio State University, Ohio Agricultural Research and Development Center

PROFESSIONAL AFFILIATIONS

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|---|-------------------------|
| American Phytopathological Society | 1983-present |
| Virology Committee | 1993-1995 |
| Senior Editor of Plant Disease | 1995-1997 |
| Associate Editor for Plant Disease | 1993-1994 and 2004-2006 |
| Entomological Society of America | 1990-present |
| Society of Southwestern Entomologists | 2000-present |
| Mycological Society of America | 2010-present |
| American Association for the Advancement of Science | 2006 - present |
| WERA1007 Curly Top Multistate project | 2004 – present |
| Gamma Sigma Delta | 1994-present |
| W2193 Locoweed Multistate project | 2015-present |

AWARDS

- Gamma Sigma Delta Distinguished Award for Graduate Teaching 2016
ACES Team Award 2016

VIRUS RESEARCH PUBLICATIONS (last 17 yrs) (Total 47 papers, 7 book chapters)

- Creamer, R. 2023. Viral Diseases of Pepper. Chapter 3.2.6 in *Viral Diseases of Field and Horticultural Crops*, ed L.P. Awasthi. Elsevier: San Diego, CA.
- Creamer, R. 2020. Beet curly top virus transmission, epidemiology, and management. Pages 521-527 in *Applied Plant Virology: Advances, Detection, and Antiviral Strategies*, ed. L.P. Awasthi. Elsevier: San Diego, CA.
- Lehnhoff, E., Creamer, R. 2020. Prediction of early season beet leafhopper populations in southern New Mexico. *Plant Health Progress* 21:71-76.
- Martinez, S., Creamer, R., Thomas, S., Schroeder, J. 2019. Assessment of weed/pest complexes in Southern New Mexico chile fields. New Mexico State University AES research report 794.
- Alkhatib, R., Alkhatib, B., Abdo, N., Al-Eitan, L., Creamer, R. 2019. Physio-biochemical and ultrastructural impact of (Fe₃O₄) nanoparticles on tobacco. *BMC Plant Biology* 19:253.
- Salas-Munoz, S., Mauricio-Castillo, J. A., Dietrich, C. H., Creamer, R. , and Reveles-Torres, L.R.. 2018. First report of the leafhoppers *Ceratagallia nitidula* Oman and *Empoasca abrupta* DeLong (Hemiptera: Cicadellidae) as vectors of 'Candidatus *Phytoplasma trifolii*'. *Plant Disease* 102:12.
- Peinado, S.A., Achata Bottger, J. Chen, L.-F., Gilbertson, R., Creamer, R. 2018. Evidence of curtovirus competition and synergy in co-infected plant hosts. *African Journal of Microbiology Research* 12:254-262.
- Nusayr, T., Creamer, R. 2017. A novel *groel* gene from the endosymbiont of beet leafhopper, Candidatus *Sulcia muelleri*. *African Journal of Microbiology Research* 11:1586-1599
- Mauricio-Castillo, J. A., Reveles-Torres, L.R., Mena-Covarrubias, J., Arguello-Astorga, G. R., Creamer, R., Franco-Banuelos, A., Salas-Munoz, S. 2017. First Report of beet curly top virus-PeYD associated with a new disease in chile pepper plants in Zacatecas, Mexico. *Plant Disease*, 101:513.
- Salas-Muñoz, S., Velásquez-Valle, R., Reveles-Torres, L. R., Creamer, R., and Mauricio-Castillo, J. A. 2016. First report of 'Candidatus *Phytoplasma trifolii*' - related strain associated with a new disease in tomato plants in Zacatecas, Mexico. *Plant Disease* 100:11.
- Creamer, R. and Valle Vasquez, R. 2015. Curtovirus infection of peppers in Mexico and New Mexico. Pages 239-256 in *Virus y fitoplasmas de chile: una perspectiva regional*. Libro tecnico No 10. Campo Experimental Zacatecas. CIRNOC-INIFAP, 279 p.
- Al-Khatib, R. Bsoul, E., Blom, D. A., Ghoshroy, K., Creamer, R., and Ghoshroy, S. 2103. Microscopic analysis of lead accumulation in tobacco (*Nicotiana tabacum* var. Turkish) roots and leaves. *J. Microscopy and Ultrastructure* 1:57-62.
- Al-Khatib, R, Creamer, R, and Ghoshroy, S. 2012. Physiological and ultrastructural effects of lead (Pb) on tobacco (*Nicotiana tabacum* var. Turkish). *Biologia Plantarum* 56:711-716
- Vuong, H, Caccimase, D, Remmenga, M. and Creamer, R. 2012. Ecological associations of West Nile virus and avian hosts in arid environments of southern New Mexico. *Studies in Avian Biology* 42:3-21.
- Sedano, M, Lam, N, Escobar, I, Cross, T, Hanson, SF, and Creamer, R. 2012. Application of vascular puncture for evaluation of curtovirus resistance in chile pepper and tomato. *J Phytopathol* 160:120-128.
- Mohseni-Moghadam, M, Cramer, CS, Steiner, RL, and Creamer, R. 2011. Evaluating winter-sown onion entries for *Iris yellow spot virus* susceptibility. *HortScience* 46:1224-1229.
- Al-Khatib, R, Creamer, R, Lartey, RT, and Ghoshroy, S. 2011. Effect of lead (Pb) on the systemic movement of RNA viruses in tobacco (*Nicotiana tabacum* var. Turkish). *Plant Cell Reports* 30:1427-1434.

- Hudson, A, Richman, DB, Escobar, I, and Creamer, R. 2010. Comparison of the feeding behavior and genetics of beet leafhopper (*Circulifer tenellus*, Baker) populations from California and New Mexico. *Southwestern Entomologist* 35:241-250.
- Lam, N, Creamer, R, Rascon, J, and Belfon, R. 2009. Characterization of a new curtovirus, Pepper yellow dwarf virus, from chile pepper and distribution in weed hosts in New Mexico. *Archives of Virology* 154:429-436.
- Stafford, CA, Walker, GP, Creamer, R. 2009. Stylet penetration behavior resulting in inoculation of beet severe curly top virus by beet leafhopper, *Circulifer tenellus*. *Entomol Exp et Appl* 130:130-137.
- Pitzer, JB, Byford, RL, Vuong, HB, Steiner, RL, Creamer, R, and Caccamise, DF. 2009. Potential vectors of West Nile Virus in a semiarid environment: Doña Ana County, New Mexico. *J. Med. Entomol.* 46:1474-1482.
- Multani, PS, Cramer, CS, Steiner, R., and Creamer, R. 2009. Screening winter-sown onion entries for iris yellow spot virus tolerance. *HortScience* 44:627-632.
- Ray, J, Schroeder, J, Creamer, R, and Murray, L. 2006. Planting date affects phenology of London rocket (*Sisymbrium irio*) and interaction with beet leafhopper (*Circulifer tenellus*) in southern New Mexico. *Weed Science* 53: 54:127-132.
- Creamer, R, Sanogo, S, El-Sebai, O, Carpenter, J, and Sanderson, R. 2005. Kaolin-based foliar reflectant affects physiology, incidence of beet curly top virus, but not yield of chile pepper. *HortScience*. 40:574-576.
- Creamer, R, Hubble, H, and Lewis, A. 2005. Curtovirus infection of chile pepper in New Mexico. *Plant Disease* 89:480-486.
- Ray, J, Creamer R, Schroeder, J, and Murray, L. 2005. Moisture and temperature requirements for London rocket (*Sisymbrium irio*) emergence. *Weed Science* 53:187-192.
- Renouard, JJ, Creamer, R, and Richman, DB. 2004. Gut content analysis of the spider *Hibana incursa* (Aranae:Anyphaenidae) using serological methods. *Southwestern Entomol* 29:91-97.
- Creamer, R, Carpenter, J, and Rascon, J. 2003. Incidence of the beet leafhopper, *Circulifer tenellus* (Homoptera: Cicadellidae) in New Mexico. *Southwestern Entomologist* 28:177-182.

FUNGAL RESEARCH PUBLICATIONS (last 17 yrs) (Total 29 papers, 4 book chapters)

- Schardl, C.L., Afkhami, M.E., Gundel, P.E., Iannone, L.J., Young, C.A., Creamer, R., Cook, D.A., Berry, D. (2023). Diversity of Seed Endophytes: Causes and Implications. In: Scott, B., Mesarich, C. (eds) *Plant Relationships. The Mycota*, vol 5. Springer, Cham. https://doi.org/10.1007/978-3-031-16503-0_5
- Neyaz, M., Das, S., Cook, D., Creamer, R. 2022. Phylogenetic comparison of swainsonine biosynthetic gene clusters among fungi. *Journal of Fungi* 8:359.
- Neyaz, M., Gardner, D. R., Creamer, R., Cook, D. 2022. Localization of the swainsonine-producing Chaetothyriales symbiont in the seed and shoot apical meristem in its host *Ipomoea carnea*. *Microorganisms* 10:545.
- Noor, A.I., Nava, A., Neyaz, M., Cooke, P. Creamer, R. Cook, D. 2021. Ectopic growth of the Chaetothyriales fungal symbiont on *Ipomoea carnea*. *Botany* 99 (10):619-627.
- Creamer, R., Hille, D.B., Neyaz, M., Nusayr, T., Schardl, C.L., Cook, D. 2021. Genetic relationship in the toxin producing fungal endophyte, *Alternaria oxytropis*, using polyketide synthase and non-ribosomal peptide synthase genes. *Journal of Fungi* 7(7), 538. <https://doi.org/10.3390/jof7070538>
- Noor, A.I., Neyaz, M., Cook, D., Creamer, R. 2020. Molecular characterization of a fungal ketide synthase gene among swainsonine-producing *Alternaria* species in the USA. *Current Microbiology* <https://doi.org/10.1007/s00284-020-02111-2>

- Neyaz, M., Cook, D., Creamer, R. 2020. Molecular differentiation of *Astragalus* species and varieties from the western United States: The chloroplast DNA bridge between evolution and molecular systematics. *Poisonous Plant Research (PPR)*: Vol 3, Article 1.
- Xu, Shan, Christensen, M.J., Creamer, R. Li, Y.Z. 2019. Identification, characterization, pathogenicity, and distribution of *Verticillium alfalfae* in alfalfa plants in China. *Plant Disease* 103:1565-1567.
- Fan, Q., Creamer, R. Li, Y. 2018. Time course metabolic profiling in alfalfa leaves under *Phoma medicaginis* infection. *PLoS ONE* 13(10):e0206641.
- Noor, A.I., Nava, A., Cooke, P. Cook, D. Creamer, R. 2018. Evidence of non-pathogenic relationship of *Alternaria* section *Undifilum* endophytes within three host locoweed plant species. *Botany* 96:187-200.
- Alhawatema, M., Gebril,S., Cook, D., Creamer, R. 2107. RNAi-mediated down regulation of a melanin polyketide synthase (pks 1) gene in the fungus *Slafractonia leguminicola*. *World J. Microbiol. Biotech.* 33:179.
- Cook, D., Donzelli, B.G.G., Creamer, R., Baucom, D.L., Gardner, D.R., Pan, J., Moore, N., Krasnoff, S.B., Jaromczyk, J.W., Schardl, C.L. 2017. Swainsonine biosynthesis genes in diverse symbiotic and pathogenic fungi. *G3:Genes, Genomes, Genetics* 7:1791-1797.
- Lu, H., Quan, H., Zhou, Q., Ren, Zhenhui, Xue, R., Zhao, B., Creamer, R. 2017. Endogenous fungi isolated from three locoweed species from rangeland in western China. *Afr. J. Microbiol. Res.* 11:155-170.
- Liu, J. Li, Y., Creamer, R. 2016. A re-examination of the taxonomic status of *Embellisia astragali*. *Current Microbiology* 72:404-409.
- Alhawatema, M.S., Sanogo, S., Baucom, D.L., and Creamer, R. 2015. A search for the phylogenetic relationship of the Ascomycete *Rhizotonia leguminicola* using genetic analysis. *Mycopathologia* 179:381-389.
- Grum, D.S., Cook, D., Baucom, D., Mott, I.W., Gardner, D.R., Creamer, R., Allen, J.G. 2013. Production of the alkaloid swainsonine by a fungal endophyte in the host *Swainsona canescens*. *Journal of Natural Products* 76:1984-1988.
- Creamer, R. and Baucom, D. 2013. Fungal endophytes of locoweeds: A commensal relationship? *J. Plant Physiol. and Pathol.* 1:2 doi:10.4172/jppp.1000104
- Reyna, R., Cooke, P., Grum, D., Cook, D., and Creamer, R. 2012. Detection and localization of the endophyte *Undifilum oxytropis* in locoweed tissues. *Botany* 90:1229-1236.
- Baucom, D. Romero, M., Belfon, R., Creamer, R. 2012. Two new species of *Undifilum*, fungal endophytes of *Astragalus* locoweed in the United States. *Botany* 90:866-875.
- Mukherjee, S, Dawe, AL, Creamer, R. 2012. Potential role for saccharopine reductase in swainsonine metabolism in endophytic fungus, *Undifilum oxytropis*. *Fungal Biol* 116:902-909.
- Li, H., Gao, R., Liu, Y., Wang, J., Hu, Y., Yang, Z., Yang, G., and Creamer, R. 2012. Proteomics analysis of *Rhizoctonia leguminicola*, the phytopathogenic fungus that produces slaframine and swainsonine. *J. Food, Agriculture, and Environment* 10:956-961.
- Achata Bottger, J., Creamer, R. Gardner, D. 2012. Seasonal changes in *Undifilum* colonization and swainsonine content of locoweeds. *J Chem Ecol* 38:486-495.
- Li, H. Holguin, O., Wang, J., Schaub, T., Wang, J., Hao, C., Geng, G., Creamer, R. 2012. Proteomic analysis of the endophytic fungus *Undifilum oxytropis*. *African J Biotech* 11:10484-10493.
- Li, H., Yu, Y., Gao, R., Wang, J, Yang, G., Yang, Z., Baucom, D., Creamer, R. 2012 Analysis of secreted proteins from *Undifilum cinereum* by two dimensional gel electrophoresis and liquid chromatography-mass spectrometry/mass spectrometry. *Journal of Animal and Veterinary Advances* 11:1881-1889.

- Li, H., Wang, J., Wang, J., Creamer, R. 2012. Protein extraction methods for the two-dimensional gel electrophoresis analysis of the slow growing fungus *Undifilum oxytropis*. *African Journal of Microbiology* 6:757-763.
- Mukherjee, S. Dawe, A., Creamer, R. 2010. Development of a transformation system in the swainsonine producing, slow growing endophytic fungus, *Undifilum oxytropis*. *J Microbiol Methods* 81:160-165.
- Oldrup, E., McLain-Romero, J., Padilla, A., Moya, A., Gardner, D., Creamer, R. 2010. Localization of endophytic *Undifilum* fungi in locoweed seed and influence of environmental parameters on a locoweed *in vitro* culture system. *Botany* 88:512-521.
- Pryor, B.M., Creamer, R., Shoemaker, RA., McLain-Romero, J., Hambleton, S. 2009. *Undifilum*, a new genus for enophytic *Embellisia oxytropis* and parasitic *Helminthosporium bornmuelleri* on legumes. *Botany* 87:178-194.
- Ralphs, M.H., Creamer, R., Baucom, D., Gardner, DR., Welsh, SL., Graham, JD., Hart, C., Cook, D., Stegelmeier, BL. 2008. Relationship between the endophyte *Embellisia* spp. and the toxic alkaloid swainsonine in major locoweed species (*Astragalus* and *Oxytropis*). *J Chem Ecol* 34:32-38.
- Gardner, D.R., Romero, J., Ralphs, M.H., Creamer, R. 2004. Correlation of an endophytic fungus (*Alternaria* spp.) with the presence of swainsonine in Lambert locoweed (*Oxytropis lambertii*). Pages 32-38 in : *Poisonous Plants and Related Toxins*, T. Acamovid, C. S. Stewart, and T. W. Pennycott, eds. Oxford University Press, UK.
- Kulshrestha, S., Creamer, R., Sterling, T. 2004. Phylogenetic relationship among New Mexico *Astragalus mollissimus* varieties and *Oxytropis* species by restriction fragment analysis. *Weed Science* 52:984-988.
- Romero, J., Creamer, R., Zepeda, H., Strickland, J. Bell, G. 2004. Toxicosis of *Embellisia* fungi from locoweed (*Oxytropis lambertii*) is similar to locoweed (*Oxytropis lambertii*) toxicosis in rat. *J Animal Sci.* 82:2169-2174.
- Braun, K., Romero, J, Liddell, C., and Creamer, R. 2003. Production of swainsonine by fungal endophytes of locoweed. *Mycological Research* 107:980-988.

SYNERGISTIC ACTIVITIES:

1. NMSU Graduate Program in Molecular Biology –2001-present.
2. NMSU Center for Natural History Collections.
3. Mentor to 6 undergraduate NIH-Minority Access to Research Careers (MARC) Program scholars at NMSU, to 6 agricultural-based students through the ASSURED program, to 6 minority undergraduate student through the NIH-MBRS-RISE program, and to 9 NIH-Bridge to the Baccalaureate summer research program for Native Americans.
4. Visiting scholars (four from China) from Lanzhou University, Ningxia University, and Northwest A&F University, China, working on locoweeds and swainsonine.
5. Visiting scholar from Plant Protection Institute, Diyarbakir, Turkey, worked on leafhopper transmission of virus
6. Borlaug scholar from National Center for Agricultural Research and Extension, Amman, Jordan.

TEACHING

Undergraduate Advising – 25 advisees

Current Teaching Responsibilities

EPWS 310 Plant Pathology- 4 unit undergraduate class - with lab – every fall

EPWS 486/551 Plant Virology- 3 unit undergrad/graduate class – even year spring

EPWS 455/501 Advanced Integrated Pest Management – 3 unit undergrad/graduate class – odd year spring

Thesis Advisees: 1) Xiaohua He (PhD) 1997. USDA Research Scientist, Richmond, CA; 2) Francisco Osorio (PhD) 1998. Prof. Monterey, Mexico; 3) Jennifer Romero (MS) 1997 State Field Biologist, Fresno, CA; 4) Giselle Ottoni (PhD) 1999 Extension Coordinator, Goiania, Brazil; 5) James Jordan Renouard (MS) 2003. Research Specialist, Arizona State University; 6) Heidi A. Hubble (MS) 2003 Electrician; 7) Jarren Bill Ray (MS) 2004 Optometrist; 8) William Erik Oldrup (MS) 2005 Specialist, Homeland Security Agency, Miami, FL; 9) Lam Dai Nhan (PhD) 2009 Research Scientist Institute of Biotechnology, Vietnamese Acad. of Sci. and Technol.; 10) Jorge Achata (MS) 2009 Asst Professor Universidad San Ignacio de Loyola, Peru; 11) Rami Al-Khatib (PhD) 2009 Assoc Prof. Jordan Univ. Sci. and Technol. 12) Suman Mukherjee (PhD) 2010 Instructor Bunker Hill Community College, Boston, MA. 13) Roxanna Reyna-Islas (MS) 2011 Program coordinator, Texas Agrilife. 14) Haili Li (PhD) 2012 Scientist Henan Agricultural Institute, Zhengzhou, China. 15) Stephen Peinado (MS) 2013 PhD Student University of Wisconsin, Madison; 16) Mohammad Al-Hawatema (PhD) 2015, Asst Professor Tafila Technical University, Jordan; 17) Deana Baucom (PhD) 2015 teacher grade 2 Las Cruces, NM; 18) Tesneem Nusayr (PhD) 2017 Instructor University of Houston; 19) Sharon Martinez (MS) 2017, 20) Aziza Noor (PhD) fall 2017, University Instructor Jeddah, Saudi Arabia; 21) Quaid Dobey MS, fall 2017 lab manager NMSU, 22) Marwa Neyaz MS fall 2017, PhD student NMSU.

current –Ram Nadathur (Molecular Biology, PhD, fall 2020), Marwa Neyaz (PhD, Plant and Environmental Science, fall 2021), Sumanjari Das (Biology, PhD, spring 2021), Batool Alkhatib (PhD, Molecular Biology, fall 2022)