CV: Thomas Seth Davis
1472 Campus Delivery, Forest & Rangeland Stewardship, Warner College of Natural Resources, Colorado State University, Fort Collins, CO 80523.

1. Education

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DEGREE</th>
<th>PROGRAM</th>
<th>INSTITUTION</th>
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<tbody>
<tr>
<td>2011</td>
<td>Graduate Certificate</td>
<td>Applied Statistics</td>
<td>Northern Arizona University</td>
</tr>
<tr>
<td>2011</td>
<td>Ph D</td>
<td>Forest Science</td>
<td>Northern Arizona University</td>
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<tr>
<td>2008</td>
<td>MS</td>
<td>Forest Entomology</td>
<td>Northern Arizona University</td>
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<tr>
<td>2006</td>
<td>BS</td>
<td>Forestry</td>
<td>Northern Arizona University</td>
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</table>

2. Academic Positions

(2016 – Present) Assistant Professor, Forest Entomology, Colorado State University
(2015 – 2016) Assistant Professor, Disturbance Ecology, California Polytechnic State University
(2012 – 2015) Postdoctoral Scientist, Regional Approaches to Climate Change (REACCH), University of Idaho
(2011 – 2012) Associate Research Entomologist, Fruit & Vegetable Insect Research Unit, USDA Agricultural Research Service
(2008 – 2011) IGERT Research Assistant, College of Forestry, Engineering, and Natural Sciences, Northern Arizona University (PHD research)

3. Published works

Refereed Journal Articles
(* invited; † graduate student; ‡ undergraduate student; Davis in bold)


42. ‡Mann, A. J., †Davis, T. S. 2020. Effects of environmental variation on growth and virulence of an entomopathogenic fungus (Beauveria bassiana) (Ascomycota: Hypocreales) to North American spruce beetle (Dendroctonus rufipennis Kirby) (Coleoptera: Curculionidae). Biological Control 141:104130.


Articles Under Review


Book Chapters


Popular press


4. Grants and contracts

Total grants and contracts: $1,029,353

Active grants or contracts


(2017) “Surveying biological and functional diversity of insect pollinators in rangeland habitats of Colorado”, Davis, T. S., Agricultural Experiment Station (Hatch funding), $103,728. Disciplinary research.

Closed grants or contracts


5. Invited lectures, papers presented, and symposia

**Invited seminars**


(2019) Complex interactions between a tree-killing insect, host chemistry, and microbial symbioses. Departmental Seminar, Department of Entomology, Texas A&M University, College Station, TX.

(2019) Chemical and microbial ecology of spruce beetle. Departmental Seminar, Botany Department, University of Wyoming; Laramie, WY.


(2017) Biological and functional diversity of pollinators in rangeland habitats of Colorado. Natural Areas Conference; Fort Collins, CO.


(2017) Climate- and disease-induced demographic shifts in an endemic conifer of coastal California. Ecological Society of America; Portland, OR.

(2016) Sometimes getting sick is good: complex dynamics in aphid-crop-virus pathosystems. Departmental Seminar, Bioagricultural Sciences & Pest Management, Colorado State University; Fort Collins, CO.

(2016) Chemical and microbial ecology of western pine beetle in southwestern ecosystems: past, present, and future. Research Seminar, Colorado State University; Fort Collins, CO.

(2016) Complex interactions between herbivores, plants, and crop viruses. Pacific Branch Meeting, Entomological Society of America; Honolulu, HI.

(2016) Complex interactions between herbivores, plants, and viruses. Departmental Seminar (Biology), California Polytechnic State University; San Luis Obispo, CA.

(2015) Drought stress facilitates conditional mutualism in a multitrophic pathosystem. Pacific Branch Meeting, Entomological Society of America; Coeur d’Alene, ID.


(2014) The ecology of yeasts in the bark beetle holobiont. Entomological Society of America; Portland, OR.

(2014) Pine chemical phenotypes regulate a tree-killing symbiotic complex. Research Seminar, California Polytechnic University; San Luis Obispo, CA.

(2014) Tree chemical diversity moderates performance of an insect-microbe complex. Departmental Seminar, University of Idaho; Moscow, ID.

(2014) Pea aphid biotypes in the inland Northwest. Pacific Branch Meeting, Entomological Society of America; Tucson, AZ.

(2014) A bark beetle-microbe complex is moderated by chemical variability in host pines. Research Seminar; University of Washington, Seattle, WA.


(2013) Infection of plants by a bacterial endosymbiont mediates host selection in the potato psyllid. Entomological Society of America; Austin, TX.

(2013) Climate drivers of aphid phenology and biogeography in the Pacific Northwest. Pacific Branch Meeting, Entomological Society of America; Reno, NV.


(2010) Ecological and economic predictions for an invasive bark beetle in the southwestern U.S.A. Entomological Society of America; San Diego, CA.


Contributed seminars or papers
Approximately 50 co-authored contributed seminars; only seminars with Davis as lead presenter are listed.

(2019) Interactions among spruce beetle, Engelmann spruce phloem chemistry, and fungal symbionts. Western Forest Insect Work Conference, Anchorage, AK.


(2017) Biological and functional diversity of pollinators in rangeland habitats of Colorado. Natural Areas Conference, Fort Collins, CO.

(2017) Using aerial survey data to define the range of variation in spruce beetle activity across forest landscapes of the western U.S.: What is normal? Western Forest Insect Work Conference; Jackson, WY.

(2017) Population genetics of pea aphid in the PNW: what does it mean for pest and virus disease management in pulses?

(2013) The effects of tree chemistry and beetle chemical legacy on the growth of a fungal mutualist. Western Forest Insect Work Conference; Coeur d’Alene, ID.

(2013) Long term patterns of herbivore abundance in cereal agrosystems of the Pacific Northwest. Regional Approaches to Climate Change Annual Meeting; Portland, OR.

(2012) Body size phenotypes are heritable and mediate fecundity but not fitness in the lepidopteran frugivore Cydia pomonella. Entomological Society of America; Knoxville, TN.

(2012) Fungal volatiles mediate the orientation response of eusocial wasps. Ecological Society of America; Portland, OR.

(2011) Reciprocal interactions between the bark-beetle associated yeast Ogataea pini and host tree phytochemistry. Entomological Society of America; Reno, NV.

(2011) Reciprocal interactions between the bark-beetle associated yeast Ogataea pini and host tree phytochemistry. (Poster). North America Forest Insect Work Conference; Portland, OR.

(2010) Interactions between a yeast and filamentous fungi associated with the western pine beetle. Entomological Society of America; San Diego, CA.

(2010) Host-tree phytochemistry has non-additive effects on mycangial fungi isolated from Dendroctonus brevicomis. International Union of Forest Research Organizations, World Congress; Seoul, South Korea.

(2010) Characterizing the ecology of a yeast associated with the western pine beetle, Dendroctonus brevicomis. Western Forest Insect Work Conference; Flagstaff, AZ.

(2010) The heritability of size and the effects of size on fitness and fecundity in bark beetles. Western Forest Insect Work Conference; Flagstaff, AZ.
(2009) Response of the western pine beetle (Dendroctonus brevicomis) to variation in host phytochemistry. Entomological Society of America. Indianapolis, IN.


(2009) Detecting the role of bacteria associated with the mycangium of the western pine beetle (Dendroctonus brevicomis). (Poster). Western Forest Insect Work Conference, Spokane, WA.

(2009) Patterns of resource acquisition among fungal symbionts isolated from four bark beetle populations. Western Forest Insect Work Conference; Spokane, WA.

(2008) Interspecific interactions among two foundation bark beetles. Entomological Society of America; Reno, NV.


(2008) An ant-acacia mutualism is altered by land-use in a dry tropical forest. NAU International Research Symposium; Flagstaff, AZ.

(2008) Interspecific interactions among two primary bark beetles. Western Insect Forest Work Conference; Boulder, CO.


(2007) Interactions among primary bark beetles (Dendroctonus frontalis and D. brevicomis) in Northern Arizona. Western Forest Insect Work Conference; Boise, ID.

Symposia organized


(2018) Member symposium, Western Forest Insect Work Conference. “Spruce beetle impacts on high elevation forests”. 1.5-hour session.


6. Teaching and advising

Awards
(2019) Instructor of the Year. Warner College of Natural Resources, Colorado State University.

Courses taught
Colorado State University

California Polytechnic State University
NR 465: Ecosystem management. Lead instructor. 2015.
NR 208: Dendrology. Lead instructor. 2015.
NR 141: Introduction to forest ecosystem management. Lead instructor. 2015.
Northern Arizona University


Graduate student advising

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<tr>
<th>STUDENT NAME</th>
<th>DEGREE</th>
<th>DATES SERVED</th>
<th>ROLE</th>
<th>PROJECT TITLE</th>
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<tbody>
<tr>
<td>Brousil, Matthew</td>
<td>MS</td>
<td>F2015 – S2016</td>
<td>Member</td>
<td>Compounding fire disturbance history encourages coast redwood regeneration and community dominance</td>
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<tr>
<td>Woodward, Brian</td>
<td>MS</td>
<td>F2016 – S2017</td>
<td>Member</td>
<td>Modelling tree mortality from spruce beetle in Colorado</td>
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<tr>
<td>Truslove, Micaela</td>
<td>MS</td>
<td>F2016 – S2018</td>
<td>Member</td>
<td>Allometric biomass equations for urban green ash in Colorado</td>
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<tr>
<td>Mann, Andrew</td>
<td>MS</td>
<td>S2017 – S2019</td>
<td>Advisor</td>
<td>Tradeoffs between environmental tolerance and pathogenicity in an entomopathogenic fungus</td>
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<tr>
<td>Dell, Isaac</td>
<td>MS</td>
<td>S2017 – F2018</td>
<td>Advisor</td>
<td>Geographic and climatic drivers of spruce beetle trap capture and emergence phenology in Colorado</td>
</tr>
<tr>
<td>Khum Thapa-Magar</td>
<td>PhD</td>
<td>F2017 – present</td>
<td>Advisor</td>
<td>Surveying pollinator biological and functional diversity in rangeland habitats of Colorado</td>
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<tr>
<td>Riches, MJ</td>
<td>PhD</td>
<td>F2017 – present</td>
<td>Outside member</td>
<td>Undetermined</td>
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<tr>
<td>Atkins, David</td>
<td>MS</td>
<td>F2018-present</td>
<td>Advisor</td>
<td>Identifying reservoirs and insect vectors of pine wilt disease in the Front Range</td>
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<tr>
<td>Gelles, Ryleigh</td>
<td>MS</td>
<td>F2019-present</td>
<td>Advisor</td>
<td>Quantifying the effects of wildfire severity and wildfire mitigation treatments on biodiversity of wild bee communities</td>
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<tr>
<td>Gadd, Terri</td>
<td>PhD</td>
<td>F2019-present</td>
<td>Member</td>
<td>Lodgepole pine stress physiology host chemistry mountain pine beetle interactions</td>
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Undergraduate research mentoring

(2019) SADIE Internship, Native bees, Katrina Thomas (CSU)
(2019) Research Technician, Bee biodiversity, Sarah LeVane (CSU)
(2018) Research technician, Sawyer beetles, Abi Cohen (FRCC)
(2018) Skills for Undergraduate Participation in Ecological Research (SUPER) program mentor, Seed allelopathy, Amy Spinden (CSU)
(2018) Research technician, Bee biodiversity, Samuel Murray (CSU)
(2017) Research volunteer, Yeast metabolism, Steven Edwards (CSU)
(2017) Senior project, Spruce chemistry, Jens Yetter (Elon)
(2016) Research volunteer, Wheat hormones, Hope Chatwin (CSU)
(2016) Research technician, Floral volatiles, Haley Obermueller (CSU)
(2016) Research technician, Spruce beetle fungus, Fiona Horne (CSU)
(2016) Research volunteer, Spruce beetle fungus, Gaby Carbonell (CSU)
(2016) Senior project, Plant growth & mycorrhizae, Eliot Salazar (Cal Poly)
(2016) Research volunteer, Mosquito behavior, Ben Christensen (Cal Poly)
(2015) REU student project, Cereal leaf beetle, Ned Caisley (UI)
(2009) Hooper Undergraduate research project, Bark beetle yeast, Nate Foote (NAU)
(2008) IGERT Undergraduate research project, Bark beetle yeast, Nate Foote (NAU)

7. Professional service

Professional affiliations
(2008-present) Entomological Society of America. Ten-year member. (ESA)
(2009-present) International Union of Forest Research Organizations (IUFRO)
(2012-2013) Ecological Society of America (ESA)

Committee work for professional societies
(2020) Scientific program committee, Western Forest Insect Workshop (WFIWC), Edmonton, Alberta
(2019) Scientific program committee, Western Forest Insect Workshop (WFIWC), Anchorage, AK
(2018) Scientific program committee, Western Forest Insect Workshop (WFIWC), Denver, CO
(2017) Scientific program committee, Western Forest Insect Workshop (WFIWC), Jackson Hole, WY
(2012) Presider; contributed oral sessions: “Mutualism and Facilitation III”; Ecological Society of America, Portland OR

Editorial and peer review

Editorial work

Peer review
Estimated >100 ad-hoc peer reviews to date, with approximately ~10 reviews per year. Regular proposal reviewer for USDA-NIFA and NSF.

Regular or frequent referee at:
Arthropod-Plant Interactions
Canadian Entomologist
Chemoecology
Current Biology
Ecology
Ecological Entomology
Ecology Letters
Ecology and Evolution
Ecosphere
Environmental Entomology
Frontiers in Ecology and Environment
Frontiers in Ecology and Evolution
Functional Ecology
Fungal Ecology

Journal of Applied Ecology
Journal of Chemical Ecology
Journal of Economic Entomology
Journal of Insect Behavior
Journal of Insect Science
Journal of Pest Science
Microbial Ecology
Phytochemistry
PLOS ONE
Population Ecology
PNAS
Scientific Reports
8. University extension and engagement

**Extension programming**

“Pine wilt disease in Colorado”. Adult, Fort Collins, Colorado. Number of times program was made: 1. Total number of participants: 30. Percent Responsible: 100%. 4th quarter, 2019.

“Spruce beetles, symbiotic fungi, and survival: a tale of forest decline”. Adult, Telluride, Colorado. Number of times program was made: 1. Total number of participants: 50. Percent Responsible: 100%. 3rd Quarter 2019.

“Spruce beetles in Rocky Mountain National Park”. Adult, Estes Park, Colorado. Number of times program was made: 1. Total number of participants: 50. Percent Responsible: 100%. 2nd Quarter 2019.

“Wood borers and bark beetles or urban trees”. Adult, Fort Collins, Colorado. Number of times program was made: 1. Total number of participants: 100. Percent Responsible: 100%. 3rd Quarter 2018.

“Pest management to promote forest health”. Adult, Colorado Springs, Colorado. Number of times program was made: 1. Total number of participants: 200. Percent Responsible: 100%. 4th quarter 2017.

“Fungus-based pesticides for control of tree-killing bark beetles (such as spruce beetle)”. Adult, Fort Collins, Colorado. Number of times program was made: 1. Total number of participants: 40. Percent Responsible: 100%. 3rd Quarter 2017.

“Variation in Engelmann spruce phloem monoterpenes and their association with bark beetle disturbances”. Adult, Fort Collins, Colorado. Number of times program was made: 1. Total number of participants: 50. Percent Responsible: 100%. 4th Quarter 2017.

“What is a healthy forest?” Adult, Colorado Springs, Colorado. Number of times program was made: 1. Total number of participants: 250. Percent Responsible: 100%. 4th Quarter 2016.

**Public workshops**

“Effects of warming and drought on plant protection strategies”. Adult, Fort Collins, Colorado. Number of times program was made: 1. Total number of participants: 200. Percent Responsible: 100%. 4th quarter 2019.

“Spruce beetle in Colorado: basic biology, outbreak patterns, and control options.” Adult, Grand Junction, Colorado. Number of times program was made: 1. Total number of participants: 150. Percent Responsible: 100%. 1st Quarter 2017.

“Pollinator biodiversity in high elevation spruce forests of Colorado.” Adult, Denver, Colorado. Number of times program was made: 1. Total number of participants: 100. Percent Responsible: 100%. 4th Quarter 2017.

**Industry consulting and advising**

For Profit Organization, Rainbow Tree Care Scientific Advancements, Fort Collins, Colorado, United States. (August 2018 - Present).


Government, California State Parks, Clayton, California, United States. (September 1, 2017 - April 30, 2018).


**Planning activities**

9. Diversity and inclusion

**Formal trainings**


**Programs**

(2019) **Science and Diversity: Internships in Ecology** (SaDIE program). Formal scientific mentoring of select high school students from disadvantaged and/or underrepresented populations. Partner with Poudre School District in Fort Collins, CO.