

Justin Blake Runyon

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Education

Ph.D. Pennsylvania State University, Entomology, May 2008.
M.S. Montana State University, Entomology, May 2001.
B.S. University of Virginia's College at Wise, Biology and Mathematics, 1998.

Professional Employment

2008-present Research Entomologist, USDA Forest Service, Rocky Mountain Research Station
2008-present Associate Curator, Montana Entomology Collection, Montana State University
2001-2003 Research Associate, Department of Entomology, Montana State University

Publications (peer-reviewed)

- Page, W. G., M. J Jenkins, and J. B. Runyon. 2012. Mountain pine beetle attack alters the chemistry and flammability of lodgepole pine foliage. *Canadian Journal of Forest Research* 42: 1631-1647.
- Runyon, J. B., J. L. Butler, M. M. Friggens, S. E. Meyer, S. E. Sing. 2012. Invasive Species and Climate Change, pp. 98-120. In D. M. Finch (ed.) *Climate Change in Grasslands, Shrublands and Deserts of the Interior American West: A Review and Needs Assessment*, Gen. Tech. Rep. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO.
- Birdsall, J. B., W. McCaughey, and J. B. Runyon. 2012. Roads impact the distribution of noxious weeds more than restoration treatments in a lodgepole pine forest in Montana, USA. *Restoration Ecology* 20: 517-523.
- Runyon, J. B. 2012. The Nearctic species *Telmaturgus* (Diptera: Dolichopodidae). *The Canadian Entomologist* 144: 337-347.
- Runyon, J. B., M. C. Mescher, G. W. Felton, and C. M. De Moraes. 2010. Parasitism by *Cuscuta pentagona* sequentially induces JA and SA defence pathways in tomato. *Plant, Cell and Environment* 33: 290-303.
- Runyon, J. B., M. C. Mescher, and C. M. De Moraes. 2010. Plant defenses against parasitic plants show similarities to those induced by herbivores and pathogens. *Plant Signaling and Behavior* 5: 929-931.
- Runyon, J. B. and H. Robinson. 2010. *Hurleyella*, a new genus of Nearctic Dolichopodidae (Diptera). *Zootaxa* 2400: 57-65.
- Runyon, J. B. 2010. A new synonymy in *Erebomyia* (Diptera: Dolichopodidae). *Pan-Pacific Entomologist* 86: 139-141.

- Weaver, D. K., M. Buteler, M. L. Hofland, J. B. Runyon, C. Nansen, L. E. Talbert, P. Lamb, and G. R. Carlson. 2009. Cultivar preferences of ovipositing wheat stem sawflies as influenced by the amount of volatile attractant. *Journal of Economic Entomology* 102: 1009-1017.
- Hurley, R. L and J. B. Runyon. 2009. A review of *Erebomyia* (Diptera: Dolichopodidae), with descriptions of three new species. *Zootaxa* 2054: 38-48.
- Piesik, D., D. K. Weaver, J. B. Runyon, M. Buteler, G. E. Peck, and W. L. Morrill. 2008. Behavioral responses of wheat stem sawflies to wheat volatiles. *Agricultural and Forest Entomology* 10: 245-253.
- Runyon, J. B. 2008. New species of long-legged flies (Diptera: Dolichopodidae) from central Pennsylvania. *Proceedings of the Entomological Society of Washington* 110: 363-373.
- Runyon, J. B., M. C. Mescher, and C. M. De Moraes. 2008. Parasitism by *Cuscuta pentagona* attenuates host plant defenses against insect herbivores. *Plant Physiology* 146: 987-995.
- Runyon, J. B., M. C. Mescher, and C. M. De Moraes. 2006. Volatile chemical cues guide host location and host selection by parasitic plants. *Science* 313: 1964-1967.
- Mescher, M. C., J. B. Runyon, and C. M. De Moraes. 2006. Plant host finding by parasitic plants: a new perspective on plant to plant communication. *Plant Signaling and Behavior* 1: 284-286.
- Nansen, C., M. E. Peyton, J. B. Runyon, D. K. Weaver, W. L. Morrill, and S. E. Sing. 2005. Preharvest sampling plan for larvae of the wheat stem sawfly, *Cephus cinctus* (Hymenoptera: Cephidae), in winter wheat fields. *The Canadian Entomologist* 137: 602-614.
- Weaver, D. K., C. Nansen, J. B. Runyon, S. E. Sing, and W. L. Morrill. 2005. Spatial distributions of *Cephus cinctus* Norton (Hymenoptera: Cephidae) and its braconid parasitoids in Montana wheat fields. *Biological Control* 34: 1-11.
- Nansen, C., D. K. Weaver, S. E. Sing, J. B. Runyon, W. L. Morrill, M. J. Grieshop, C. L. Shannon, and M. L. Johnson. 2005. Within-field spatial distribution of *Cephus cinctus* (Hymenoptera: Cephidae) larvae in Montana wheat fields. *The Canadian Entomologist* 137: 202-214.
- Weaver, D. K., S. E. Sing, J. B. Runyon, and W. L. Morrill. 2005. Potential impact of cultural practices on wheat stem sawfly (Hymenoptera: Cephidae) and associated parasitoids. *Journal of Agricultural and Urban Entomology* 21: 271-287.
- Runyon, J. B. and R. L. Hurley. 2004. A new genus of long-legged flies displaying remarkable wing directional asymmetry. *Proceedings of the Royal Society of London B* 271: S114-S116.
- Reeves, W. K., R. L. Hurley, and J. B. Runyon. 2004. Larval development sites for aquatic Dolichopodidae (Diptera). *Journal of Entomological Science* 39: 284-286.
- Hurley, R. L., J. B. Runyon, and P. H. Arnaud. 2004. Fred Carl Harmston (1911-1995). *Myia* 7: 1-39.
- Runyon, J. B. and R. L. Hurley. 2003. Revision of the Nearctic species of *Nepalomyia* Hollis (= *Neurigonella* Robinson) (Diptera: Dolichopodidae: Peloropeodinae) with a world catalog. *Annals of the Entomological Society of America* 96: 403-414.
- Runyon, J. B., W. L. Morrill, D. K. Weaver, and P. R. Miller. 2002. Parasitism of the wheat stem sawfly (Hymenoptera: Cephidae) by *Bracon cephi* and *B. lissogaster* in wheat fields bordering tilled and untilled fallow in Montana. *Journal of Economic Entomology* 95: 1130-1134.

Daisy, B. H., G. A. Strobel, U. Castillo, D. Ezra, J. Sears, D. K. Weaver, and J. B. Runyon. 2002. Naphthalene, an insect repellent, is produced by *Muscodor vitigenus*, a novel endophytic fungus. *Microbiology* 148: 3737-3741.

Runyon, J. B., R. L. Hurley, W. L. Morrill, and D. K. Weaver. 2001. Distinguishing adults of *Bracon cephi* (Gahan) and *B. lissogaster* Muesebeck (Hymenoptera: Braconidae), parasitoids of the wheat stem sawfly (Hymenoptera: Cephidae). *The Canadian Entomologist* 133: 215-217.

Publications (book chapters)

Runyon, J. B., J. F. Tooker, M. C. Mescher, and C. M. De Moraes. 2009. Parasitic plants in agriculture: chemical ecology of germination and host location as targets for sustainable control: a review, pp. 123-136. In E. Lichtfouse (ed.) *Organic Farming, Pest Control and Remediation of Soil Pollutants*, Sustainable Agriculture Reviews 1.

Honors and Awards

- 2012 Deputy Chief's Early Career Scientist Award. Received February 12, 2013 in Washington D.C. Awarded "in recognition of your outstanding research productivity and your impacts on science including your major efforts in science delivery."
- 2012 Merit Award, USDA Forest Service, Rocky Mountain Research Station. Awarded for "superior contribution to the success of the Grassland, Shrubland and Desert Ecosystems Science Program through productive output and effective teamwork and collaboration."
- 2006 National Science Foundation Doctoral Dissertation Improvement Grant (\$12,000).
- 2005 College of Agricultural Sciences Doctoral Student Competitive Grant, Pennsylvania State University (\$2,000).
- 2005 William Yendol Memorial Fund in Entomology, Pennsylvania State University (\$350).
- 2005 College of Agricultural Sciences Graduate Student Travel Award, Pennsylvania State University (\$300).
- 2004 Outstanding Student Award, The Entomological Society of Pennsylvania.
- 2001 Graduate Student Travel Award, Pacific Branch, Entomological Society of America (\$250).

Invited Talks

- 2012 Idaho Weed Conference, Boise. February 2.
- 2011 Annual Meeting of the Entomological Society of America, Reno, NV. November 16.
- 2010 7th International Congress of Dipterology, San José, Costa Rica. August 13.
- 2010 Montana State University, Department of Plant Sciences and Plant Pathology. September 28.
- 2007 Gordon Research Conference, Graduate Research Seminar: Plant Metabolic Engineering, Tilton, NH. July 14.
- 2007 University of Maryland, Department of Entomology. March 9.
- 2006 Pennsylvania State University, Center for Chemical Ecology. October 25.
- 2004 Joint Annual meeting of the American Entomological Society and the Entomological Society of Pennsylvania, Kennett Square, PA. October 21.
- 2004 University of Virginia's College at Wise, Department of Natural Sciences (annual alumnus lecture). May 10.
- 2002 Montana State University, Department of Entomology. October 25.
- 2001 Pacific Branch Entomological Society of America, Graduate Student Symposium, Park City, UT. June 25.

Contributed Presentations and Posters

- Runyon, J.B. “Overview of research on biological control of invasive plants and bark beetles” (oral presentation). U.S. Department of State, International Visitor Leadership Program, Environmental Protection and Park Management: A Project for the People’s Republic of China, Bozeman, MT. September 22, 2011.
- Jenkins, M., J.B. Runyon, W. Page, and C. Toone. “The Influence of Fuel Moisture and Monoterpenes on the Flammability of Conifer Fuels” (oral presentation). Interior West Fire Ecology Conference, Snowbird, UT. November 15, 2011 (presented by M. Jenkins).
- Birdsall, J.L., G.P. Markin, T.M. Kalaris, and J.B. Runyon. “Monitoring biological control agents and leafy spurge populations along the Smith River in Montana, USA” (poster). XIII International Symposium on Biological Control of Weeds, Waikoloa, HI. September 11-16, 2011.
- Littlefield, J.L., G.P. Markin, J. Kashefi, A. deMeij, and J.B. Runyon. “Release and recovery of *Bradyrrhoa gilveolella* on rush skeletonweed in southern Idaho” (poster). XIII International Symposium on Biological Control of Weeds, Waikoloa, HI. September 11-16, 2011 (presented by J.L. Littlefield)
- Runyon, J.B. “Integrating chemical ecology and biological control of invasive plants” (oral presentation). Rocky Mountain Research Station All Scientists Meeting, Ft. Collins, CO. March 23, 2010.
- Runyon, J.B. “Can chemical ecology improve classical biological control of weeds?” (oral presentation). Interagency Biological Control Meeting, Riverton, WY. November 3, 2008.
- De Moraes C.M., M.C. Mescher, J.B. Runyon, and C. Frost. “Chemical communication among plants” (oral presentation). International Society of Chemical Ecology Annual Meeting, University Park, PA. August 18, 2008 (presented by C.M. De Moraes).
- Runyon, J.B., M.C. Mescher, and C.M. De Moraes. “Volatile chemical cues guide host location and host selection by parasitic plants” (poster). Penn State University-Cornell University Joint Minisymposium, University Park, PA. May 3-4, 2007.
- Mescher M.C., C.J. Frost, J.B. Runyon, and C.M. De Moraes. “Recent findings and new perspectives on volatile signaling between plants and insects and among plants” (oral presentation). 13th International Congress on Molecular Plant-Microbe Interactions, Naples, Italy. July 21-27, 2007 (presented by C.M. De Moraes)
- Runyon, J.B., M.C. Mescher, and C.M. De Moraes. “Interactions between parasitic plants and their hosts may impact host plant susceptibility to insect herbivores” (oral presentation). Entomological Society of America, Ft. Lauderdale, FL. December 15-18, 2005.
- Morrill, W.L., K.A. Hoelmer, T.G. Shanower, J.B. Runyon and D.K. Weaver. “Post-diapause development duration of wheat stem sawflies and parasitoids from China and the U.S.” (oral presentation). Annual Meeting of the Entomological Society of Canada, Canmore, Alberta. November 5, 2005.
- Weaver, D.K., J.B. Runyon, W.L. Morrill, D. Piesik, and M.L. Buteler. “Role of host plant volatiles in the spatial orientation of wheat stem sawfly adults” (oral presentation). Annual Meeting of the Pacific Branch, Entomological Society of America, Bozeman, MT. June 22, 2004 (presented by D. Weaver)
- Meikle, W.G., D.K. Weaver, C. Nansen, J.B. Runyon, G.E. Peck, and W.L. Morrill. “Relative capture of male and female wheat stem sawfly adults by pheromone lures and host plant attractants in field traps”

(oral presentation). Annual Meeting of the Pacific Branch, Entomological Society of America, Bozeman, MT. June 22, 2004 (presented by W.G. Meikle)

Runyon, J.B., D.K. Weaver, W.L. Morrill, and C.L. Shannon. "Effects of soil type on volatile semiochemical production in wheat" (poster). Entomological Society of America, Ft. Lauderdale, FL. November 17-20, 2002.

Piesik, D., J.B. Runyon, D.K. Weaver, and W.L. Morrill. "Behavioral responses of male and female wheat stem sawflies, *Cephus cinctus* Norton (Hymenoptera: Cephidae), to wheat volatiles" (poster). Entomological Society of America, Ft. Lauderdale, FL. November 17-20, 2002.

Weaver, D.K., W.L. Morrill, J.B. Runyon, M.J. Grieshop, and C.L. Shannon. "Exploring the spatial structure of wheat stem sawfly and braconid parasitoid populations in Montana wheat fields" (oral presentation). Entomological Society of America, Fort Lauderdale, FL. November 17, 2002. (presented by D. K. Weaver).

Shanower, T.G., K.A. Hoelmer, J.L. Littlefield, W.L. Morrill, J.B. Runyon, and D.K. Weaver. "Wheat stem sawfly biological control" (poster). 1st International Symposium on Biological Control of Arthropods, Honolulu, HI. January 14-18, 2002 (presented by T.G. Shanower).

Runyon, J.B., D.K. Weaver, S. Sing, X. Ni, and W.L. Morrill. "Wheat stem sawfly oviposition in wheat and oat species" (poster). Entomological Society of America, San Diego, CA. December 9-12, 2001.

Runyon, J.B., W.L. Morrill, and D.K. Weaver. "*Bracon cephi* (Gahan) and *B. lissogaster* Muesebeck (Hymenoptera: Braconidae), parasitoids of the wheat stem sawfly, *Cephus cinctus* Norton (Hymenoptera: Cephidae)" (poster). Entomological Society of America, Montreal, Quebec, Canada. December 3-6, 2000.

Morrill, W.L., S.E. Sing, J.B. Runyon, and D.K. Weaver. "Impact of cultural practices on populations of the wheat stem sawfly (Hymenoptera: Cephidae) and its associated parasitoids" (oral presentation). XXI International Congress of Entomology, Foz do Iguassu, Brazil. August 21, 2000.

Runyon, J.B., W.L. Morrill, and D.K. Weaver. "Effect of cultural practices on parasitoids of the wheat stem sawfly, *Cephus cinctus* Norton" (poster). Entomological Society of America, Atlanta, Georgia. December 12-16, 1999.

Teaching Experience

- 2011, 2013 Co-Taught, Insect Taxonomy (BIOO 465), Montana State University
- 2009 Guest Lecturer, Insect Physiology (ENTO 520), Montana State University
- 2007 Guest Lecturer, Plant Responses to Environmental Stress (AGRO 518), Penn State University
- 2006, 2007 Guest Lecturer, Plant Stress (AGECO 121), Penn State University
- 2006 Teaching Assistant, Insect Natural History (ENT 497E), Penn State University
- 2004 Teaching Assistant, Animal Behavior (BIOL 429), Penn State University
- 2004 Teaching Assistant, Insect Taxonomy (ENT 412), Penn State University
- 2003 Teaching Assistant, Turfgrass Insect Pest Management (ENT 317), Penn State University
- 2000 Teaching Assistant, Insect Biology (BIOL 204), Montana State University
- 1996, 1997 Teaching Assistant, Calculus I & II (MATH 204, 205), UVA's College at Wise
- 1997, 1998 Teaching Assistant, Local Flora (BIOL 335), UVA's College at Wise

Selected Professional Services

Ad hoc manuscript reviewer for: *American Entomologist*, *Annales Zoologici*, *Ecology Letters*, *Entomological News*, *Environmental Entomology*, *Fiji Arthropods*, *Invertebrate Systematics*, *Journal of Arid Environments*, *Journal of Chemical Ecology*, *Pest Management Science*, *Raffles Bulletin of Zoology*, *Systematic Entomology*, *The Canadian Entomologist*, *Zootaxa*.

Helped conduct numerous outreach programs, including: “Great Insect Fair” 2004, 2006, 2007 (Penn State University); “Bugfest” 2000 and “Insectennial” 1998 (Montana State University).

Participated in 2006 Penn State University’s Eberly College of Science Action Potential Science Experience for students entering grades 4-8.

Conducted workshop, “Ecology of plant odors: the language of smell” for the Women in the Sciences and Engineering Institute (WISE) Summer Camp, Penn State University, 2006.

President, Friends of the Frost Entomological Museum, 2006-2007.

Entomological Society of America, Eastern Branch Student Representative, 2004-2005; Judge, Comstock Award and Asa Fitch Graduate Student Award, 2006-2007; Judge, Student Competition for the President’s Prize, ESA Annual Meeting, 2011.

Mentor, Pennsylvania Governor’s School for Agricultural Sciences, summer 2004.

Montana Legislature, Helena, MT, presented research about conservation biological control, 2001.

Taught “How to Start Your Insect Collection” class at the Museum of the Rockies’ (Bozeman, MT) “Monsters in Your Backyard” summer program, 2000.

Selected Media Coverage of Research

- 2000 Bozeman Daily Chronicle. Island life inventory turns into world-class adventure. (Evelyn Boswell) Jan. 10, 2000.
- 2003 Nature (Science Update). Disability benefit: Fly’s clipped wing signals power of survival. (Betsy Mason) Nov. 19, 2003.
Discovery Channel Canada, Daily Planet science newsmagazine. Fly’s wings could be mating advantage. Nov. 19, 2003.
New Scientist. The fly that shouldn’t be able to. Nov. 29-Dec. 5, 2003.
- 2004 National Geographic News. With uneven wings, how does new fly species soar? (John Pickrell) Jan. 13, 2004.
Newsweek Polska. Sposób na samice. Jan. 18, 2004.
Today’s Science On File. Smaller is Sometimes Sexier. (Amy Perry) Jan. 2004.
BBC Wildlife Magazine. Flight of Fancy. (Dave Butvill) Feb. 2004.
Natural History Magazine. How Flies Show Off. March 2004.
Nature Australia. Lopsided Flies. Summer 2004-2005.
- 2006 New York Times. This plant has the sense of smell (loves tomatoes, hates wheat). (Henry Fountain) Oct. 3, 2006.
As it Happens, CBC Radio. Oct. 3, 2006.
Washington Post. Science Notebook. (David Brown) Oct. 2, 2006.
Chemical and Engineering News. Prey’s perfume. (Sarah Everts) Oct. 2, 2006.
Science News. Scent stalking: parasitic vine grows toward tomato odor. Sept. 30, 2006.
Science in Action, BBC World Service Radio Interview. Sept. 29, 2006.
Science. Parasitic weed uses chemical cues to find host plant. Sept. 29, 2006.
National Geographic News. Parasitic weed sniffs out prey. (Sean Markey) Sept. 29, 2006.

- ABC News.com. Parasitic weed seems to smell its prey. Sept. 29, 2006.
Leading Edge, BBC Radio 4 Interview. Sept 28, 2006.
All Things Considered, NPR Radio Interview. Sept 28, 2006.
NBC Video. Weed with a nose. (Alan Boyle) Sept. 28, 2006.
MSNBC.com. Parasitic weed 'sniffs out' its prey. Sept. 28, 2006.
The Why Files. The parasite and the perfume. (David Tenenbaum) Sept. 28, 2006.
EurekAlert. Parasitic plants sniff out hosts. (A'ndrea Elyse Messer) Sept. 28, 2006.
Live Science. Cunning weed sniffs out victims. (Jeanna Bryner) Sept. 28, 2006.
NPR.com. Devious dodder vine sniffs out its victims. Sept. 28, 2006.
Discovery Channel.com. Parasitic vine sniffs out victims. Sept. 28, 2006.
CNN.com. Parasitic weed sniffs out its prey. Sept. 28, 2006.
ScienCentral Video News. Vampire Weed. (Victor Limjoco) Oct. 26, 2006.
Smithsonian Magazine. Wild Things: Life as we know it. Dec. 2006.
- 2009 Science News. No brainer behavior. June 20, 2009.
- 2011 New Scientist. The secret life of plants. (Ferris Jabr) March 26, 2011.
- 2012 NPR.com, Krulwich Wonders. Do Plants Smell Other Plants? This One Does, Then Strangles What It Smells. (Robert Krulwich) May 24, 2012.