

Current address: Department of Biological Sciences, P.O. Box 599, Arkansas State University, State University, Arkansas, 72467 Work: (870) 972-3082, Home: (870) 268-8129

EDUCATION

Ph.D. in Entomology

Advisor: Dr. A. B. Broce Kansas State University, Manhattan, KS
Thesis: Host size discrimination and oviposition behavior of *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae), a parasitoid of filth flies (Diptera: Muscidae).
December 2002

M.S. in Entomology

Advisor: Dr. T. D. Galloway University of Manitoba, Winnipeg, Manitoba, Canada
Thesis: Parasitoid wasps (Hymenoptera: Pteromalidae, Ichneumonidae) for control of house flies and stable flies (Diptera: Muscidae) in dairy operations in Manitoba.
December 1997

B.S. Biology Honors Conversion Certificate

Advisors: Drs. O. Kukal and T. Herman Acadia University, Wolfville, Nova Scotia, Canada
Thesis: The effect of body temperature on the temporal and spatial distribution of three species of damselflies (Lestidae: *Lestes*).
May 1995

B.S. in Biology. Minor: Geology Acadia University, Wolfville, Nova Scotia, May 1994

WORK EXPERIENCE

Assistant Professor of Entomology Aug. 2004 –Current
Department of Biological Sciences, Arkansas State University, Jonesboro, AR

Research Associate (Post-doc) in Veterinary Entomology Nov. 2002 – Aug. 2004
Department of Entomology, University of Arkansas, Fayetteville, AR

TEACHING EXPERIENCE

Assistant Professor Arkansas State University, Jonesboro, AR
General Entomology (Undergraduate) August – December 2004/05
Insect Taxonomy (Graduate) August – December 2004
Economic Entomology (Undergraduate) January – May 2005/06
Aquatic Entomology (Graduate) January – May 2005
Medical and Veterinary Entomology (Undergraduate/Graduate) August-December 2005
Invertebrate Zoology (Undergraduate) January – May 2006
Understanding Macroinvertebrate Biodiversity (Graduate) June 27- July 1, 2005

Teaching Assistant Kansas State University, Manhattan, KS
General Entomology Lab January - May 2002

Teaching Assistant Kansas State University, Manhattan, KS
Economic Entomology Lab January - May 1999-2001

Teaching Assistant
Livestock Entomology Lab

Kansas State University, Manhattan, KS
August - December 1998-2001

Teaching Assistant
Introductory Entomology Lab

University of Manitoba, Winnipeg, Manitoba, Canada
January - April 1996-1997

PUBLICATIONS

Peer reviewed:

- S. M. McElroy, A. L. Szalanski, **T. McKay**, A. J. Bermudez, C. B. Owens, and C. D. Steelman. 2005. Molecular assay for the detection of *Cochlosoma anatis* in house flies and turkey specimens by polymerase chain reaction. *Veterinary Parasitology*. 127: 165-168.
- Szalanski, A. L., C. B. Owens, **T. McKay**, and C. D. Steelman. 2004. Detection of *Campylobacter* sp., and *Escherichia coli* O157:H7 from filth flies by polymerase chain reaction. *Medical and Veterinary Entomology*. 18: 241-246.
- McKay, T.** and A. B. Broce. 2004. Discrimination of self-parasitized hosts by the pupal parasitoid *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae). *Annals of the Entomological Society of America*. 97: 592-599.
- Szalanski, A. L., T. W. Palmer, **T. McKay**, and C. D. Steelman. 2004. Infectivity of *Steinernema* spp. (Nematoda: Steinernematidae) to adult litter beetles, *Alphitobius diaperinus* (Coleoptera: Tenebrionidae) in the laboratory. *Biocontrol, Science and Technology*. 14: 81-85.
- McKay, T.** and A. B. Broce. 2003. Response of *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae) to the olfactory stimuli from hosts and their habitat. *Journal of the Kansas Entomological Society*. 76: 31-37.
- McKay, T.** and T. D. Galloway. 1999. Biology of *Phygadeuon fumator* Gravenhörst (Hymenoptera: Ichneumonidae), a pupal parasitoid of house and stable flies (Diptera: Muscidae) in Manitoba. *Proceedings of the Entomological Society of Manitoba*. 55:17-27.
- McKay, T.** and T. D. Galloway. 1999. Survey and release of parasitoids (Hymenoptera) attacking house and stable flies (Diptera: Muscidae) in dairy operations. *The Canadian Entomologist*. 131: 743-756.
- Milanovich, J.R., S.E. Trauth, and **T. McKay**. (In review). Diet of the western slimy salamander (*Plethodon albagula*): a comparison between two mountain ranges in Arkansas. *Southwestern Naturalist*.
- F. Dry, D. C. Steinkraus, C. D. Steelman, R. W. McNew and **T. McKay**. (In review). Occurrence and seasonal distribution of parasitoids (Hymenoptera: Pteromalidae) of house fly (Diptera: Muscidae) pupae from broiler-breeder poultry houses in Northwest Arkansas. *Environmental Entomology*.

Book Chapter:

McKay, T. Entomological Adventures in Arkansas Poultry Operations. *Adventures in the Wild: Tales from Biologists of the Natural State*. University of Arkansas Publishers. (To be published).

Non peer-reviewed articles:

McKay T. and A. Romero. 2005. Tiger beetles common during summer months. *The Jonesboro Sun*. 21 August.

A. Romero and **T. McKay**. 2006. Scorpions' bad rap dates to prehistoric times. *The Jonesboro Sun*. 3 January.

Abstracts:

T. McKay and C. B. Dowling. 2006. The effects of metal-rich poultry litter on the metal body burden of ground-dwelling arthropods: with notes on abundance, p. 11, *In: Wetland perspectives. The Society of Environmental Toxicology and Chemistry (SETAC), MidSouth Regional Chapter Annual Meeting*. Arkansas State University, Jonesboro, AR. 25-26 May (abstract).

Romero, A., **T. McKay**, T. Risch, and S. Trauth. 2006. Biodiversity Center project at Arkansas State University, p. 58, *In: The road to productive partnerships. The 21st Annual Meeting of the Society for the Preservation of Natural History Collections and the Natural Science Collections Alliance 2006 Annual Meeting*. Albuquerque, N.M. 23-27 May (abstract).

T. McKay, C. B. Dowling, B. Rougeau, K. M. Williams, J. W. Klasky, J. S. Wright and K. Vanderpuye. 2005. Impact of poultry litter application on ground-dwelling arthropod populations. *In: Abstracts, Annual Meeting of the Entomological Society of America*, Fort Lauderdale, FL, 15-18 December.

S. McElroy, C. D. Steelman, A. L. Szalanski, **T. McKay**, and Alex Bermudez. 2004. Molecular assay for the detection of *Cochlosoma anatis* in house flies and turkey specimens by polymerase chain reaction. *In: Abstracts, Annual Meeting of the Entomological Society of America*, Salt Lake City, 14-17 November

Broce, A. B., A. Köpf and **T. McKay**. 2004. Adaptive significance of puparial calcification in face flies, *Musca autumnalis* (Diptera: Muscidae). *In: Abstracts, Annual Meeting of the Entomological Society of America*, Salt Lake City. 14-17 November.

McElroy, S., A. L. Szalanski, **T. McKay**, A. Bermudez, and C. D. Steelman. Molecular assay for the detection of *Cochlosoma anatis* in house flies and turkey specimens by polymerase chain reaction. *In: Abstracts, Annual meeting of the Entomological Society of America, Salt Lake City, Utah*. First place student competition: Medical and Veterinary Entomology. November 14-17, 2004

- T. McKay**, C. B. Owens, A. L. Szalanski, and C. D. Steelman. Molecular identification of pathogens carried by black garbage flies associated with turkey production facilities. Annual meeting of the Entomological Society of America, Cincinnati, OH.
October 16-29, 2003
- C. B. Owens, A. L. Szalanski, **T. McKay**, and C. D. Steelman. Molecular diagnostics of pathogens carried by *M. domestica* (Diptera: Muscidae). Annual meeting of the Entomological Society of America, Cincinnati, OH.
October 16-29, 2003
- Szalanski, A. L., C. B. Owens, **T. McKay**, and C. D. Steelman. Molecular diagnostics of pathogens carried by flies using PCR. Southeastern Branch ESA Meeting, Baton Rouge, LA.
March 9-12, 2003
- McKay, T.** and A. B. Broce. Recognition of own parasitized hosts by individual *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae) females reduces self-superparasitism. *In Abstracts: Annual meeting of the Entomological Society of America, San Diego CA.*
December 10, 2001
- McKay, T.** and A. B. Broce. The impact of *Nosema* sp. (Protozoa: Microspora) on size and sex ratio of its host *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae). *In Abstracts: Joint Annual Meeting of the Société d'entomologie du Québec, Entomological Society of Canada, and Entomological Society of America, Montreal, Canada.*
December 5, 2000
- McKay, T.** and A. B. Broce. Oviposition behavior of *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae), a pupal parasitoid of filth flies (Diptera: Muscidae). Annual meeting of the Entomological Society of America, Atlanta, GA. 14 Dec
December 14, 1999
- McKay, T.** and T. D. Galloway. Survey and release of parasitic wasps (Hymenoptera: Pteromalidae, Ichneumonidae) for control of house flies and stable flies in dairy operations, p. 39, *In: Proceedings of the Entomological Society of Manitoba, Annual Meeting of the Entomological Society of Manitoba. Winnipeg, MB, Canada. 25-26 October 1996 (abstract).*

GRANTS RECEIVED

- McKay, T.** and D. Gilmore. 2006. Survival of experimentally introduced bacteria in the house fly, *Musca domestica* L. Research Faculty Award, Arkansas State University. July 1, 2006 – June 30, 2007. \$4,845.
- McKay, T.** and A. D. Christian. 2006. Macroinvertebrate Biodiversity. 2005-2006 No Child Left Behind Program from the U.S. Department of Education. Arkansas Department of Higher Education. \$27,753.
- Dowling, C. and **T. McKay**. 2005. The Bioaccumulation of Arsenic in Plants and Insects. Arkansas Biosciences Institute. \$61,686.

- McKay, T.** and A. D. Christian. 2005. Understanding Biodiversity Using Aquatic Macroinvertebrates. 2004-2005 No Child Left Behind Program from the U.S. Department of Education. Arkansas Department of Higher Education. \$33,700.
- Loftin, K. M., **T. McKay**, K. Vandevender, C. D. Steelman, A. L. Szalanski, W. Watson and A. Chapa. 2004. Using Parasitoids in an Integrated Pest Management Approach to Control Flies on Dairy Farms. Southern Region SARE Grant, USDA. \$288,000 (3 yrs.).
- Stelman, C. D., **T. McKay** and S. McElroy. 2004. Determine the dispersal of house flies and other flies carrying *Cochlosoma anatis*, *E. coli* and Coronavirus among and within turkey production farms. Arkansas Agricultural Experiment Station, Animal Health Fund, \$12,000.
- Stelman, C. D., A. L. Szalanski and **T. McKay**. 2003. Determine the Epidemiological Significance of the House Fly and other Filth Flies in the Movement of the Pathogen Complex that causes Poultry Enteritis and Mortality Syndrome (PEMS) into and among Turkey Flocks. Arkansas Agricultural Experiment Station, Animal Health Fund. \$12,000.

INVITED PAPERS

- T. McKay** and C. B. Dowling. The effects of metal-rich poultry litter on the metal body burden of ground-dwelling arthropods: with notes on abundance. Society of Environmental Toxicology and Chemistry (SETAC), MidSouth Regional Chapter Annual Meeting. Jonesboro, AR May 25-26, 2006

PAPERS PRESENTED

- Romero, A., **T. McKay**, T. Risch, and S. Trauth. Biodiversity Center project at Arkansas State University. Society for the Preservation of Natural History Collections – Natural Science Collections Alliance Joint Meeting. Albuquerque, NM May 23-27, 2006
- T. McKay** and C.B. Dowling. The effects of metal-rich poultry litter on ground beetles. 80th Annual Meeting of the Southeastern Branch Entomological Society of America, Wilmington, NC March 5-8, 2006
- Broce, A. B., A. Köpf and **T. McKay**. Adaptive significance of puparial calcification in face flies, *Musca autumnalis* (Diptera: Muscidae). Annual meeting of the Entomological Society of America, Salt Lake City, Utah. November 14-17, 2004
- McKay, T.** and A. B. Broce. Olfactory cues used in host finding by *Muscidifurax zaraptor*, a pupal parasitoid of house flies, with notes on wasp oviposition behavior. 46th Annual Livestock Insect Workers' Conference, Ruidoso NM. June 23, 2002
- McKay, T.** and A. B. Broce. The impact of *Nosema* sp. (Protozoa: Microspora) on size and sex ratio of its host *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae) with notes on wasp oviposition behavior. 45th Annual Livestock Insect Workers' Conference, Cody, WY. July 11, 2001
- McKay, T.** The role of bioluminescence in insects. Entomology Department Seminar series. Kansas State University, Manhattan, KS. March 2000

- McKay, T.** Intraspecific host discrimination of *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae), a parasitoid of filth flies (Diptera: Muscidae). Entomology Department Seminar series. Kansas State University, Manhattan, KS. April 1999
- McKay, T.** Factors which limit the northern distribution of mosquitoes in North America (Diptera: Culicidae). Entomology Department Seminar Series. University of Manitoba, Winnipeg, Manitoba. September 16, 1997
- McKay, T.** Parasitic wasps (Hymenoptera: Pteromalidae, Ichneumonidae) to control house flies and stable flies in dairy operations in Manitoba. Entomology Department Seminar Series. University of Manitoba, Winnipeg, Manitoba. February 1997
- McKay, T.** The success of *Spalangia* spp., *Muscidifurax* spp., and *Nasonia vitripennis*, parasitoids of filth flies in confined livestock operations. Entomology Department Seminar Series. University of Manitoba, Winnipeg, Manitoba. October 29, 1996
- McKay, T.** and T. D. Galloway. Survey and release of parasitic wasps (Hymenoptera: Pteromalidae, Ichneumonidae) in dairy operations in Manitoba. Annual meeting of the Entomological Society of Manitoba Proceedings. Winnipeg, Manitoba. October 25, 1996
- McKay, T.** and T. D. Galloway. Application of parasitic wasps for control of house flies and stable flies in confinement livestock management systems in Manitoba. Growing for Tomorrow Research Symposium. Portage-La-Prairie, Manitoba. February 29 - March 1, 1996

POSTERS PRESENTED

- T. McKay**, C. B. Dowling, B. Rougeau, K. M. Williams, J. W. Klasky, J. S. Wright, and K. Vanderpuye. Impact of poultry litter application on ground-dwelling arthropod populations. Annual Meeting of the Entomological Society of America, Fort Lauderdale, FL. December 15-18, 2005
- Vanderpuye, K., C. Dowling, and **T. McKay**. Preliminary work: metal uptake in insects after field application of poultry litter. Research Internships in Science of the Environment Poster Presentations, Arkansas State University. August 4, 2005
- Williams, K., **T. McKay**, and C. Dowling. The effects of poultry litter application on ground beetle and spider populations in a crop field in Arkansas. Research Internships in Science of the Environment Poster Presentations, Arkansas State University. August 4, 2005
- C.B. Owens, A. L. Szalanski, **T. McKay**, and C. D. Steelman. Molecular surveillance of pathogens carried by filth flies associated with poultry facilities. First place student competition (M.S poster competition). 79th Annual Meeting of the Southeastern Branch ESA Meeting, Tunica, MS. March 7-9, 2005

McElroy, S., A. L. Szalanski, **T. McKay**, A. Bermudez, and C. D. Steelman. Molecular assay for the detection of *Cochlosoma anatis* in house flies and turkey specimens by polymerase chain reaction. Annual meeting of the Entomological Society of America, Salt Lake City, Utah. First place student competition: Medical and Veterinary Entomology November 14-17, 2004

T. McKay, C. B. Owens, A. L. Szalanski, and C. D. Steelman. Molecular identification of pathogens carried by black garbage flies associated with turkey production facilities. Annual meeting of the Entomological Society of America, Cincinnati, OH. October 16-29, 2003

C. B. Owens, A. L. Szalanski, **T. McKay**, and C. D. Steelman. Molecular diagnostics of pathogens carried by *M. domestica* (Diptera: Muscidae). Annual meeting of the Entomological Society of America, Cincinnati, OH. October 16-29, 2003

Szalanski, A. L., C. B. Owens, **T. McKay**, and C. D. Steelman. Molecular diagnostics of pathogens carried by flies using PCR. Southeastern Branch ESA Meeting, Baton Rouge, LA. March 9-12, 2003

McKay, T. and A. B. Broce. Recognition of own parasitized hosts by individual *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae) females reduces self-superparasitism. Annual meeting of the Entomological Society of America, San Diego CA. December 10, 2001

McKay, T. and A. B. Broce. The impact of *Nosema* sp. (Protozoa: Microspora) on size and sex ratio of its host *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae). Joint Annual Meeting of the Société d'entomologie du Québec, Entomological Society of Canada, and Entomological Society of America, Montreal, Canada. December 5, 2000

McKay, T. and A. B. Broce. Oviposition behavior of *Muscidifurax zaraptor* (Hymenoptera: Pteromalidae), a pupal parasitoid of filth flies (Diptera: Muscidae). Annual meeting of the Entomological Society of America, Atlanta, GA. December 14, 1999

McKay, T. and T. D. Galloway. Parasitoid wasps to control house flies and stable flies in Manitoba dairy barns. Canadian and Manitoba Agreement on Agricultural Sustainability, in Review. Portage-La-Prairie, Manitoba. December 2-3, 1997

PRESENTATIONS TO PUBLIC FORUMS

Television:

August 3, 2005. KAIT TV8, 10:00 P.M. news broadcast. News clip on: "why we are seeing a decrease in West Nile this year?" Reporter: Brad Bean.

November 5, 2004. KAIT TV8, 10:00 P.M. news broadcast. News clip on: "the ballooning of spiderlings and the mysterious thread-like substances floating in the air around Jonesboro, AR." Reporter: Kathy Morris.

Public Presentations:

Butterfly presentation, Bioblitz fund-raiser, Forrest L. Wood Crowley's Ridge Nature Center, Jonesboro, AR April 16, 2005

Women In Technology and Science program, Entomology sessions, Arkansas State University, Jonesboro, AR March 5, 2005

Kansas West Nile Survey Hotline, Spring-Summer 2002

Entomology Presentations, Open house, Department of Entomology, Kansas State University, Manhattan, KS April 1998-2001

AWARDS

Richard Elmore Brown Outstanding College of Agriculture Graduate Student Teaching Award Kansas State University, Manhattan, KS	2001
Morris (O.W. Spide) Memorial Scholarship Department of Entomology, Kansas State University, Manhattan, KS	2001
The Entomological Society of Manitoba Postgraduate Scholarship Winnipeg, Manitoba, Canada	1996

PROFESSIONAL AND SERVICE ACTIVITIES

Manuscript review:

The journal: Medical & Veterinary Entomology (Dr. Gabriella Gibson, Editor) 29 April, 2005.

Grant proposal review:

The National Science Foundation, Behavioral Systems Clusters, (Dr. Godfrey, R. Bourne) 23 August, 2005.

Judge for the student poster competitions at society meetings:

Southeastern Branch ESA meeting, Wilmington, NC, March 7, 2006
Southeastern Branch ESA meeting, Tunica, MS, March 8, 2005

Society Committees:

Education and Youth Committee, Southeastern Branch of the Entomological Society of America. Coordinate with the ESA Education and Youth Committee and Entomology Foundation in national educational activities. To develop local activities or publicity in conjunction with the annual meeting to help capture the attention and educate youth about insects and entomology wherever the branch meeting is held, Fall 2004 - Current

Society Symposia Organizer:

Symposium: Biological Control of Muscoid Diptera, for the 2006 Annual Meeting of the Entomological Society of America to be held December 10-13 2006 in Indianapolis, IN (Ten speakers: 8 national, 2 international speakers).

Science fair judge:

The North Arkansas Regional Elementary Science Fair, Jonesboro, AR May 19, 2006
The Science Fair at Blessed Sacrament school, Jonesboro, AR March 10, 2006
The North Arkansas Regional Science Fair, Jonesboro, AR March 3, 2006

The North Arkansas Regional Science Fair, Jonesboro, AR March 4, 2005

Mentor for RISE (Research Internships in Science of the Environment) NSF program, Arkansas State University:

Summer 2005.

Keisha Williams, Xavier University of Louisiana, New Orleans, LA

Kate Vanderpuye, Morgan State University, Baltimore, MD

Summer 2006.

Heather Young, MO

Mentor for STRIVE (Science Teachers Involvement for Vital Education), Arkansas State University:

Summer 2006: Linda Clarke. Project: Biodiversity of dung-dwelling insects in Arkansas.

Summer 2005: Lee Ann Dickson. Project: Biodiversity of the aquatic macroinvertebrates in Thompson's Creek.

SOCIETY MEMBERSHIPS

Entomological Society of Manitoba

1995 - 1998

Entomological Society of America

January 1998 – Currently

Women in Science, Arkansas State University

August 2004 - Currently