

JANUARY 2017 *CURRICULUM VITAE*

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BACKGROUND

EDUCATION

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
1984	Ph.D.	University of California, Berkeley (Entomology & Parasitology)
1980	M.S.	University of California, Berkeley (Entomology & Parasitology)
1974	B.A./B.S.	University of California, Berkeley (Conservation of Natural Resources)

ACADEMIC RANKS

Full Professor	April 1, 2005
Associate Professor:	July 1, 2000
Assistant Professor:	Sept. 1, 1994

DEPARTMENT AFFILIATION	Entomology (primary department) Environmental Science and Sustainability (ESS) 2013-present Science of Natural and Environmental Systems (SNES) 2010-2013 Biology & Society 2006-2012
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AREAS OF EXPERTISE	Ecology of infectious disease, invertebrate pathology, biological control, insect ecology
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PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Experience</u>
5/90-8/94	BOYCE THOMPSON INSTITUTE, Ithaca, NY <u>Senior Research Associate & Research Associate</u>
1/85-1/90	USDA, ARS, PLANT PROTECTION RESEARCH, Boyce Thompson Inst. <u>Research Entomologist & Research Affiliate</u>
10/77-6/84	DEPT. OF ENTOMOLOGY & PARASITOLOGY, U.C. Berkeley, CA <u>Graduate Research Assistant</u>
12/76-10/77	GREENFIELD, ATTAWAY & TYLER, 91 Larkspur St., San Rafael, CA <u>Research Assistant</u>
4/76-12/76	DEPT. OF ENTOMOLOGY & PARASITOLOGY, U.C. Berkeley, CA <u>Laboratory Assistant</u>
4/76-5/76	LICK OBSERVATORY, U.C. Santa Cruz, CA <u>Consulting Invertebrate Field Biologist</u>
5/75-6/75	THE NATURE CONSERVANCY, San Francisco, CA <u>Field Entomologist</u>
5/74-4/75	DEPT. OF ENTOMOLOGY & PARASITOLOGY, U.C. Berkeley, CA <u>Laboratory Assistant</u>

SABBATICALS AND STUDY LEAVES

Jan. 1, 2015-June 30, 2015	Sabbatical	University of California, Berkeley; University of Washington, Seattle; Ithaca, NY
Jan. 1, 2008-June 30, 2008	Sabbatical	AgResearch, Lincoln, New Zealand
July 15, 2000-Jan. 15, 2001	Sabbatical	Royal Veterinary & Agricultural University, Frederiksberg, Denmark

PROFESSIONAL DEVELOPMENT

June 2013	Molecular Biology Summer Workshop (sponsored by New England Biolabs, Smith College, Northampton (2 week course).
Jan. 2012	Cornell Center for Teaching Excellence: attended two teaching improvement sessions.
June 2011	CALS Faculty Leadership Program (week long program)
June 2002	CALS Thornfield Program for training in teaching (run by Don Viands).
Sept. 1995	Engaging Students in Active Learning, Northeast Regional Teaching Workshop. Ithaca, NY
1992	Supervising and Managing People, New York State School of Industrial and Labor Relations, Cornell University, course given in Statler Hotel
1991	Basic Supervision, Padgett Thompson, course given in Elmira, NY

HONORS AND AWARDS

- 2015 L. O. Howard Distinguished Achievement Award, Eastern Branch Entomological Society of America
- 2013 CU-ADVANCE Professional Development Grant to attend the Molecular Biology Summer Workshop sponsored by New England Biolabs
- 2012 Speaker and Guest, at the International Scientific Conference on Biological Plant Protection: Problems and Contemporary Achievements, funded by the Shota Rustaveli National Science Foundation, Tbilisi, Georgia
- 2012 Mike Duke Memorial Lecture (graduate student selected speaker), Department of Entomology, North Carolina State University (May)
- 2011 Distinguished Scientist Award, International Organization of Biological Control, Nearctic Regional Section
- 2011 Speaker and Guest, Bulgarian Ministry of Education, Youth and Science to give a presentation plus attend a review of the Bulgarian research on *Entomophaga maimaiga*
- 2011-16 Honorary Professor in Zoology, Department of Agriculture and Ecology, Faculty of Life Sciences, University of Copenhagen
- 2011-12 Velux Visiting Professor 2 years, University of Copenhagen (supported by the Villum Foundation)
- 2011 Graduate student-selected speaker, University of Arkansas, Department of Entomology
- 2011 Speaker, 20th Annual H. R. MacCarthy Pest Management Lecture, jointly held by Simon Fraser University and the University of British Columbia
- 2010 Speaker & Visitor, Japanese Society for Insect Pathology
- 2010 Peer-reviewed paper chosen one of top five for 2010, Biology Letters (doi: 10.1098/rsbl.2010.1066)
- 2008-2011 Adjunct Professor, Anhui Agricultural University, Hefei, Anhui, China
- 2009 Invited speaker, University of Wisconsin, US-CALS Distinguished Seminar Series in Sustainable Pest Management
- 2008 Jeffrey Sean Lehman Fund for Scholarly Exchange with China
- 2008 CALS International Travel Award (\$1500)
- 2006 Graduate student-selected speaker, University of Georgia, Department of Entomology
- 2006 Graduate student-selected speaker, Penn. State Univ., Department of Entomology
- 2006 CALS International Travel Award (\$1500)
- 2004-2011 Member of the Academic Council, Provincial Key Laboratory of Microbial Pest Control of Anhui, Anhui Agricultural University, Hefei, Anhui, China
- 2004 SUNY Chancellor's Award for Excellence in Scholarship
- 2003 Invited Speaker & Visitor, University of Helsinki, Faculty of Agriculture and Forestry
- 2002 Outstanding Educator for having most influenced a Merrill Presidential Scholar, Cornell University
- 2002 Strickland Lecturer, University of Edmonton, Alberta, Dept. Biological Sciences
- Fall 2000 Partial support during sabbatical, Danish National Bank
- 1988 Certificate of Merit (with cash award), USDA, ARS, Plant Protection Research Unit, Ithaca, NY
- 1982-83 Distinguished Teaching Assistant, Dept. of Entomology & Parasitology, U.C. Berkeley

GRANT SUPPORT

- **Active Grants/Contracts/Gifts that include 2015-2017**

2016-2017	USDA, Forest Service Cooperative Agreement. Detection and quantification of airborne <i>Entomophaga maimaiga</i> conidia. (\$20,000)
2016-2017	Gypsy Moth Slow the Spread (\$18,000)
2016-2017	USDA Speciality Crops Research Initiative (multi-state project for 5 years; \$9,164,909 total; amount to me \$143,459)
2016-2017	Litwin Foundation. Asian longhorned beetles. (\$150,000)
2016-2017	Alphawood Foundation. Asian longhorned beetles. (\$107,168)
2015-2016	Litwin Foundation. Asian longhorned beetles. \$150,000 (139-8711)
2013-2015	Litwin Foundation. Asian longhorned beetles. \$125,290 (139-8711)
2015-2016	Alphawood Foundation. Asian longhorned beetles. \$90,554 (139-8345)
2014-2015	Alphawood Foundation. Asian longhorned beetles. \$90,156 (139-8345)
2013-2016	Hatch. Microbial pathogens and symbionts associated with the brown marmorated stink bug. \$75,000 (139-7423)
2015-2016	USDA, Forest Service Cooperative Agreement. Detection and quantification of airborne <i>Entomophaga maimaiga</i> conidia. \$32,186 (139-8385)
2012-2016	USDA, Forest Service Cooperative Agreement. Interplay between native and introduced <i>Sirex</i> woodwasps, symbiotic fungi and parasitic nematodes in North America. \$296,921 (139-8380)

- **Proposals submitted**

ACADEMIC RESPONSIBILITIES

CURRENT ADMINISTRATIVE RESPONSIBILITIES IN ENTOMOLOGY

Chair and Quarantine Officer, Sarkaria Arthropod Research Laboratory

Supervisory responsibilities

- **External academic contractor**
James Reilly 2012-2013

- **Past Research Associates**

Louela Castrillo 7/03-11/16
Tarryn Goble 1/16-6/16
Todd Uginé 9/09-5/12

- **Current Postdoctoral Associate**

Tonya Bittner 6/14-present

- **Past Postdoctoral Associates**

Tarryn Goble 1/13-1/16
Stefanie Kroll 5/12-3/13
Mark Sarvary Summers 2011, 2012
Ryan Kepler 1/11-2/12
Ruth Plymale 3/07-6/09
Charlotte Nielsen 3/03-8/05, 2/08-6/08
Louela Castrillo 7/02-6/03
Italo Delalibera 1/01-3/01
Susan M. Smith 1/99-6/99
Philip Kogan 6/96-3/99
Lokesh Joshi 1/96-6/98 (half time)
Michael Bidochka 10/94-6/95

- **Other 2015-16 Research Professionals Supervised**

Technician I Chad Grevelding
Technician I David Harris
Technician II Jake Henry
Technician II Sana Gardescu

- **Cornell Undergraduates Hired to Work With Our Research Group (2014-16)**

Ian Lam
Nadege Aoki
Austin Cody
Alyssa Espinoza
Jacob Henry
Claire Moreland-Ochoa
Eva Morgan
Christian Urbina

- **Volunteer visiting scientist**

Isis Caetano (2011-2013)

TEACHING AND ADVISING RESPONSIBILITIES (2015)

- **Courses Taught**

Entomology 3630 Bugs in Bugs (new name for Entom 3630 3-credit class taught in S14, S16) No teaching assistant.

Entomology 3630 Microbial-Invertebrate Associations: Diversity, Ecology and Evolution. 3 lectures/wk, some of which are demonstration labs S14 (first time given targeting lower level undergraduates; no teaching assistant)

Entomology 4630 Microbial-Invertebrate Associations: Diversity, Ecology and Evolution. 3 lectures/wk, some of which are demonstration labs and local field trips; no TA for S12, when first developed and given (planned for every other year)

Invertebrate Pathology Short Course. June 2015. Taught with colleagues from USDA ARS in Ithaca and Georgia and from Illinois Natural History Survey. 24 students; graduate students, postdocs, technicians and government and industry scientists, from 8 countries; taught with 4 other instructors: Solter, Humber, Shapiro-Ilan and Castrillo.

Entomology 2020 Invasions: Trading Species in a Shrinking World A course about invasive species that non-majors can use to satisfy general biology requirements – co-taught with Jan Nyrop (2 h lecture/wk + one 2h lab/wk) S09, S10, F10, F11, F12, F13, F15, F16

Entomology 6900 Seminar in Ecology and Evolution of Infectious Disease Journal club with one meeting per week. Grad students and upper level undergrads and postdocs and faculty from numerous departments. 1 h/wk F07 (listed as 670 but covered this subject instead), S09, S10, S11, S12 and assisted in S14, F14, S15, F15, S16

Guest lecturer on Epizootiology for Insect Pathology, PhD Course, University of Copenhagen F12

Guest lecturer for Entomology 2410 Applied Entomology in the Field: Insect Pests of Agriculture, Urban Environments, and Public Health (presentation on forest entomology) F12

Entomology 277 Natural Enemies (2 h/wk = 2 credits, every other odd spring 1997-2005 and then yearly from 2006-2007, and AEH on sabbatical during course in S08). Renamed Invasive Species & Natural Enemies (2006-2007, and changed to some extent with a 2/3 credit option) – originally AEH only instructor and then co-taught 2005-2007.

Entomology 4630 Invertebrate Pathology (4 credits, 3 h lecture/week + one 3-hr lab/wk)– taught even springs from 1996-2008 (7 times) but in 2008 taught during fall due to spring sabbatic leave (in 2008, this course became Entomology 4630 but was previously 463)

Entomology 477 Biological Control (2 credits; 2 h/wk) – co-taught with Jan Nyrop in fall 2003

Entomology 670 Seminar in Biological Control (1 credit; 1 h/wk) -- F02, F04, F06, (F07 see 6900)

Entomology 7670 Current Topics in Entomology S05 (full semester), F07 (co-taught), taught one session F09

Guest lecturer for Plant Pathology 201, Magical Mushrooms & Mischievous Molds S07

Guest lecturer in Entomology 201, Alien Empire S07

Guest lecturer in Entomology 241, Applied Entomology in the Field: Insect Pests of Agriculture, Urban Environments, and Public Health. Every spring 2000-2007, S11

Guest lecturer in Entomology 444, Integrated Pest Mgmt Nov. 2007

Guest lecturer in SNES 200, Colloquium Series on Invasive Species Nov. 2006

Guest lecturer on Biological Control, University of Helsinki. Finland. 2003

Guest lecturer in Entomology 767 on Nontarget effects of biological control F99

Latin American course on Microbial Control of Insects. Castelar, Argentina (I presented two full days on fungal pathogens)	1997
Lecturer for Cornell Inst. Biology Teachers	1991
Lecturer/discussion leader; Parasitoid biology/biological control discussion group	1989-1990
Guest lecturer in Entomology 212 (Insect Biology) on insect pathology	1988, 90, 92, 94, 96
Guest lecturer in Entomology 212 (Insect Biology) on insect/plant relations	1986
Guest lecturer in Entomology 212 (Insect Biology) on biological control	1984

- **Educational Innovations Developed**

2015: Invertebrate pathology short course given; one week in June 2015; never before given at Cornell. 24 students from 8 countries.

2014: Entomology 3630 Micro-Invertebrate Associations: Diversity, Ecology and Evolution. This course was similar to Entomology 4630 but required complete revision of every lecture so that presentations were made at a more basic level since the targeted students were sophomores through seniors.

2011 & 2012: Entomology 4630 Microbe-Invertebrate Associations: Diversity, Ecology and Evolution (this new course included an extensive revision of Invertebrate Pathology and pathogens are only covered for approx. 1/3-1/2 of the course. The remainder of the course covers symbionts and vectored microbes). This course no longer has a lab but some lecture periods are used for demonstration labs. (2011 was spent figuring out how to change this course since there was no longer a TA) (3 h/wk; 3 credits) S12

The former Entomology 277 has been changed to Entomology 2020 (Invasions), focusing principally on invasive species. This course now satisfies the CALS non-major's biology requirement.

Entomology 6900/BIOEE 6900 During fall 2007, I started a graduate seminar on Ecology and Evolution of Infectious Disease under Entom 670. This has continued as Entom 6900, alternating direction different semesters between Brian Lazzaro and myself. Graduate students, postdocs, numerous professors and a few undergrads from departments including Entomology, Ecology & Evolutionary Biology, Plant Pathology, Microbiology, the Laboratory of Ornithology and the Vet School. I led this seminar as Entom 6900 in S09, S10, S11, S12 and assisted in S14, F14

- **Undergraduate Research in the Hajek lab**

Connor Roberson (Summer14)

Grace Mitchell (Summer 14)

Aaron Anderson (F10, S11)

Keith Ciccaglione (F10, S11)

Alexandra Jimenez (F08,S09) Cornell Presidential Research Scholar

Victoria Miranda (S05)

Joshua Hannam (F04, S05) Hatch/Multistate Funds for Undergraduate Student Research

Monica Bertoia (F02,S03)
 James McNeil (F01,S02)
 Jennifer Salzwedel (S96)
 Tamar Finley (S95-F95; Entom 497)
 Dominique Wong (1993)

- **2015 Undergraduate Advisees**

Kyle DeMarr (Entomology)
 Rachel Norris (Entomology)

- **2015-16 Teaching Assistants**

F16 Leticia Smith (teaching assistant Entomology 2020)
 S16 No teaching assistant for Entomology 3630
 F15 Isis A. Lima Caetano (teaching assistant Entomology 2020)
 F15 Rachel Norris (undergraduate volunteer teaching assistant Entomology 2020)

EXTENSION/OUTREACH RESPONSIBILITIES (my position does not include extension)

- **Service**

Each year, I receive numerous samples of dead insects for diagnosis of the cause of death.

My research group has participated in the departmental open house (Insectapalooza) each year since 2004. During 2012 and 2013, I had important family conflicts and did not attend but I made sure that others in my laboratory attended and participated.

GRADUATE FIELD MEMBERSHIPS

Entomology

GRADUATE GROUP MEMBERSHIPS

Ecology and Evolution of Infection and Disease

GRADUATE MAJORS

• Current		
Isis Lima-Caetano (M.S.)	Dept. Entomology	To finish: Jan. 2017 (begun May 2013)
• Total Completed		
Joanna Joy Fisher, Ph.D.	Entomology	May 2016 (begun 2010)
Elizabeth Erin Morris, Ph.D.	Entomology	Jan. 2014 (begun 8/09)
Gaylord Desurmont, Ph.D.	Entomology	May 2009
Marcos de Faria, Ph.D. (co-chair)	Entomology	May 2009
Calum Russell, Ph.D.	Entomology	Incomplete (07-08)
James Reilly, Ph.D.	Entomology	January 2009
Ryan Shanley, M.S.	Entomology	August 2007

Thomas Dubois, Ph.D.	Entomology	August 2003
Liande Li, Ph.D.	Entomology	Incomplete (01-02)
Italo Delalibera, Ph.D.	Entomology	May 2002
Melanie Filotas, Ph.D.	Entomology	May 2002
Jennifer Altre, Ph.D. (co-chair)	Entomology	May 2000
Carmenza Gongora, Ph.D. (co-chair)	Entomology	May 1999
Xianqun Luan, Ph.D. (co-chair)	Entomology	Incomplete (97-99)

GRADUATE MINORS

• Total Completed

2005-2011	Puneta Juneja, Dept. Entomology, Cornell University (Ph.D.)
2004-2010	Xi Yang, Dept. of Applied Economics and Management (Ph.D.)
2006-2009	Anuar Morales, Department of Entomology, Geneva (M.S.)
2001-2008	Maureen Carter, Dept. of Ecology & Evolutionary Biology, Cornell (Ph.D.)
2002-2008	Krystal Rypien, Dept. Ecology & Evolutionary Biology, Cornell University (Ph.D.).
2003-2007	Gabor Neumann, Dept. Entomology, Cornell University (Ph.D.)
1999-2006	Stephen Thomas, Dept. of Entomology, Univ. Massachusetts, Amherst, MA (Ph.D.)
2003-2006	Gaylord Desurmont, Dept. of Entomology, Cornell University (M.S.).
2003	Justin L. Hatting, Faculty of Science & Agriculture, Pietermaritzburg, South Africa (Examine for Ph.D. thesis)
2001-2003	Gabor Neumann, Dept. of Entomology, Cornell University (M.S.).
2001-2003	Elizabeth Goulet, Dept. Entomology, Cornell University (M.S.).
7/02	Robert Ouedraogo, Univ. Laval, Quebec (Ph.D.--member of thesis defense panel).
1995-2000	Stefan J. Long, Dept. of Entomology, Cornell University (M.S.)
1996-1998	Gordon Hill, Dept. of Plant Pathology, Cornell University (M.S.).
1992-1997	Raksha Malakar, Dept. of Entomology, University of Massachusetts, Amherst, MA (Ph.D.).
1993-1996	Jill Eccleston, Dept. of Entomology, Cornell University (Ph.D.).
1993-1994	Bonnie Peck, Dept. of Plant Pathology, Cornell University (M.S.).

• Visiting Scientists

2008-2009	Alice Churchill, Visiting Scientist
2008	Fan Peng, Visiting Scientist, Anhui Agricultural University, Hefei, Anhui, China
2001	Fabien Hountondji, Visiting Scientist, IITA, Benin
1999-2001	Claudia Lopez Lastra, Visiting Scientist, CONICET, La Plata, Argentina
1998	Ingeborg Klingen, Doctoral Candidate, Norwegian Agricultural University (7 months)
1997	Sudhir Singh, Scientist, Inst. Rain & Moist Decid. For. Res., Assam, India
1996-97	Charlotte Nielsen, Doctoral Candidate, Danish Veterinary & Agricultural Univ.

OTHER CURRENT PROFESSIONAL ACTIVITIES

PROFESSIONAL SOCIETIES

Society for Invertebrate Pathology

Entomological Society of America

International Organization for Biological Control

EDITORIAL BOARDS

Fungal Ecology (Editor Board Member) (2012-2016; I stepped down from this position to complete commitments with writing/editing books)

BioControl (Associate Editor) (1997-2006)

Biological Control: Theory & Application (2000-2003)

Journal of Invertebrate Pathology (1998-1999)

COMMITTEE ASSIGNMENTS AND PARTICIPATION

- **International/National:**

Society for Invertebrate Pathology

2014-2018 Secretary/Treasurer, Fungal Division
2014 Judge, Fungal Division student poster judging committee
2013 Judge, Fungal Division student poster judging committee
2008-2010 Treasurer, Society for Invertebrate Pathology
2006 Judge, Student Paper Judging Committee (papers on entomopathogenic fungi)
2002-2005 Member, Nominating Committee.
2003 Program Chair, Society for Invertebrate Pathology, Annual Mtg., Burlington, VT.
1998-2000 Secretary, Society for Invertebrate Pathology.
1995-1997 Chair, Microbial Control Division, Society for Invertebrate Pathology.
1996 Member, Student Poster Judging Committee.
1995 Member, Society for Invertebrate Pathology Nominating Committee.
1993-1995 Member, Program and Local Arrangement Committees organizing Society for Invertebrate Pathology annual meeting in Ithaca, 1995.
1989-1991, Secretary/Treasurer, Microbial Control Div., Society for Invertebrate Pathology.
& 1991-1993

USDA, Agricultural Research Service

2004-2005 Member, Mentoring Committee for Lindsey Milbrath, new hire at USDA, ARS, PPRU.
2003-2004 Member, Search Committee for scientist to work on biological control of weeds, Ithaca, NY.
1996 Member, Search Committee for Ecological Insect Pathologist to work in Ithaca, NY.
1998-1999 Member, committee reviewing potential hires for molecular insect pathologist, Ithaca, NY.

International Organization of Biological Control (IOBC)

1998-2000 Member-at-Large on Executive Committee

USDA, Multi-State Regional Project Member and Participant

2013-2017 NE-1332 Biological Control of Arthropod Pests and Weeds
2013-2017 S-1052 The Working Group on Improving Microbial Control of Arthropod Pests
2006-2012 S-1024 Discovery of Entomopathogens and Their Integration and Safety in Pest Management Systems
2000-2005 S-301 Development, Evaluation and Safety of Entomopathogens for Control of Arthropod Pests
1995-2000 S-265 Development and Integration of Entomopathogens into Pest Management Systems
1995 S-240 Development of Entomopathogens as Control Agents of Insect Pests

Entomological Society of America

2010 Member, Judging committee for student debates, National Meeting, San Diego
1995 Member, Judging committee for student paper competition, Eastern Branch, Harrisburg, PA.

• **State/Local:**

Boyce Thompson Institute

1999 Successfully nominated Donald Roberts for the L.O. Howard Distinguished Achievement Award, Eastern Branch, Entomological Society of America
1993-1994 Promotion Review Committee.
1993-1994 Chair, Library Committee.
1991-1993 Member, Library Committee.
1991 Member, Field Sites Committee

• **University:**

94-pres. Member, Field of Entomology
09-15 Committee on Academic Programs and Policies (double term)
09-14 University Appeals Panel
97-00 Faculty Senate (Department of Entomology representative)

• **College:**

08-11 CALS committee [confidential purpose]
07 CALS ad hoc promotion to tenure committee for one individual
06-07 CALS Plant Science Task Force (chair, baseline information subcommittee; chair, summarization of extension subcommittee)
05 CALS ad hoc promotion to tenure committee for one individual
04-07 Member, Mentoring committee for Assistant Prof. in Geneva (Dr. Peck)
03 CALS ad hoc promotion to tenure committee for one individual
94-present Member of Graduate Field of Entomology

• **Department:**

16-present Associate Curator of Invasive Insects, Cornell University Insect Collection.
08-present Quarantine Officer and Chair, Sarkaria Arthropod Research Laboratory

2012 Chair, Departmental Focus group on Ecology, Evolution, Systematics and Behavior

2011-2012 Organizer, Jugatae seminar series

2010-2011 Member, Promotion & Mentoring Committee for Dr. Daniel Peck

2010 Chair, Awards Nomination Committee (TOTAL: 3 of 5 nominations successful)

S10 Chair (interim), Teaching and Curriculum Committee

09 Initiator and organizer of meeting of Women in Entomology at Cornell (Dec. breakfast meeting supported by CU Advance)

07-08 Chair, Mentoring committee for Associate Professor Losey

07-08 Co-chair, Quarantine committee

06-present Member, Teaching & Curriculum Committee

04-pres. Participated in Insectapalooza or in organization for Insectapalooza

03-08 Chair, Awards Nomination Committee (TOTAL: 29 nominations resulting in 10 awards; guidance from chair resulted in the majority of awards being for students)

03-08 Member, Outreach Committee

00-04 Member, Executive Committee

02/03 Member, Genomics Search Committee

97-00 Department of Entomology rep. to Cornell University Faculty Senate

97-00 Member, Admissions Committee

95 Member, Apiculture Search Committee

OTHER CURRENT PROFESSIONAL CONTRIBUTIONS

DEPARTMENTAL REVIEWS

9/13 Chair of 6 member team (professors and professionals from other universities and from Virginia Tech) reviewing the Department of Entomology at Virginia Polytechnic and State University

4/13 Chair of 5 member team (professors and professionals from other universities and the Univ. Delaware) reviewing the Department of Entomology and Wildlife Biology, University of Delaware

CONFERENCES/WORKSHOPS (organized)

1/15 Organized a symposium on *Sirex*. USDA Interagency Forum on Invasive Species 2015, Annapolis, MD. To do this: obtained funding and hosted 2 Chinese professors from Beijing Forestry University. Dr. Juan Shi gave a talk in the symposium and Dr. Jing Tao presented a poster.

10/13 Co-organized a 2 day symposium on *Sirex* in North America on Cornell campus; this was sponsored by the USDA Forest Service (with Dr. Fred Stephen and Dr. Mark Whitmore)

1/13 Co-organized a symposium on *Sirex* in eastern North America, USDA Interagency Forum on Invasive Species 2013, Annapolis, MD (with Dr. Fred Stephen, Univ. Arkansas)

5/11 Co-organized a workshop on *Sirex noctilio* at the North American Forest Insect Work Conference, Portland, OR (with Dr. Fred Stephens, Univ. Arkansas)

- 6/10 Helped to organize 2010 Conference on the Ecology and Evolution of Infectious Disease, Cornell, Ithaca, NY
- 8/09 Organized symposium for the annual meeting of the Society for Invertebrate Pathology, Park City, UT
- 12/07 Organized symposium for the annual meeting of the Entomological Society of America, San Diego, CA.
- 8/06 Helped to organize the International Forum on Entomopathogenic Fungi in Microbial Control. August 26, Anhui Agricultural University, China.
- 3/06 Co-organized symposium for the Eastern Branch of the Entomological Society of America (with Dr. Kelli Hoover, Penn State): Recent Advances in Insect Pathology in the Northeast
- 2003 Program chair, annual meeting of the Society of Invertebrate Pathology.
- 10/02 Organized panel of presentations at APHIS informal meeting on the potential for control of Asian longhorned beetles using alternative control methods.
- 1998 Co-organized formal conference for the International Affairs Committee (Entomol. Soc. Amer.): Origins and Fates of Colonizing Organisms. Joint meeting of Entomological Society of America and American Phytopathological Society, Las Vegas, NV.
- 6/96 Invited to present a general workshop on gypsy moth diseases. Department of Entomology, University of Wisconsin. Attendees also included USDA, APHIS and WI state entomologists.
- 1996 Organized workshop on New Products for Microbial Control. Annual meeting of the Society for Invertebrate Pathology, Cordoba, Spain.
- 1995 Co-organized symposium on Epizootiological Role of Aerial Spores of Entomopathogenic Fungi. Annual meeting, Society for Invertebrate Pathology, Ithaca, NY.
- 1993 Organized workshop on Recent Activities in Product Development and Registration. Society for Invertebrate Pathology meetings, Asheville, NC.
- 1992 Panel Member, Biological Control Revisited Workshop, 1992 USDA Interagency Gypsy Moth Research Forum, Annapolis, MD.
- 1989 Participant, ARS Gypsy Moth Workshop, Beltsville, MD.
- 1988 Participant, ARS-FS Insect Pathology Workshop, Beltsville, MD.
- 1988 Co-organizer of symposium--Epizootiology of Insect Diseases: Examples from the Gypsy Moth. Presented-- Eastern branch meeting, Entomological Society of America, Syracuse, NY.

PRESENTATIONS AT CONFERENCES/SEMINARS/WORKSHOPS (only including presentations that I gave or for which I prepared a significant portion or the presentation and usually was in attendance—therefore, this list does not include most presentations by my students and colleagues including my name as a co-author, unless I made a significant contribution)

[Although the same title might repeated for presentations, the actual talks presented differed if listed under different indentations.]

- 9/16 *Sirex noctilio*-*Amylostereum*-*Deladenus* interactions in North America. International Congress of Entomology, Orlando, FL [**Invited symposium presentation**]
- 7/16 *Entomophaga maimaiga* in *Lymantria dispar* in Eastern Europe. Annual meeting of the Society for Invertebrate Pathology, Tours, France.
- 6/16 Safe use of exotic agents for biological control in forests. North American Forest Insect Work Conference, Washington DC. [**Invited speaker**]
- 3/16 Asian longhorned beetles in quarantine at Cornell. Snodwiggs Department of Entomology, Undergraduate Majors Club [**Invited speaker**]
- 1/16 Gypsy moth, its natural enemies and outbreak dynamics. IDEP Symposium, Eastern Branch Entomological Society of America, Philadelphia [**Invited speaker**]
- 1/16 Challenges facing biological control of invasive arthropods. USDA Interagency Research Forum on Invasive Species, Annapolis, MD. [**Invited speaker**]
- 11/15 Following *Entomophaga maimaiga* over 20 Years in New York State AND Spread of *Entomophaga maimaiga* in Eastern Europe and the Caucasus. Annual Gypsy Moth Review, Virginia Beach [**Invited speaker; 2 presentations**]
- 11/15 Biological control of *Sirex* woodwasps in North America. Cornell University, Cooperative Extension, Agriculture & Food Systems In-Service Training [**Invited speaker**] EXTENSION PRESENTATION
- 8/15 Temporal density dependence of *Entomophaga maimaiga*, Society for Invertebrate Pathology, Vancouver, British Columbia.
- 3/15 Adding biological control to eradication of Asian longhorned beetles. Eastern Branch, Entomological Society of America, Rehoboth Beach, Delaware [**Invited oral presentation; done with Tarryn Goble**]
- 1/15 Avoiding or joining neighbors: Responses of *Sirex* females to symbiotic fungi. USDA Interagency Research Forum on Invasive Species, Annapolis, MD. [**Invited to co-organize the symposium in which this talk was given**].
- 1/15 Microsclerotia applied in hydromulch to control ALB. USDA Interagency Research Forum on Invasive Species, Annapolis, MD. [**Invited speaker**]
- 11/14 Eradication and management of invasive arthropods. at Drivers, Mechanisms and Impacts of Insect Invasions, Centre for Excellence for Invasion Biology, Stellenbosch University, Stellenbosch, South Africa [**Invited speaker/airfare provided**]
- 11/14 Pathogens, parasites and crashing gypsy moth populations. Entomological Society of America, National meeting, Portland Oregon [**Invited oral presentation**]
- 10/14 Ecology and biological control of invasive forest pests. 5th National Conference on Forest Protection and the International Workshop on Green Forest Pest Control, Linan, Zhejiang, China [**Invited trip and keynote paper**]
- 10/14 Symbionts, parasites and the invasive woodwasp *Sirex noctilio*. Beijing Forestry University, Beijing, China [**Invited trip and seminar**]
- 10/14 Invasive and endemic *Sirex*/*Amylostereum* associations. World Congress, International Union of Forestry Review Organizations (IUFRO), Salt Lake City [**Invited paper**]
- 8/14 1. Interactions among fungal and viral pathogens and parasitoids.
2. Multilocus genotypes of *Amylostereum* spp. associated with *Sirex noctilio* and other woodwasps from Europe reveal clonal lineage introduced to the US [As

- second author, I gave this second paper for Louela Castrillo who was first author but didn't attend]. Annual Meeting, Society for Invertebrate Pathology, Mainz, Germany.
- 3/14 Developing entomopathogenic fungi for biological control of Asian longhorned beetles. Eastern Branch of the Entomological Society of America, Williamsburg, VA. **[Invited oral presentation.]**
- 1/14 Synthesis of research on *Sirex noctilio* USDA Interagency Research Forum, Annapolis, MD **[Invited oral presentation]**
- 1/14 Local conditions influence gypsy moth outbreak regulation by *Entomophaga maimaiga*. First Annual Entomology Symposium, Department of Entomology, Cornell University AND USDA Interagency Research Forum, Annapolis, MD (poster presentation)
- 11/13 Microbes and macrobes in a natural system: Gypsy moth in US forests. Yearly meeting of the International Organization for Biological Control, Nearctic Region at the National meeting of the Entomological Society of America, Austin, Texas (invited oral presentation)
- 11/13 Running a lab in a university: Challenges within an ivory tower. National meeting of the Entomological Society of America, Austin, Texas **[Invited oral presentation]**
- 10/13 Biological control releases of *Deladenus siricidicola*. Sirex Symposium, Ithaca, NY **[oral presentation in symposium that I organized; I was not first author on the presentation but I created and presented the material]**
- 9/13 Teaching a course about invasive species: Trading species in a shrinking world. 3rd International Workshop for the Global Challenges University Alliance; Environmental Monitoring and Detection of Invasive Species. Uppsala, Sweden **[invited oral presentation]**
- 9/13 Biological control of Asian longhorned beetles. 3rd International Workshop for the Global Challenges University Alliance; Environmental Monitoring and Detection of Invasive Species. Uppsala, Sweden (poster presentation)
- 8/13 Effect of physiographic and climatic conditions on development of epizootics by *Entomophaga maimaiga*. Society of Invertebrate Pathology (annual meeting), Pittsburgh, PA (oral presentation).
- 8/13 First report of mycoparasitism of entomophthoralean resting spores. Society of Invertebrate Pathology (annual meeting), Pittsburgh, PA (poster presentation).
- 8/13 Deciphering the entomophthoralean genus *Tarichium*. Society of Invertebrate Pathology (annual meeting), Pittsburgh, PA (oral presentation).
- 8/13 A comparison of fungal band formulations for Asian longhorned beetle biological control (first author Todd Uguine was not able to attend), Society of Invertebrate Pathology (annual meeting), Pittsburgh, PA (oral presentation).
- 5/13 East coast bias: Local physiographic conditions influence gypsy moth outbreak regulation by *Entomophaga maimaiga*. Ecology and Evolution of Infectious Disease, Penn. State Univ. campus, State College, PA
- 3/13 Why Entomophthorales are great! Snodwiggs (undergrad entomology club) presentation, Department of Entomology, Cornell University **[Invited oral presentation]**

- 1/13 Fungal fidelity: native symbionts meet invasives. USDA Interagency Research Forum, Annapolis, MD [**Invited oral presentation**]
- 1/13 Comparison of *Entomophaga maimaiga* infections in *Lymantria dispar* and *Lymantria monacha*. USDA Interagency Research Forum, Annapolis, MD [Poster presentation with Melody Keena]
- 9/12 Biology and ecology of *Entomophaga maimaiga*, the fungal pathogen of *Lymantria dispar*. International Scientific Conference, Biological Plant Protection, Problems and Contemporary Achievements. Funded by the Shota Rustaveli National Science Foundation. Agric. Univ. Georgia, Tbilisi, Georgia [**Invited presentation**]
- 8/12 Elevated spring temperatures will impact fungal disease in gypsy moth, *Lymantria dispar* (Lepidoptera: Lymantriidae), larvae. Society of Invertebrate Pathology (annual meeting), Buenos Aires, Argentina.
- 5/12 An invasive interacting with native symbionts and parasites. Mike Duke Memorial Speaker, Department of Entomology, North Carolina State University (graduate student selected speaker) [**Invited presentation**].
- 1/12 Matching host with symbionts. First Annual Entomology Symposium, Department of Entomology, Cornell University [**Invited presentation**].
- 11/11 Challenges with starting up a new insect quarantine rearing facility (AEH presenter; co-authors L. Milbrath & P. Weston). Symposium talk, Entomological Society of America, Reno, Nevada [**Invited presentation**].
- 11/11 Control of Asian longhorned beetles using microbial natural enemies (AEH presenter; co-authors L. Solter & T. Uguine). Symposium talk, Entomological Society of America, Reno, Nevada [**Invited presentation**].
- 11/11 IOBC award acceptance speech. Entomological Society of America, Reno, Nevada [**Invited presentation**].
- 11/11 Contagion in the oaks. 2011 Annual Gypsy Moth Review, Madison, WI. [**Invited presentation**]
- 10/11 *Entomophaga maimaiga* in US gypsy moth populations. Bulgarian Academy of Sciences, Sofia, Bulgaria. [**Invited presentation**]
- 9/11 The most mysterious genus in the Entomophthorales: *Tarichium*. University of Copenhagen. [**Invited presentation for workshop on entomopathogenic fungi**]
- 8/11 Making sure your grant is funded. Society of Invertebrate Pathology (annual meeting), Halifax, Nova Scotia [**Invited presentation at the Student Workshop**]
- 5/11 *Sirex noctilio* and fungal associates. *Sirex noctilio* Research Updates Meeting, Riverdale, MD. [**Invited presentation**]
- 5/11 Nematodes, fungi and *Sirex noctilio*. North American Forest Insect Work Conference, Portland, OR. [**Invited presentation**]
- 4/11 An invasive disrupts native symbiont and parasite associations. Department of Entomology, University of Arkansas. [**Graduate student-selected speaker; Invited presentation**]
- 3/11 Ecology of entomopathogens: Turning disease transmission into control. H. R. MacCarthy Pest Management Lecture, Simon Fraser Univ. & Univ. British Columbia. [**Invited presentation**]
- 3/11 Entomopathogens on the move: Transmission, spread and dynamics. Cary

- Institute for Ecosystem Studies, Millbrook, NY. **[Invited presentation]**
- 12/10 Diversity and function of the *Sirex* woodwasp-fungus symbiosis. Entomological Society of America (annual meeting), San Diego, CA. **[Invited presentation]**
- 12/10 Release/application strategies (inoculation versus inundation). Microbial Biocontrol of Arthropods, Weeds, and Plant Pathogens: Risks, Benefits and Challenges. Shepherdstown, WV **[Invited presentation]**
- 11/10 Pathogens chasing spreading host populations. Annual Gypsy Moth Review, Durham, NC **[Invited presentation given by co-author due to death in my family]**
- 10/10 Biological control of *Sirex* wasp AND Classical biological control of arthropods using pathogens and parasitic nematodes. Biological Control for Nature Conference, Northampton, MA. **[Invited presentations]**
- 9/10 Biological control of the gypsy moth. Japanese Society of Insect Pathology (annual meeting), Lake Kawaguchi (Mt. Fuji), Japan **[Invited trip and presentation].**
- 9/10 Biological control of the gypsy moth. Tokyo University of Agriculture and Technology, Tokyo, Japan **[Invited trip and presentation]**
- 7/10 Transmission of *Metarhizium anisopliae* between male and female Asian longhorned beetles AND Synergistic effect of dual imidacloprid *Metarhizium anisopliae* applications against Asian longhorned beetles (*Anoplophora glabripennis*). Society for Invertebrate Pathology (annual meeting), Trabzon, Turkey.
- 6/10 Pathogens chasing spreading host populations. Ecology and Evolution of Infectious Disease Conference, Cornell University.
- 1/10 *Amylostereum areolatum* associated with *Sirex* species in the eastern United States. USDA, Interagency Research Forum on Invasive Species, Annapolis, MD **[Invited presentation].**
- 12/09 Asian longhorned beetles and you. Snodwiggs (undergrad entomology club) presentation, Department of Entomology, Cornell University.
- 11/09 Chasing gypsy moth pathogens. Jugatae seminar series, Department of Entomology, Cornell University.
- 8/09 Epizootiology and its Impact on Microbial Control (=symposium title): Epizootiology of Fungal Diseases of Arthropods, Annual meeting, Society for Invertebrate Pathology, Park City, Utah **(Gave this talk and organized this symposium).**
- 6/09 Winners and losers: fungal pathogens and insects. Dept. of Entomology, Phytopathology and Agricultural Zoology, ESALQ, University of Sao Paulo, Piracicaba, Sao Paulo, Brazil **(Invited presentation).**
- 6/09 Ecology of fungal pathogens infecting arthropods. Siconbiol, Bento Goncalves, Rio Grande do Sul, Brazil **(Invited presentation).**
- 5/09 Chasing gypsy moth pathogens: A space-time odyssey. University of Copenhagen, Department of Ecology, Zoology Section **(Invited presentation).**
- 3/09 Biological control of tussock moths. Entomological Society of America, Eastern Branch meeting, Harrisburg, PA **(Invited symposium presentation).**

- 3/09 Chasing gypsy moth pathogens, Department of Entomology, University of Wisconsin, Madison (**Invited speaker for the US-CALS Distinguished seminar series in sustainable pest management**).
- 1/09 A space-time odyssey: Movement of gypsy moth and its pathogens. USDA, Interagency Research Forum on Invasive Species, Annapolis, MD (**Invited presentation**).
- 11/08 Microbes for control and eradication of invasive arthropods. Entomological Society of America, Reno, Nevada (**Invited symposium presentation**).
- 10/08 Asian longhorned beetle. Biology, impacts, status, and current research. Invasive Non-Native Forest Pest Conference, Ithaca, NY (**Invited presentation**).
- 7/08 Ecology of insect hosts and entomopathogens. International Congress of Entomology, Durban, South Africa (**Invited keynote presentation**).
- 7/08 Epizootiology of a fungal disease of *Lymantria dispar*. IUFRO (International Union of Forest Research Organizations), Pretoria, South Africa (**Invited presentation**).
- 4/08 Spore wars: The fungal pathogen controlling gypsy moth. AgResearch, Lincoln, New Zealand (**Invited seminar**).
- 4/08 Microbes for control and eradication of invasive arthropods. New Zealand Entomological Society, Christchurch, New Zealand (**Invited symposium presentation**).
- 1/08 Rearing *Sirex noctilio* from red pine in central New York. USDA, Interagency Research Forum on Invasive Species, Annapolis, MD (**Poster presentation**).
- 12/07 & 1/08 ORGANIZER OF SYMPOSIUM—CLASSICAL BIOLOGICAL CONTROL USING PATHOGENS AND NEMATODES. And presented Neglected natural enemies: Pathogens and nematodes attacking arthropods (**Oral presentation**) and Dispersal of gypsy moth (*Lymantria dispar*) pathogens to newly established host populations, Annual Meeting, Entomological Society of America, San Diego, CA and USDA, Interagency Research Forum on Invasive Species, Annapolis, MD (**Poster presentations**).
- 10/07 Gypsy moth pathogens on the move. Annual Gypsy Moth Review, Shepherdstown, West Virginia (**Invited oral presentation**).
- 10/07 Behavioral changes in fungal-infected insects. Entomological Society of Canada, Saskatoon, Saskatchewan, Canada (**Invited symposium presentation**).
- 8/07 *Entomophaga maimaiga* and gypsy moth in North America: Toward predicting epizootics. Annual Meeting, Society for Invertebrate Pathology, Quebec City, Quebec, Canada.
- 6/07 Persistence and transmission of a fungal disease of gypsy moth. Ecology and Evolution of Infectious Disease Conference, Ithaca, New York (**Poster presentation**).
- 11/06 & 1/07 Dispersal of gypsy moth pathogens into areas newly colonized by gypsy moth. Annual Gypsy Moth Review, St. Louis, Missouri (**Invited oral presentation**) AND USDA, Interagency Research Forum on Invasive Species, Annapolis, MD (**Poster presentation**).
- 11/06 Femmes fatales: Pathogen transmission during mating and reduction in reproduction of ALB females infected with *Metarhizium anisopliae*. Emerald ash

- borer and Asian longhorned beetle Research and Development Review, Cincinnati (**Invited presentation**).
- 9/06 Developing fungal bands for control of Asian longhorned beetle in the U.S., Alphawood Foundation, Chicago (**Invited presentation**).
- 8/06 Persistence and spread of *Entomophaga maimaiga* infecting gypsy moth. Annual Meeting, Society for Invertebrate Pathology, Wuhan, China.
- 8/06 Developing fungal bands for control of Asian longhorned beetle, *Anoplophora glabripennis*, in the U.S. International Forum on Entomopathogenic Fungi in Microbial Control. August 26, Anhui Agricultural University, China (**Invited and helped organize the forum**).
- 6/06 Distribution and Abundance of Carabidae in Soybean Fields in Central New York. 2006 International Carabidologists' Meeting, Carabid Beetle Diversity and George E. Ball's 80th Birthday Celebration; 7-10 June 2006, Carnegie Museum of Natural History, Pittsburgh, PA. (First-authored poster presentation; I was not present but I made the poster).
- 5/06 A programmatic response to threats posed by non-indigenous arthropods. Cornell Invasive Species Forum (sponsored by Center for the Environment).
- 4/06 Population biology and epizootiology of a fungal entomopathogen. Dept. Entomology, University of Georgia (**Seminar-chosen by department graduate students**).
- 3/06 Variability in impact of the fungal pathogen *Entomophaga maimaiga* on gypsy moth. Dept. Entomology, Penn. State (**Seminar-chosen by department graduate students**).
- 3/06 Introduction to symposium I co-organized on Recent Advances in Insect Pathology in the Northeast. Eastern Branch, Entomological Society of America.
- 3/06 *Entomophaga maimaiga* and the gypsy moth: Current issues. Eastern Branch, Entomological Society of America (**Invited symposium presentation**).
- 1/06 Microbial control of Asian longhorned beetles: What are fungal bands? USDA, Interagency Research Forum on Gypsy Moth and Other Invasive Species, Annapolis, MD (**Poster presentation**).
- 12/05 Gypsy moth and *Entomophaga maimaiga*: 16 years together in the United States. Annual Meeting Entomological Society of America, Ft. Lauderdale, FL (**Invited symposium presentation**).
- 11/05 Gypsy moth pathogens on the move. Annual Gypsy Moth Review, Philadelphia, PA (**Invited presentation**).
- 8/05 Development of fungal bands to assist in eradication of Asian longhorned beetle, *Anoplophora glabripennis*. Annual meeting Society for Invertebrate Pathology, Anchorage, AK (**Invited symposium presentation**).
- 3/05 Whatever happened to gypsy moth? Annual meeting Eastern Branch Entomological Society of America, Harrisburg, PA (**Invited symposium presentation**).
- 11/04 Toward mass production of *Entomophaga maimaiga* resting spores: Avoiding Spore Dormancy. Gypsy Moth Review, Indianapolis, IN (**Invited presentation**).
- 8/04 Developing a microbial: Choosing the right strain. Annual meeting Society for Invertebrate Pathology, Helsinki, Finland (**Invited symposium presentation**).

- 3/04 Prospects for classical biological control using entomopathogens, Eastern Branch, Entomological Society of America, New Haven, CT (**Invited symposium presentation**).
- 2/04 Classical biological control using entomopathogenic fungi, Regional Project S-301 (**Invited seminar**).
- 1/04 Assessing the safety of microbial biological control agents, USDA, Interagency Research Forum on Gypsy Moth and Other Invasive Species, Annapolis, MD (**Invited presentation**).
- 11/03 Safe use of insect pathogens for control of tree-dwelling insects, University of Helsinki, Dept. Applied Biology (**Invited presentation**)
- 8/03 Manipulation of host behavior by entomopathogenic fungi (co-authors: J. Losey & C. Gilbert), Symposium presentation, Annual meeting Society for Invertebrate Pathology, Burlington, VT (**Invited symposium presentation**).
- 7/03 Biological control of an invasive long-horned beetle wood-borer. Univ. California, Davis (**Invited**).
- 1/03 Two oral presentations: The use of fungal bands for control of Asian longhorned beetle. AND Activity of *Entomophaga maimaiga* resting spores. USDA, Interagency Research Forum on Gypsy Moth and Other Invasive Species, Annapolis, MD (**Both talks invited**).
- 1/03 Use of fungal pathogens for control of Asian longhorned beetle, USDA, ARS, PPRU, Ithaca (**Invited**).
- 11/02 Specificity determinants for a fungal entomopathogen—in symposium on Insect-Pathogen Interactions: Physiological Mechanisms Underlying Host Specificity, Entomological Society of America, Annual Meeting, Fort Lauderdale, FL (**Invited symposium presentation**).
- 11/02 *Entomophaga maimaiga*: Long term trends in activity, non-target effects and mass production. Gypsy Moth Review, Niagara Falls, Ontario, Canada (**Invited**).
- 10/02 Alternative methods for controlling Asian longhorned beetle. USDA, APHIS workshop, Baltimore, MD (Invited speaker and panel leader).
- 8/02 Using Entomophthorales for control: Maturation, dormancy and survival of laboratory-produced *Entomophaga maimaiga*, Annual meeting of the Society for Invertebrate Pathology, Iguassu Falls, Parana, Brazil.
- 3/02 Safe use of biological control: Examples for a fungal pathogen attacking gypsy moth (Annual Strickland Lecture) AND Controlling longhorns on the loose (Biological Science Dept. seminar), University of Alberta, Edmonton (**Both talks invited**).
- 1/02 Activity of *Entomophaga maimaiga* in the field Interagency Research Forum on Gypsy Moth and Other Invasive Species, Annapolis, MD (**Invited**).
- 11 & 12/01 Safe use of biological control: Exploring host specificity of the gypsy moth pathogen *Entomophaga maimaiga*. Brock University, St. Catherine's, Ontario—departmental seminar (Biological Science Dept.) (**Invited**).
University of Massachusetts, Amherst—departmental seminar (Entomology Dept.) (**Invited**).
- 8/01 Fear no fungus, Annual meeting of the Society for Invertebrate Pathology, Noordwijkerhout, NL (**Invited symposium presentation**)

- 8/01 Safe use of insect pathogens for biological control, Nearctic Region, International Organization of Biological Control, Bozeman, MT (**Invited keynote session presentation.**)
- 5/01 Controlling *Anoplophora glabripennis* with entomopathogenic fungi in the United States (**Invited paper**). Anhui Agric. Univ., Hefei, China.
- 1/01 Control of *Anoplophora glabripennis* with entomopathogenic fungi (**Invited paper.**) Interagency Research Forum on Gypsy moth and Other Invasive Species, Annapolis, MD.
- 11/00 A fungal pathogen naturally controlling a forest defoliator in the United States. Royal Vet. & Agric. Univ., Copenhagen, Denmark (**Invited paper**).
- 9/00 Use of *Entomophaga maimaiga* resting spores to control *Lymantria dispar* in the United States (**Invited paper**). Eur. COST project mtg., Zurich, Switzerland
- 1/00 Pathogens for control of *Anoplophora glabripennis* (**Invited paper**) AND In vitro formation of resting spores by the gypsy moth fungal pathogen *Entomophaga maimaiga* (poster). Interagency Research Forum on Gypsy moth and Other Invasive Species, Annapolis, MD.
- 11/99 Evaluation of long-term resting spore persistence and implications for effects to gypsy moth populations. Ann. Gypsy Moth Rev., Madison, WI (**Invited paper.**).
- 10/99 Evaluation of non-target effects of pathogens used for management of arthropods. IOBC International Symp., Montpellier, France (**Invited symposium paper**);2nd au.
- 8/99 Conidial density of the entomopathogen *Entomophaga maimaiga* infecting gypsy moth, *Lymantria dispar* AND Formation of azygospores by the insect pathogenic fungus *Entomophaga maimaiga* in vitro. Ann. Mtg., Soc. Invertebr. Pathol., Irvine, CA.
- 7/99 The fungal pathogen *Entomophaga maimaiga* controls *Lymantria dispar* in the United States. Anhui Agric. Univ., Hefei, China (**Invited presentation**).
- 5/99 Spore Wars: May the fungus be with you. Dept. Entomol., Cornell Univ.
- 2/99 Insuring the safe use of pathogens for biological control introductions. (**Invited symposium paper**) AND Asian studies of the use of fungi and nematodes against Asian longhorned beetle (**Invited symposium paper**). Eastern Branch Entomol. Soc. Amer. Ann. Mtg., Virginia Beach, VA.
- 1/99 The use of entomopathogens for control of cerambycids in Japan and China (**Invited symposium paper**) AND The effects of *Entomophaga maimaiga* on Lepidoptera in the litter (Poster). Interagency Research Forum on Gypsy moth and Other Invasive Species, Annapolis, MD.
- 11/98 Manipulating epizootics of entomopathogenic fungi (**Invited symposium paper**) AND INVITED TO CO-ORGANIZE FORMAL CONFERENCE FOR THE INTERNATIONAL AFFAIRS COMMITTEE (ESA): Origins and fates of colonizing organisms. Joint meeting of Entomological Society of America and American Phytopathological Society, Las Vegas, NV.
- 8/98 Epizootiology of Entomophthorales infecting forest Lepidoptera and their potential use for control. Ann. Mtg. Soc. Invertebr. Pathol., Sapporo, Japan (**Invited symposium paper**).
- 6 & 10/98, Spore Wars: *Entomophaga maimaiga* versus gypsy moth. Departmental seminar

- 3/99 Dept. Biol. Sci., Univ. Maine, Orono AND Michigan Entomol. Soc. Ann. Mtg., Tipton, MI AND Environ. Sch. For., Syracuse (**Invited seminars**).
- 3/98 Insect diseases: The latest progress in basics and use for control. Eastern Branch Entomol. Soc. Amer. Ann. Mtg., Cherry Hill, NJ (**Invited symposium paper**).
- 1/98 Epizootics caused by *Entomophaga maimaiga*: Risk of infection associated with behavior of late instar gypsy moth larvae. Interagency Gypsy Moth Forum, Annapolis, MD (**Invited symposium paper**).
- 12/97 Evaluation of physiological host range versus ecological host range using the fungal entomopathogen *Entomophaga maimaiga*. Ann. Mtg. Entomol. Soc. Amer., Nashville, TN (**Invited symposium paper**).
- 11/97 Is *Entomophaga maimaiga* the "silver bullet" for gypsy moth control? **Invited departmental seminars** at Virginia Polytechnic Inst. and No. Carolina State Univ.
- 11/97 The perils of loitering in the litter. Annual Gypsy Moth Review, Charleston, WV (**Invited paper**).
- 8/97 Behavior of *Lymantria dispar* larvae increases exposure to *Entomophaga maimaiga*. Ann. Mtg. Soc. Invertebr. Pathol., Banff, Alberta, Canada.
- 3/97 Epizootics caused by *Entomophaga maimaiga* in *Lymantria dispar* populations in North America. (**Invited symposium paper**.) 16th Congresso Brasileiro de Entomologia, Salvador, Bahia, Brazil.
- 1/97 Spore wars: *Entomophaga maimaiga* versus gypsy moth in North America (**Invited keynote address**) AND *Entomophaga maimaiga*: Where do we go now? (**Invited symposium paper**) USDA Interagency Gypsy Moth Research Forum, Annapolis, MD.
- 11/96 Comparing methods for manipulating *Entomophaga maimaiga*. (**Invited symposium paper**). Annual Gypsy Moth Review, Annapolis, MD.
- 10/96 Most everything you ever wanted to know about fungal resting spores. Comstock '96, Cornell University.
- 9/96 Development and germination of *Entomophaga maimaiga* azygospores AND Use of RAPD analysis to evaluate the origin of the weevil pathogen *Zoophthora phytonomi* in North America. Annual meeting, Society for Invertebrate Pathology, Cordoba, Spain.
- 4/96 *Entomophaga maimaiga*: A fungal pathogen of gypsy moth in the limelight. (**Invited paper**). Cornell Community Conference on Biological Control, Ithaca, NY.
- 1/96 Should *Entomophaga maimaiga* be considered as an operational technique? (**Invited symposium paper**). USDA Interagency Gypsy Moth Research Forum, Annapolis, MD.
- 12/95 Fungi and insects: From mutualists to pathogens AND Effects of insect host plants on fungal entomopathogens. (**Invited symposium papers**). Annual meeting, Entomological Society of America, Las Vegas, NV.
- 11/95 The changing face of gypsy moth biological control: *Entomophaga maimaiga*. (**Invited symposium paper**). Annual Gypsy Moth Review, Traverse City, MI.
- 10 & 11/95 Spore wars: fungi vs. gypsy moth. (**Invited seminars**). Department of Entomology, University of Delaware and Department of Entomology, Cornell Univ., Geneva, NY.

- 7/95 Aerial dispersal of *Entomophaga maimaiga* conidia. (Symposium paper). Coorganized symposium on Epizootiological role of aerial spores of entomopathogenic fungi. Annual meeting, Society for Invertebrate Pathology, Ithaca, NY.
- 3/95 A fungal pathogen in outbreak forest tent caterpillar populations. Northeastern Forest Insect Work Conference, Burlington, VT.
- 2/95 Efficient pathogen reservoirs: Resting spores of the Entomophthorales AND The role of field studies in estimating host ranges of entomopathogens. (**Invited symposium papers**). Eastern Branch, Entomological Society of America, Harrisburg, PA.
- 1/95 Effect of *Entomophaga maimaiga* on non-target Lepidoptera AND The persistence and long-term impact of *Entomophaga maimaiga*. (**Invited symposium papers**). Coorganized symposium *Entomophaga maimaiga: A fungus among us*, where second paper was presented. USDA, Interagency Gypsy Moth Research Forum, Annapolis, MD.
- 11/94 Spore wars: fungi vs. gypsy moth. (**Invited seminar**). Department of Entomology, Penn. State Univ.
- 9/94 Epizootiology of insect diseases: efficacy, spread, and persistence of pathogens in the Entomophthorales. (**Invited seminar**). Department of Plant Pathology, Cornell University.
- 8/94 Re-discovery of the fungus *Entomophaga maimaiga* and its application for gypsy moth control. (**Invited symposium paper**) Annual Meeting, Society for Invertebrate Pathology, Montpellier, France.
- 8/94 Associations of *Zoophthora phytonomi* genotypes with curculionid hosts. and Use of molecular markers to distinguish entomopathogenic fungi isolated from gypsy moths (second author). (Poster presentations) International Mycological Congress, Vancouver, BC.
- 8/94 Nontarget effects of the fungus *Entomophaga maimaiga* (second author). (**Invited paper**). Southern Forest Insect Conference Work Conference, Lafayette, Louisiana.
- 2/94 Impacts of the fungus *Entomophaga maimaiga* on non-target Lepidoptera. (**Invited symposium paper**) Eastern branch meeting, Entomological Society of America, Newport, RI.
- 1/94 Physiological host range of *Entomophaga maimaiga*. AND Spread of *Entomophaga maimaiga*: Airborne conidial movement and modeling disease range expansion. (Poster presentations) USDA Interagency Gypsy Moth Research Forum, Annapolis, MD.
- 8/93 Spread of *Entomophaga maimaiga* in gypsy moth populations. AND Host specificity of *Entomophaga maimaiga*. Annual Meeting, Society for Invertebrate Pathology, Asheville, NC.
- 5/93 New options for insect control using fungi. (**Invited symposium paper**) Beltsville Symposium XVIII--Pest Management: Biologically based technologies, Beltsville, MD.
- 3/93 Establishment and spread of *Entomophaga maimaiga* in North American gypsy moth. Great Lakes-St. Lawrence Winter Workshop in Mycology, Ithaca, NY.
- 2/93, 3/93, Spore Wars: Fungi vs. Gypsy moth.

- 10/93 & 1/94 Bodega Bay Marine Lab, University of California, Davis (**Invited paper**),
Department of Entomology, University of California, Davis,
Entotech, Davis, California (**Invited paper**),
Entomology Department seminar, Cornell University,
Northeast Tri-Agency Pesticide Meeting, Niagara Falls, NY (**Invited paper**).
- 1/93 *Entomophaga maimaiga*, the "Silver Bullet" against gypsy moth? (**Invited paper**) Virginia Gypsy Moth Review, Roanoke, VA.
- 12/92 & 1/93 Spread of *Entomophaga maimaiga*.
National meeting, Entomological Society of America, Baltimore, MD,
AND
USDA Gypsy Moth Research Forum, Annapolis, MD (Poster presentation).
- 11/92 & 12/92 Epizootiology of a fungal disease of gypsy moth. (**Invited papers**)
Laval University, Quebec City, Quebec,
Brock University, St. Catherine's, Ontario, and
Wells College, Aurora, NY.
- 11/92 Conditions of host and environment associated with *Entomophaga maimaiga* epizootics. (**Invited paper**) Annual Gypsy Moth Review, Indianapolis, IN.
- 8/92, 11/92 & 1/93 Effects of the fungal pathogen *Entomophaga maimaiga* on non-target Lepidoptera. (**Invited papers**)
Annual Gypsy Moth Review, Indianapolis, IN,
USDA Gypsy Moth Research Forum, Annapolis, MD, and
Southeastern Forest Insect Work Conference, Williamsburg, VA.
- 8/92 Introduction of *Entomophaga maimaiga* to novel areas and spread from release sites. (**Invited symposium paper**) AND Interactions between host food and survival of a fungal pathogen. Annual meeting, Society for Invertebrate Pathology, Heidelberg, Germany.
- 1/92 & 5/92 Establishment and spread of *Entomophaga maimaiga* along the gypsy moth leading edge.
USDA Gypsy Moth Research Review, Annapolis, MD,
Comstock '92, Cornell University. (Poster presentation), AND
Boyce Thompson Institute, Ithaca, NY.
- 12/91 Arthropod pathogens and microbial control in the 90's: Challenges and opportunities: Fungi. (**Invited symposium paper**). National meeting, Entomological Society of America, Reno, NV.
- 11/91, 1/92 & 3/92 Establishment of *Entomophaga maimaiga* along the advancing front. (**Invited papers**).
Annual Gypsy Moth Review, Raleigh, NC,
Virginia Gypsy Moth Review, Virginia Beach, VA, and
Northeastern Forest Insect Work Conference, Albany, NY.
- 12/90 Epizootic potential of *Entomophaga maimaiga* in gypsy moth populations. National meeting, Entomological Society of America, New Orleans, LA.
- 10/90 Epizootics of *Entomophaga maimaiga* in North America. (**Invited paper**). University of Massachusetts, Amherst.
- 10/90 The fungus among us: Introduction strategies for *Entomophaga maimaiga*. Boyce Thompson Institute, Ithaca, NY.

- 8/90 Classical biological control of North American gypsy moth by Japanese *Entomophaga maimaiga*: 80 years after the initial introductions. Intern. Colloq. Invertebr. Pathol., Adelaide, Australia. (Poster Presentation).
- 3/90 & 2/91 A "new" fungus disease of gypsy moth. (**Invited papers**)
Northeastern Forest Insect Work Conference, Albany, NY, and
27th Northeast Aerial Applicators Conference, Ithaca, NY.
- 1/90 *Entomophaga maimaiga* panzootic in northeastern gypsy moth populations.
USDA Gypsy Moth Research Review (**Invited paper**),
USDA, ARS, Plant Protection Research Unit, Ithaca, NY, and
Boyce Thompson Institute, Ithaca, NY.
- 11/89 A 'new' fungal disease of gypsy moth. (**Invited paper**) National Gypsy Moth
Review, Annapolis, MD.
- 10/89 Biological control of gypsy moth using a fungal pathogen. Entomology
Department seminar, Cornell University.
- 10/89 Ecological considerations for biological control introductions of
entomopathogenic fungi. (**Invited symposium paper**). Eastern branch meeting,
Entomological Society of America, Providence, RI.
- 8/89 Development of *Entomophaga maimaiga* within gypsy moth larvae. Annual
meeting, Society for Invertebrate Pathology, College Park, MD.
- 1/89 Development of an enzyme-linked immunosorbent assay for detection of
Entomophaga maimaiga in gypsy moth, *Lymantria dispar*, larvae. UCLA Symp.:
New Directions in Biological Control, Frisco, CO. (Poster presentation).
- 10/88 & 1/89 Ecological evaluation of *Entomophaga maimaiga* for biological control.
Boyce Thompson Institute, Ithaca, NY, and
USDA, ARS, Plant Protection Research Unit, Ithaca, NY.
- 10/88 CO-ORGANIZER OF SYMPOSIUM--EPIZOOTIOLOGY OF INSECT
DISEASES: EXAMPLES FROM THE GYPSY MOTH. Presented--Ecological
considerations for biological control introduction of *Entomophaga maimaiga*. &
Introduction. Eastern branch meeting, Entomological Society of America,
Syracuse, NY.
- 7/88 Characterization and ecology of *Entomophaga maimaiga*, a fungal pathogen of
the gypsy moth, *Lymantria dispar*. International Congress of Entomology,
Vancouver, Canada. (Poster presentation).
- 3/88 Suitability of *Entomophaga maimaiga* for biological control of the gypsy moth.
Boyce Thompson Institute, Ithaca, NY.
- 12/87 Influence of entomophthoran infection on the behavior of gypsy moth larvae,
Lymantria dispar. National meeting, Entomological Society of America, Boston,
MA.
- 4/87 Mycoinsecticides for insect biocontrol: Use of *Beauveria bassiana* against the
Colorado potato beetle. Boyce Thompson Institute, Ithaca, NY.
- 10/86 Ambient environmental conditions favoring development of the gypsy moth
fungal pathogen, *Entomophaga aulicae* (Reich.) Humber. Eastern Branch
meeting, Entomological Society of America, Philadelphia, PA.
- 9/86 The ecology and behavior of aphids on European white birch. Entomology
Department seminar, Cornell University.

- 6/86 Population ecology of the aphids on *Betula pendula*. Blandy Experimental Farm seminar, Univ. of VA.
- 3/86 A multi-state evaluation of *Beauveria bassiana* for Colorado potato beetle control. Biological Control of the Colorado Potato Beetle, Workshop II, MD Dept. of Agric.
- 12/85 Defensive behavior of birch aphids toward *Adalia bipunctata* (Coleoptera: Coccinellidae). National meeting, Entomological Society of America, Hollywood, FL.
- 1/85 Coexistence of three aphid species on birch. Cornell University, Ecology & Evolutionary Biology Symposium.
- 9/84 Regulation of aphids on European white birch in northern California by natural enemies. Ecology of Aphidophaga II conference, Zvikov Podhradi, Czechoslovakia.
- 11/83 The aphid fauna of European white birch: a comparison of foliage preference. National meeting, Entomological Society of America, Detroit, MI.
- 12/82 Within tree distribution of aphids on European white birch (*Betula pendula*). National meeting, Entomological Society of America, Toronto, Canada.
- 11/82 Biological control of aphids on ornamental trees. Annual meeting, California Forest Pest Action Council, Sacramento, CA.
- 6/81 Factors affecting mortality of *Scolytus multistriatus* (Marsham) (Coleoptera: Scolytidae) in California. Pacific Branch meeting, Entomological Society of America, Oakland, CA.

RESEARCH PANELS

- 2014 Member of USDA, NIFA, AFRI Grant Review Panel, Organismal level Entomology and Nematology (September)
- 2005 Member, review panel. USDA, ARS, Office of Scientific Quality Review evaluating scientific quality of ARS research projects in the Crop Protection and Quarantine National Program (NP 304), Biological Control and Development for Insects and Mites
- 2004 Panel Manager, USDA, National Research Initiative Competitive Grant Review Panel, Integrative Biology of Arthropods and Nematodes.
- 2003 Member, USDA, National Research Initiative Competitive Grant Review Panel, Entomology & Nematology.
- 2002 Member, USDA, National Research Initiative Competitive Grant Review Panel, Entomology & Nematology.
- 1993-1994 Member of USDA, Forest Service panel to review grant proposals for study of the gypsy moth fungal pathogen *Entomophaga maimaiga*
- 1993 Member, USDA, National Research Initiative Competitive Grant Review Panel, Entomology & Nematology.

PUBLICATIONS (different types of peer-reviewed publications, e.g., primary research papers, reviews and books, are now merged, following common practice in our department; after

approximately 2006, if Dr. Hajek was not the major author of a publication, her name is always given last among contributing authors; part way through 2012-3 (publication #187), the same rules apply except in cases where Dr. Hajek conducted the second greatest effort on a research project and, in these cases, she is second author).

240. Shapiro-Ilan, D., Hajek, A.E. Conclusions. In: Hajek, A.E., Shapiro-Ilan, D. (eds.), *Ecology of Invertebrate Diseases*. Wiley (at the publisher).
239. Hajek, A.E., Shapiro-Ilan, D. General concepts on ecology of invertebrate diseases. In: Hajek, A.E., Shapiro-Ilan, D. (eds.), *Ecology of Invertebrate Diseases*. Wiley (at the publisher).
238. Hajek, A.E., Meyling, N.V. Ecology of Invertebrate Pathogens: Fungi. In: Hajek, A.E., Shapiro-Ilan, D. (eds.), *Ecology of Invertebrate Diseases*. Wiley (at the publisher).
237. Hajek, A.E., Shapiro-Ilan, D. (eds.) *Ecology of Invertebrate Diseases*. Wiley. (at the publisher).
236. Steinkraus, D., Hajek, A.E., Liebherr, J.K. Zombie beetles killed by *Eryniopsis lampyridarum*. (in prep.).
235. Brodeur, J., Hajek, A.E., Heimpel, G.E., Sloggett, J.J., Mackauer, M., Pell, J.K., Völkl, W. Predator, parasitoids and pathogens. In (H.F. van Emden, R. Harrington, eds.) *Aphids as Crop Pests*, 2nd edn. CABI, Wallingford, UK (chapter accepted in 2014; book delayed due to other chapters not being complete).
234. Hodge, K., Hajek A.E. Entomophthoralean pathogen infecting a millipede. *J. Invertebr. Pathol.* (in prep.).
233. Hajek, A.E., Haynes, K. Long term *E. maimaiga* sampling (in prep.).
232. Henry, J., Hajek, A.E., Meeker, Caetano, I.A.L. *Sirex nigricornis* versus *Sirex noctilio* (in prep.).
231. Hajek, A.E., Becnel, J., Solter, L.F., more. A new microsporidan pathogen of the brown marmorated stink bug, *Halyomorpha halys*. *J. Invertebr. Pathol.* (in prep.).
230. Gryganskyi, A., Mullens, B.A., Rehner, S., Vilgalys, R., Hajek, A.E. Hijacked: Co-option of host behavior by entomophthoralean fungi. *PLOS Pathogens: Pearls* (invited review; in revision).
229. Fisher, J.J., Hajek, A.E. Synergism between *Metarhizium brunneum* and imidacloprid against Asian longhorned beetles. *J. Econ. Entomol.* (submitted).

228. Kenis, M., Hurley, B., Hajek, A.E., Cock, M. Classical biological control against insect tree pests: Facts and figures. *Biol. Invasions* (submitted).
227. Hajek, A.E., Tobin, P.C., Kroll, S., Long, S. Fungal associations of *Sirex noctilio* and *Sirex nigricornis*. *Biol. Invasions* (in revision).
226. Caetano, I.A.L., Hajek, A.E. Mating behavior and sexual receptivity of *Sirex noctilio* (Hymenoptera: Siricidae). *Ann. Entomol. Soc. Amer.* (accepted).
225. Goble, T.A., Gardescu, S., Jackson, M.A., Hajek, A.E. Evaluating *Metarhizium brunneum* F52 microsclerotia in hydromulch formulations using different tackifiers under forest and orchard conditions. *BioControl* (submitted July 2016).
224. Bittner, T., Hajek, A.E., Haavik, L., Allison, J., Nahrung, H. Putative multiple introductions of *Sirex noctilio* (Hymenoptera: Siricidae) in northeastern North America based on microsatellite genotypes, and implications for biological control. *Biol. Invasions* 49 (1-2): 19-26 (plus cover).
223. Williams, D.W., Hajek, A.E. Biological control of *Sirex noctilio* (Hymenoptera: Siricidae) in the northeastern United States using an exotic parasitic nematode. *Biol. Control* (in revision).
222. Morris, E.E., Stock, S.P., Castrillo, L., Williams, D.W., Hajek, A.E. Characterization of a novel woodwasp-parasitic *Deladenus* sp. (Nematoda: Neotylenchidae) and its associated fungal symbiont (Russulales: Amylostereaceae). *Parasitology* (in revision).
221. Hajek, A.E., Gryganskyi, A., Bittner, T., Liebherr, J.K., Liebherr, J.H., Moulton, J.K., Jensen, A.B., Humber, R.A. 2016. Phylogenetic placement of two species known only from resting spores: *Zoophthora independentia* sp. nov. and *Z. porteri* comb nov. (Entomophthorales: Entomophthoraceae). *J. Invertebr. Pathol.* 140: 68-74.
220. Hajek, A.E., Gardescu, S., Delalibera Jr., I. 2016. *Classical Biological Control of Insects and Mites: A Worldwide Catalogue of Pathogen and Nematode Introductions*. USDA Forest Service. FHTET-2016-06, 57 pp.
219. Goble, T.A., Gardescu, S., Jackson, M.A., Hajek, A.E. 2016. Evaluating different carriers of *Metarhizium brunneum* F52 microsclerotia for control of adult Asian longhorned beetles (Coleoptera: Cerambycidae). *Biocontr. Sci. Technol.* (accepted May 17, 2016).
218. Kanzaki, N., Giblin-Davis, R.M., Gonzalez, R., Trujillo, Y., Hajek, A.E. 2016. Tylenchid entomoparasites isolated from *Spondylis buprestoides* (L.) and *Asemum striatum* (L.). *Nematology* 18: 775-780.
217. Fisher, J.J., Hajek, A.E. 2016. Influence of mating and age on susceptibility of Asian longhorned beetle to a fungal pathogen. *J. Invertebr. Pathol.* 136: 142-148.

216. Bittner, T., Hajek, A.E., Liebherr, J.K. 2016. Associations among *Serropalpus substriatus* (Coleoptera: Melandryidae) and *Sirex* (Hymenoptera: Siricidae) communities. Grt. Lks. Entomol. .
215. Hajek, A.E., van Nouhuys, S. 2016. Interactions among fatal diseases and parasitoids driven by density of a shared host. Proc. R. Soc. B 283: 20160154. <http://dx.doi.org/10.1098/rspb.2016.0154>.
214. Solter, L.F., Hajek, A.E., Lacey, L.A. 2016. Exploration for entomopathogens. (L. Lacey, ed.), Microbial Agents for Control of Insect Pests: from theory to practice, pp. 13-23, Academic Press, Amsterdam. **[invited review]**
213. Hajek, A.E., van Frankenhuyzen, K. 2016. Use of entomopathogenesis against forest pests, pp. 313-330. In: (L. Lacey, ed.), Microbial Agents for Control of Insect Pests: from theory to practice, Academic Press, Amsterdam. **[invited review]**
212. Sarvary, M.A., Hajek, A.E., Boröczky, K., Raguso, R.A., Cooperband, M.F. 2016. Investigating the effects of symbiotic fungus on the flight behavior of *Sirex noctilio* (Hymenoptera: Siricidae). Can. Entomol. 147: 543-551. (doi:10.4039/tce.2016.10).
211. Pilarska, D., Hajek, A.E., Keena, M., Linde, A., Kereselidze, M., Georgiev, G., Georgieva, M., Mirchev, P., Takov, D., Draganova, S. 2016. Susceptibility of larvae of nun moth, *Lymantria monacha* (Linnaeus, 1758) (Lepidoptera), to the Entomopathogenic fungus *Entomophaga maimaiga* Humber, Shimazu and Soper (Entomophthorales) under laboratory and field conditions. Acta Zool. Bulg. 68: 117-126.
210. Zúbrik, M., Hajek, A., Pilarska, D., Špilda, I., Georgiev, G., Hrašovec, G., Hirka, A., Goertz, D., Hoch, G., Barta, M., Saniga, M., Kunca, A., Nikolov, C., Vakula, J., Galko, J., Pilarski, P., Csóka, G. 2016. The potential for the fungal pathogen *Entomophaga maimaiga* to regulate gypsy moth *Lymantria dispar* (L.) (Lepidoptera; Erebidae) in Europe. J. Appl. Entomol. 140: 565-579. doi: 10.1111/jen.12295
209. Wingfield, M.J., Garnas, J.R., Hajek, A.E., Hurley, B.P., de Beer, Z.W., Taerum, S.J. 2016. Novel and co-evolved associations between insects and microorganisms as drivers of forest pestilence. Biol. Invasions 18: 1045-1056.
208. Hajek, A.E., Hurley, B.P., Kenis, M., Garnas, J.R., Bush, S.J., Wingfield, M.J., van Lenteren, J.C., Cock, M.J.W. 2016. Exotic biological control agents: a solution or contribution to arthropod invasions? Biol. Invasions 18: 953-969.
207. De Fine Licht, H., Hajek, A.E., Jensen, A.B., Eilenberg, J. 2016. Utilizing genomics to study entomopathogenicity in the fungal phylum *Entomophthoromycota*: A review of current genetic resources. Advances in Genetics 94: 41-65. **[invited review]**.

206. Caetano, I.A.L., Morris, E.E., Hajek, A.E. 2016. Growth of the *Sirex*-parasitic nematode *Deladenus siricidicola* on the white rot fungus *Amylostereum*. *J. Invertebr. Pathol.* 134: 12-14.
205. Goble, T.A., Gardescu, S., Jackson, M.A., Fisher, J.J., Hajek, A.E. 2016. Conidial production, persistence, and pathogenicity of hydromulch formulations of *Metarhizium brunneum* F52 microsclerotia under forest conditions. *Biol. Control* 95: 83-93.
204. Castrillo, L.A., Hajek, A.E., Pajares J.A., Thomsen, I.M., Csóka, G., Kenaley S.C., Kepler, R.M., Zamora, P., Angeli, S. 2015. Multilocus genotyping of *Amylostereum* spp. associated with *Sirex noctilio* and other woodwasps from Europe reveal clonal lineage introduced to the US. *Fung. Biol.* 119: 595-604.
203. Fisher, J.J., Hajek, A.E. 2015. Maternal exposure of a beetle to pathogens protects offspring against fungal disease. *PLoS ONE* 10(5): e0125197. doi:10.1371/journal.pone.0125197.
202. Goble, T., Hajek, A.E., Jackson, M.A., Gardescu, S. 2015. Microsclerotia of *Metarhizium brunneum* F52 applied in hydromulch for control of Asian longhorned beetles (Coleoptera: Cerambycidae). *J. Econ. Entomol.* 108: 433-443. doi: 10.1093/jee/tov013
201. Castrillo, L.A., Hajek, A.E. 2015. Detection of presumptive mycoparasites associated with *Entomophaga maimaiga* resting spores in forest soils. *J. Invertebr. Pathol.* 124: 87-89.
200. Hajek, A.E., Tobin, P.C., Haynes, K.J. 2015. Replacement of a dominant viral pathogen by a fungal pathogen does not alter the synchronous collapse of a forest insect outbreak. *Oecologia* 177: 785-797.
199. Sarvary, M.A., Cooperband, M.F., Hajek, A.E. 2015. The importance of olfactory and visual cues in developing better monitoring tools for *Sirex noctilio*. *Agric. For. Entomol.* 17: 29-35.
198. Ugine, T.A., Peters, K.E., Gardescu, S., Hajek, A.E. 2014. The effect of time post-exposure and gender on horizontal transmission of *Metarhizium brunneum* conidia between mating pairs of Asian longhorned beetles (Coleoptera: Cerambycidae). *Environ. Entomol.* 43: 1552-1560.
197. Csóka, G., Hirka, A., Szôcs, L., Hajek, A.E. 2014. A rovarpatogén *Entomophaga maimaiga* Humber, Shimazu & Soper, 1988 (Entomophthorales: Entomophthoraceae) gomba megjelenése magyarországi gyapjaslepke (*Lymantria dispar*) populációkban. [First occurrence of the entomopathogenic fungus, *Entomophaga maimaiga* Humber, Shimazu & Soper, 1988 (Entomophthorales: Entomophthoraceae) in Hungarian gypsy moth (*Lymantria dispar*) populations.]. *Növény Védelem* 50(6): 257-262.
196. Desurmont, G.A., Hajek, A.E., Agrawal, A.A. 2014. Dynamic adaptation of an herbivore to seasonally-changing plant defenses. *Ecol. Entomol.* 39: 489-592.

195. Morris, E.E., Hajek A.E. 2014. Eat or be eaten: Fungus and nematode switch off as predator and prey. *Fungal Ecology* 11: 114-121.
194. Morris, E.E., Hajek, A.E., Ziemann, E., Williams, D.W. 2014. *Deladenus* (Tylenchida: Neotylenchidae) reproduction on species and strains of the white rot fungus *Amylostereum*. *Biol. Control* 73: 50-58.
193. Reilly, J.R., Hajek, A.E., Liebhold, A.M., Plymale, R.S. 2014. The impact of *Entomophaga maimaiga* on outbreak gypsy moth population: the role of weather. *Environ. Entomol.* 43: 632-641.
192. Goble, T.A., Rehner, S.A., Long, S.J., Gardescu, S., Hajek, A.E. 2014. Determining the virulence of commercial fungal isolates and U.S. native isolates of *B. brongniartii* against Asian longhorned beetles, *Anoplophora glabripennis*. *Biol. Control* 72: 91-97.
191. Fisher, J.J., Hajek, A.E. 2014. Thermoregulatory behavior and fungal infection of *Anoplophora glabripennis* (Coleoptera: Cerambycidae). *Environ. Entomol.* 43: 384-392.
190. Fuester, R., Hajek, A.E., Schaefer, P., Elkinton, J.S. 2014. Biological control of *Lymantria dispar*. In (R.G. Van Driesche & R. Reardon, eds.) *The Use of Classical Biological Control to Preserve Forests in North America*. FHTET-2013-02. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. pp 49-82 [Invited review.] (actually published in 2014)
189. Hajek, A.E., Morris, E.E. 2014. Biological control of *Sirex noctilio*. In (R.G. Van Driesche & R. Reardon, eds.) *The Use of Classical Biological Control to Preserve Forests in North America*. FHTET-2013-02. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia. pp 331-346 [Invited review.].
188. Hrašovec, B., Pernek, M., Lukić, I., Milotić, M., Diminić, D., Franjević, M., Hajek, A., Linde, A., Pilarska, D. 2013. First record of the pathogenic fungus *Entomophaga maimaiga* Humber, Shimazu, and Soper (Entomophthorales: Entomophthoraceae) within an outbreak populations of *Lymantria dispar* (Lepidoptera: Erebidae) in Croatia. *Periodicum Biologorum* 115: 379–384. [published in 2014]
187. Hajek, A.E., Longcore, J.E., Simmons, D.R., Peters, K., Humber, R.A. 2013. Chytrid mycoparasitism of entomophthoralean azygospores. *J. Invertebr. Pathol.* 114: 333-336.
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185. Ugine, T.A., Jenkins, N., Gardescu, S., Hajek, A.E. 2013. Comparing fungal band formulations for Asian longhorned beetle biological control. *J. Invertebr. Pathol.* 113: 240-246.

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180. Ugine, T.A., Gardescu, S.A., Hajek, A.E. 2013. The within-season and between tree distribution of imidacloprid trunk-injected into *Acer platanoides*. *J. Econ. Entomol.* 106: 874-882.
179. Hajek, A.E., Nielsen, C., Kepler, R., Long, S.J., Castrillo, L. 2013. Fidelity among *Sirex* woodwasps and their fungal symbionts. *Microb. Ecol.* 65: 753-762.
178. Siegert, N.W., McCullough, D.G., Wheeler, M.W., Hajek, A.E. 2012. Evaluation of potential versus realized primary infection of gypsy moth (Lepidoptera: Lymantriidae) by *Entomophaga maimaiga* (Zygomycetes: Entomophthorales). *Environ. Entomol.* 41: 1115-1124.
177. Ugine, T.A., Gardescu, S., Lewis, P.A., Hajek, A.E. 2012. Efficacy of imidacloprid, trunk-injected into *Acer platanoides*, for control of adult Asian longhorned beetles (Coleoptera: Cerambycidae). *J. Econ. Entomol.* 105: 2015-2028.
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175. Yu, Q., Hajek, A., Bergoin, M., Tijssen, P. 2012. *Papilio polyxenes* densovirus has an iteravirus-like genome organization. *J. Virol. (Genome Announcement)* 86: 9534-9535.
174. Tobin, P.C., Hajek, A.E. 2012. Release, establishment, and initial spread of the fungal pathogen *Entomophaga maimaiga* in island populations of *Lymantria dispar*. *Biol. Control* 63: 31-39.
173. Morris, E.E., Jimenez, A., Long, S.J., Williams, D.W., Hajek, A.E. 2012. Variability in growth of *Deladenus siricidicola* on strains of the white rot fungus *Amylostereum areolatum*. *BioControl* 57(5): 677-686 [DOI: 10.1007/s10526-012-9447-1].

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171. Reilly, J.R., Hajek, A.E. 2012. Prey processing by avian predators increases virus transmission in the gypsy moth. *Oikos* 121: 1311-1316. [DOI: 10.1111/j.1600-0706.2011.19752.x].
170. Kereselidze, M., Pilarska, D., Hajek, A., Jensen, A.B., Linde, A. 2011. First record of *Entomophaga maimaiga* (Entomophthorales: Entomophthoraceae) in Georgia. *Biocontr. Sci. Technol.* 21: 1375-1380.
169. Ugine, T., Gardescu, S., Hajek, A.E. 2011. The effect of exposure to imidacloprid on Asian longhorned beetle (Coleoptera: Cerambycidae) survival and reproduction. *J. Econ. Entomol.* 104: 1942-1949.
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PROFESSIONAL OVERVIEW AND OBJECTIVES

Emphasis in the Hajek lab is on pathogens and symbionts of invertebrates, predominantly focusing on interactions between microbes and their arthropod hosts. My interests are broad, ranging from basic biologies of pathogens and symbionts and epizootiology to systematics, population genetics, and immune responses. I have worked extensively with the fungal pathogen, *Entomophaga maimaiga*, first seen in North America in 1989 and which has been providing natural control of gypsy moth, a major invasive pest of northeastern North American forests for over 100 years. While this Japanese pathogen does not always provide complete control everywhere, it has been maintaining gypsy moth populations in central New York at low densities since it was first reported in North America. In other areas, including some in Pennsylvania (quite near to central New York) gypsy moth outbreaks have continued to occur but with lower levels of defoliation. Our studies have focussed on spatial and temporal variability in activity of *E. maimaiga*, host specificity population genetics of this fungus, spore dormancy, and persistence of *E. maimaiga* azygospores in the field and exploring mycoparasitism. Our latest studies include ecological studies of community interactions of pathogens and parasitoids. Our studies with invasive Asian longhorned beetles have been directed toward use of an entomopathogenic fungus for control of this species which was introduced from China. We have developed a novel management approach that provides a means for applying insect pathogenic fungi that remain viable for several months, something previously unheard of. Beetles exposed to the entomopathogenic fungi can vector fungal spores to infect other beetles and they lay fewer eggs before dying. A newer project in the laboratory involves studies of fungal symbionts and a parasitic nematode of the invasive woodwasp *Sirex noctilio*, first collected from North America in New York State in 2004. Interactions between this new invasive and the poorly known native *Sirex* species and interchanges of symbionts and parasites

among these species is a main focus of present studies. Additional studies in the lab have included the changes in behavior of fungal-infected insects, the effect of host density on susceptibility of gypsy moth caterpillars to virus, and dispersal of gypsy moth pathogens, to name a few. Throughout all of these projects, we strive to learn new information about insect pathogens and symbionts and their relations to hosts that also answers basic and conceptual questions about the ecology and evolution of infection and disease.

My position at Cornell is 40% teaching. I have developed numerous courses since my professorial position began in 1994, including courses on invertebrate pathology (4000 level), biological control (both 4000 and 2000 levels), and journal clubs on biological control and ecology and evolution of infectious disease. During 2012, I taught a new upper-level undergraduate course **Microbe-Invertebrate Associations: Diversity, Ecology and Evolution** (4000 level) that covers pathogens, symbionts and microbes vectored by invertebrates; in 2014, I adapted this course to the 3000 level and in 2016 the name has changed to **Bugs in Bugs**. I also co-teach a course titled **Invasions: Trading Species in a Shrinking World** (2015 we taught it for the 7th time); this course satisfies the biology requirement for undergraduate students in the College of Agriculture and Life Sciences that are not majoring in biology. My co-teacher Dr. Jan Nyrop and I developed this course for non-majors as both of us have worked extensively with invasive arthropods although this course includes invasive microbes, plants and animals.