

## *2016 Curriculum Vitae*



**NAME:** Ann E. Hajek  
**DEPARTMENT/UNIT:** Entomology  
**TITLE:** Professor  
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## **BACKGROUND**

### **EDUCATION**

<b><u>Year</u></b>	<b><u>Degree</u></b>	<b><u>Institution</u></b>
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**

<b>Full Professor</b>	<b>April 1, 2005</b>
<b>Associate Professor:</b>	<b>July 1, 2000</b>
<b>Assistant Professor:</b>	<b>Sept. 1, 1994</b>

### **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**

### **AREAS OF EXPERTISE**

**Ecology of infectious disease, invertebrate  
pathology, biological control, insect ecology**

## PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Experience</u>
5/90-8/94	BOYCE THOMPSON INSTITUTE, Ithaca, NY <u>Senior Research Associate &amp; Research Associate</u>
1/85-1/90	USDA, ARS, PLANT PROTECTION RESEARCH, Boyce Thompson Inst. <u>Research Entomologist &amp; 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

## 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

<b>2015</b>	<b>L. O. Howard Distinguished Achievement Award, Eastern Branch Entomological Society of America.</b>
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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, 20<sup>th</sup> 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 & 2016**

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**

2016-2017	Litwin Foundation. Asian longhorned beetles. (\$150,000)
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## ACADEMIC RESPONSIBILITIES

### CURRENT ADMINISTRATIVE RESPONSIBILITIES IN ENTOMOLOGY

#### Chair and Quarantine Officer, Sarkaria Arthropod Research Laboratory

#### Supervisory responsibilities

- **External academic contractor**  
James Reilly                      2012-2013
- **Current Research Associates**  
Louela Castrillo                7/03-present
- **Past Research Associates**  
Tarryn Goble                      1/16-6/16  
Todd Ugine                        9/2009-5/2012

- **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
- **Other 2014-15 Research Professionals Supervised**  
Technician I             Chad Grevelding  
Technician II            Jake Henry  
Technician II            Sana Gardescu
- **Cornell Undergraduates Hired to Work With Our Research Group (2014-16)**  
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.**  
**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**

**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 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

- **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

- **2015 Undergraduate Advisees**

Kyle DeMarr (Entomology)

Rachel Norris (Entomology)

- **2015 Teaching Assistants**

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:**

**(begun May 2013)**

- **Total Completed since 2006**

<b>Joanna Joy Fisher, Ph.D.</b>	<b>Entomology</b>	<b>May 2016 (begun 2010)</b>
<b>Elizabeth Erin Morris, Ph.D.</b>	<b>Entomology</b>	<b>Jan. 2014 (begun 8/09)</b>
<b>Gaylord Desurmont, Ph.D.</b>	<b>Entomology</b>	<b>May 2009</b>
<b>Marcos de Faria, Ph.D. (co-chair)</b>	<b>Entomology</b>	<b>May 2009</b>
<b>Calum Russell, Ph.D.</b>	<b>Entomology</b>	<b>Incomplete (07-08)</b>
<b>James Reilly, Ph.D.</b>	<b>Entomology</b>	<b>January 2009</b>
<b>Ryan Shanley, M.S.</b>	<b>Entomology</b>	<b>August 2007</b>

## **GRADUATE MINORS**

- **Total Completed since 2006**

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.).

- **Visiting Scientists since 2008**

2008-2009	Alice Churchill, Visiting Scientist
2008	Fan Peng, Visiting Scientist, Anhui Agricultural University, Hefei, Anhui, China

## **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**

- 2014-2016 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  
09-14 University Appeals Panel  
09-12 Committee on Academic Programs and Policies  
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:**

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 since 2006 (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 be used repeatedly for presentations, the actual talks presented differed if listed under different indentations.]

- 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. 5<sup>th</sup> 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. 3<sup>rd</sup> 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. 3<sup>rd</sup> 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 Ugin 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. Ugine). 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**).

## 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 since 2006** (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).

231. 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. CABI, Wallingford, UK (chapter accepted in 2014; book delayed due to other chapters not being complete).
230. Hodge, K., Hajek A.E. Entomophthoralean pathogen infecting a millipede. J. Invertebr. Pathol.
229. Fisher, J.J., Hajek, A.E. Synergism between *Metarhizium brunneum* and imidacloprid against Asian longhorned beetles (in prep.).

230. Hajek, A.E., Haynes, K. Long term *E. maimaiga* sampling (in prep.).
230. Hajek, A.E., Tobin, P.C., Kroll, S. Fungal associations of *Sirex noctilio* and *nigricornis* (in prep.).
229. Henry, J., Hajek, A.E., Meeker, , Caetano, I.A.L. *Sirex nigricornis* versus *Sirex noctilio* (in prep.).
228. Caetano, I.A.L., Hajek, A.E. Environmental and biological factors influencing mating behavior and sexual receptivity of *Sirex noctilio* (Hymenoptera: Siricidae). Ann. Entomol. Soc. Amer. (in prep.).
227. 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.).
226. Hajek, A.E., Gryganskyi, A., Bittner, T., Liebherr, J.K., Liebherr, J.H., Moulton, J.K., Jensen, A.B., Humber, R.A. A new approach to generic placement for entomophthoralean species only known from resting spores. J. Invertebr. Pathol. (in prep.).
225. Blackburn, L., Hajek, A. Gypsy Moth Larval Necropsy Guide. USDA Forest Service FHTET (in prep.).
224. 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 (in prep.).
223. 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. (in prep.).
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., Gardescu, S., Delalibera Jr., I. *Classical Biological Control of Insects and Mites: A Worldwide Catalogue of Pathogen and Nematode Introductions*. USDA Forest Service. FHTET (in press.). [Catalogue]
220. Williams, D.W., Hajek, A.E. Biological control of *Sirex noctilio* (Hymenoptera: Siricidae) in the northeastern United States using an exotic parasitic nematode. Biol. Contr. (submitted, May 2016).
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. Tylenchid entomoparasites isolated from *Spondylis buprestoides* (L.) and *Asemum striatum* (L). Nematology (online).
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. (in press).
216. Bittner, T., Hajek, A.E., Liebherr, J.K. 2016. Associations among *Serropalpus substriatus* (Coleoptera: Melandryidae) and *Sirex* (Hymenoptera: Siricidae) communities. Grt. Lks. Entomol. (in press).
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, Academic Press. **[invited review]** (accepted).
213. Hajek, A.E., van Frankenhuyzen, K. 2016. Microbial control of forest insects. In: (L. Lacey, ed.), Microbial Agents for Control of Insect Pests: from theory to practice, Academic Press. **[invited review]** (accepted).
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. available on CJO2016.  
[doi:10.4039/tce.2016.10](https://doi.org/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; Erebidiae) in Europe. J. Appl. Entomol. (online). 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* (in press). [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., Cs6ka, 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 applied in hydromulch: evaluating *Metarhizium brunneum* F52 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.] (actually published in 2014)
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.
186. Kroll, S.A., Hajek, A.E., Morris, E.E., Long, S.J. 2013. Parasitism of *Sirex noctilio* by non-sterilizing *Deladenus siricidicola* in northeastern North America. *Biol. Control* 67: 203-211.
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.
184. Ugine, T.A., Jenkins, N., Gardescu, S., Hajek, A.E. 2013. Conidial acquisition and survivorship of adult Asian longhorned beetles exposed to flat versus shaggy agar fungal bands. *J. Invertebr. Pathol.* 113: 247-250.
183. Liebhold, A.M., Plymale, R.C., Elkinton, J.S., Hajek, A.E. 2013. Emergent fungal entomopathogen does not alter density dependence in a viral competitor. *Ecology* 94: 1217-1222.
182. Hajek, A.E. 2013. *Insect Pathology, Second Edition.* (book review) *Quarterly Review of Biology* 88: 147-148.
181. Morris, E.E., Kepler R.M., Long, S.J., Williams, D.W., Hajek, A.E. 2013. Phylogenetic analysis of *Deladenus* nematodes parasitizing northeastern North American *Sirex* species. *J. Invertebr. Pathol.* 113: 177-183.
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.
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**Published abstracts of papers presented at professional meetings** [see note at top of Publications regarding order of authors]

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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 biology 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 7<sup>th</sup> 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.