

ANURAG AGRAWAL

James A. Perkins Professor of Environmental Studies
Department of Ecology and Evolutionary Biology
215 Tower Road, E425 Corson Hall, Ithaca, NY 14853
Phone 607-254-4255, aa337@cornell.edu
<http://www.herbivory.com>

EDUCATION

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
1999	Ph.D., Population Biology	University of California at Davis Advisor: Dr. Richard Karban
1995	Tropical Biology 95-3	Organization for Tropical Studies
1994	M.A., Conservation Biology	University of Pennsylvania
1994	B.A., Biology <i>Magna Cum Laude</i>	University of Pennsylvania

PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Experience</u>
2017-	James Perkins Professor of Environmental Studies, Cornell University
2010-	Cornell University, Professor of Ecology and Evolutionary Biology, with joint appointment in the Department of Entomology, Cornell University
2005-2010	Cornell University, Associate Professor of Ecology and Evolutionary Biology, with joint appointment in the Department of Entomology, Cornell University
2008-2010	Cornell University, Faculty Director for Environmental Programs, Atkinson Center for a Sustainable Future
2004-2005	Cornell University, Assistant Professor of Ecology and Evolutionary Biology, with joint appointment in the Department of Entomology, Cornell University
2000-2004	University of Toronto, Assistant Professor of Botany
1999-2000	University of Amsterdam, Postdoctoral Fellow in the Section of Population Biology, Advisor: Dr. Maurice W. Sabelis
1994-1999	University of California at Davis, Teaching and research assistanceships
1993-1994	University of Pennsylvania, Research assistant: Dr. Daniel Janzen

SCHOLARLY SUMMARY: >200 peer-reviewed publications and editor of 15 journal special issues and books. >21 papers with undergraduate student coauthors and H-index = 76, cited ≈25,000 times (based on Google Scholar). Top 25 cited publications all >250 citations. Fledged 15 graduate students and postdocs (8 of which are in permanent faculty positions). ≈5 invited talks per year over the past 10 years.

AREAS OF EXPERTISE

Environmental biology, Community and evolutionary ecology of interspecific interactions, Genotypic and environmental influences on insect communities, Phenotypic plasticity, Induced plant defense against herbivores, Ecological genetics, Evolutionary biology, Phylogenetics and comparative biology, Chemical ecology

HONORS AND AWARDS

Silverstein-Simeone Award, International Society of Chemical Ecology (2018)
National Outdoor Book Award, Nature and Environment Category (2017)
James Perkins Professorship in Environmental Studies, Cornell University (2017)
Fellow of Ecological Society of America (2017)
Robert H. MacArthur Award, Ecological Society of America (2016)
Highly Commended (Harper Prize competition) for Martin et al. 2015, British Ecological Society
Founders' Memorial Award, Entomological Society of America (2013)
Best Paper Award, Royal Entomological Society (for Rafter et al. 2012)
Fellow, American Association for the Advancement of Science (2012)
David Starr Jordan Prize (2009)
George Mercer Award, Ecological Society of America (2006)
NSF Early Career Award (2005)
Premier's Research Excellence Award (Ontario, 2000)
Young Investigator Award, American Society of Naturalists (1999)
Merton Love Award, Outstanding doctoral thesis in ecology and evolution (UC Davis 1999)
Buell Award, Ecological Society of America (Honorable mention, 1998)
Phi Beta Kappa (elected 1994)
ARCS Scholar (1997-1999)

Honorary lectures

Wege Environmental Lecture, Meijer Gardens (planned, Sept. 2019)
Silverstein-Simeone Lecture, International Society of Chemical Ecology (2018)
Robert MacArthur Award Lecture, ESA, Portland (2017)
Alexander Entomology Lecture, University of Massachusetts (2015)
Douglas Distinguished Lecturer, Rocky Mountain Biological Laboratory (2014)
University of Montana, Distinguished speaker (2014)
G. Evelyn Hutchinson Distinguished Speaker, Yale University (2014)
Chris Reed Memorial Lecture, Dartmouth College (2013)

Jill Adams Memorial Lecture, University of Washington (2011)
Walton Memorial Lecture, University of Virginia (2009)
Dennis Chitty Lecture, University of British Columbia (2009)
Eminent Ecologist Lectures, Kellogg Biological Station (2006)
George Williams Lecture, Stony Brook University (2006)

SABBATICALS

Spring 2018, Oaxaca, Mexico
Fall 2017, University of Montana
Spring 2011, University of Arizona
Fall 2007, Michigan State University

LAB MEMBERS

Postdoctoral Associates

Dr. Peter Van Zandt, 2001-2003, Assistant Prof. at Birmingham Southern College
Dr. Kailen Mooney (Jan. 2005 - July 2007), Associate Prof. at UC Irvine
Dr. John D. Parker (Jan. 2006 - Aug. 2007), Senior Scientist at the Smithsonian ERC
Dr. Sergio Rassman (Feb. 2007 - Dec. 2010), Associate Professor at Neuchatel University
Dr. Gaylord Desurmont (August 2009 - Dec. 2010), Research Entomologist, EBCL
Dr. Jared Ali (Sept 2011 – Mar. 2013), Assistant Professor, Pennsylvania State University
Dr. Georg Petschenka (Oct 2012 - March 2015), Postdoc at University of Giessen
Dr. Karin Gustafsson (Jan. 2014 – Jan. 2015), Associate Professor, Örebro University
Dr. Tobias Zuest (April 2012-2015), Postdoc at Bern University
Dr. Patricia Jones, 2014-2017, Assistant Prof. at Bowdoin College
Dr. Tyler Coverdale, Fall 2018-

Graduate students

Lina Arcila-Hernandez, E&EB, Ph.D., 2019
Katherine Holmes, E&EB, Ph.D., 2020
Jacob Elias, E&EB, Ph.D. (on leave)

Nile Kurashige (2001-2004), MSc Botany, University of Toronto. Phenotypic plasticity to light competition and herbivory in *Chenopodium album*. Plant Technician, University of Washington.

Marc Johnson (2002-2006), PhD Botany, University of Toronto. Community genetics of Evening Primrose and its insects: testing how plant genes and insect communities interact. Associate Professor, University of Toronto.

Marc Lajeunesse (2003-2008), PhD EEB, Cornell University. Host range evolution in parasites. Associate Professor, University of South Florida.

Michael Stastny, (2004-2010), PhD EEB, Cornell University. Ecological consequences of relatedness: the role of Competition and herbivory in the community structure of co-occurring Asteraceae. Staff Scientist, Canadian Forest Service (Fredericton, NB, Canada).

Susan C. Cook-Patton, (2006-2012), PhD EEB, Cornell University. Consequences of changing biodiversity for plants, insects, and ecosystems. Forest Restoration Scientist, The Nature Conservancy

Alexis C. Erwin, (2006-2013), PhD EEB, Cornell University.
Patterns and ecological consequences of aboveground and belowground herbivory
Currently Energy and Environmental Sustainability Advisor, U.S. Agency for International Development

Marjorie Weber, (2009-2014), PhD EEB, Cornell University.
The evolution of mutualistic defensive traits in plants
Currently Assistant Professor, Michigan State University

Research Professionals

Amy Hastings, MSc, Research Support Specialists (2008-)
Ronald White, Technician II (2017-)

Katalin Boroczky, Research Associate (2015-2017)
Eamonn Patrick, Technician II (2014-2015)
Andrew Tuccillo, Technician (2005-2006)
Andrew McDowell, Technician (2004-2005)
Lisa Plane, Technician (2001-2003)
Marc Johnson, Technician (2000-2001)

EXTERNAL FUNDING

- 2017 NSF IOS EDGE-1645256, Development of genetic and genomic resources for milkweed, *Asclepias syriaca* and *Asclepias curassavica*. Co-PI with 3 others (\$1,020,000)
- 2015 NSF DEB-1513839, Genetic transformation of common milkweed, *Asclepias syriaca*: Creating a model plant for ecological investigations (\$307,000)
- 2013 John Templeton Foundation, Convergence and the origins of biodiversity. (\$1,0355,000 split between Cornell (lead institution), University of Arizona, and University of Hamburg)
- 2011 NSF DEB-1118783, Tests of classic plant defense theory (\$439,918)
- 2009 NSF DEB-1026110, Evolution of plant defense: A multigenerational selection experiment in the field (\$264,000)
- 2005 NSF DEB-0822462, Milkweed-herbivore interactions: Advancing community ecology and student community outreach (\$566,000)
- 2005 NSF DEB-0544929, Workshop: Frontiers in Ecology (\$46,000)
- 2003 Joint award to host an international symposium on plant-insect interactions (\$21,000 from NSF DEB-0330166, Connaught Committee University of Toronto, and Botany Department at the University of Toronto).
- 2002 NSERC equipment grant for C-N analyzer (\$55,000) (with several others)
- 2000-2003 Canadian Foundation for Innovation grant (\$478,000)
(with Jennifer Thaler and David Guttman)
- 2000-2004 NSERC Discovery grant (\$150,000)
- 2000-2001 Premier's Research Excellence Award, Ontario (\$150,000)
- 2000-2002 Connaught research grants, University of Toronto (\$40,000)
- 1997 NSF, Dissertation Improvement Grant (\$10,000)
- 1996-1997 Organization for Tropical Studies Fellowship (\$2,500)
- 1996 Phi Beta Kappa Graduate Research Grant (\$3,000)
- 1995-1996 Jastro Shields Research Grant from UC Davis (\$2,800)
- 1995-1997 Center for Population Biology Research Grant from UC Davis (\$3,400)
- 1994 Institute Environmental Studies, University of Pennsylvania (\$2,000)
- 1993 NSF - REU at Mountain Lake Biological Station (\$2,500)
- 1989 NIH Undergraduate Research scholarship (\$1,500)

TEACHING AND ADVISING

BIOEE 1610 Ecology and the Environment (Fall 2013, Fall 2015, Spring 2016, Fall 2018)
BIOEE 3611 Field Ecology (Fall 2006, 2010, 2012, 2014, 2016)
BIO G 2990 / BIO G 4990 Independent Undergraduate Research in Biology
BIOEE 3690 Chemical Ecology (every spring since 2007)
BIOEE 4580 Community Ecology (Spring 2006, 2008, 2010)
BIOEE 7590 Special Topics in Evolution and Ecology: Plant-Insect Interactions Seminar (every semester since Fall 2004)
BIOEE 7590 Special Topics in Evolution and Ecology: Professional Development in E&EB (Fall 2006, Fall 2011, Spring 2014, Spring 2017)
BIOEE 7600 Special Topics in Evolution and Ecology: Phylogenetics in Ecology (Fall 2005, spring 2009)
BIOEE 760 Special Topics in Evolution and Ecology: Biodiversity (Spring 2010)
BIOEE 7600 Special Topics in Evolution and Ecology: Eco-Evo Feedbacks (Fall 2011)

Fashionable Concepts in Ecology, University of Toronto (BOT1700, Spring 2001)
Evolutionary Ecology, University of Toronto (BOT1700, Spring 2003)
Advanced Ecology, University of Toronto (JZB1014H, Spring 2004)
Ecology and Evolution of Interspecific Mutualisms, Univ. of California at Davis, Fall 1998
Community Ecology, University of Toronto BIO321 (Fall 2001, 2002, 2003)
Introductory Biology, University of Toronto (Winter 2002, 2003, 2004) for 2200 students
Plant-Animal Interactions, University of Toronto (Winter 2003, 2004)
Biodiversity and Ecology in Indochina, Univ. Toronto (BIO308H1F, 2004, 17 days in Vietnam)

Current undergraduate Students Mentored in Independent Research

Current Undergraduate Advisees

8 students in *Environment and Sustainability* and 6 students in *Biology*

Other Relevant Teaching and Advising

Participating mentor, Cornell teaching Partnership Program (2016-)
Participating instructor, Evolutionary Biology Workshop (June 23-30, 2012, Switzerland)
Participating instructor in the Organization for Tropical Studies Field Course in Plant-Animal Interactions in the Tropics (January 2010, La Selva Biological Station, Costa Rica).
Participating instructor in an Insect Chemical Ecology course (ICE10) for 40 graduate students (June 2010, Pennsylvania State University).

Undergraduate project students

(*indicates students were co-authors on published papers – 19)

(†indicates students completed a senior thesis at Cornell - 7)

Margaret Sherriffs* (University of California – Davis, NSF Young Scholars Program, 1996)
Chris Kobayashi* (University of California – Davis, NSF Young Scholars Program, 1997)
Corrine Klein* (University of California – Davis, NSF Young Scholars Program, 1998)
Karin Rotem* (University of Toronto, NSERC Fellowship, 2001)
Natalie Griffiths (University of Toronto, Northrop-Frye Scholar, 2002)
Rowan Barrett* (University of Guelph, NSERC Fellowship, 2002)
William Godsoe* (University of Guelph, NSERC Fellowship, 2003)
Rosanna McGuire* (University of Toronto, NSERC Fellowship, 2004)
Patricia L. Jones* (Cornell University, NSF-REU Fellowship, 2005)
R. Alex Smith*† (Cornell University Presidential Scholar, 2006)
Kelly Goodsell (Cornell University, NSF-REU Fellowship, 2006)
Jessica Goldstein* (Cornell University, NSF-REU Fellowship, 2007)
Margaret Daisy Johnson*† (Cornell University, NSF-REU Fellowship, 2008, 2010)
Ellen Woods*† (Cornell University, NSF-REU Fellowship, 2008, 2009)
Trey Ramsey* (Cornell University, NSF-REU Fellowship, 2009)
Emily Kearney*† (Cornell University, NSF-REU Fellowship, 2010, 2011)
Jessica Tingle*† (Cornell University, Howard Hughes Fellowship, 2010, 2011)
Andrea Alfano (Cornell University, NSF-REU Fellowship, 2012)
Eamonn Patrick*† (Cornell University, NSF-REU Fellowship, 2012, 2013)
Daniel Fines* (Cornell University, NSF-REU Fellowship, 2014)
Sophie Mao*† (Cornell University, NSF-REU Fellowship, 2014)
Aliya Ali* (Cornell University, independent study, 2015, 2016, 2017)
Isabella Sobalvarro (Cornell University, 2015-summer 2016)
Zach Stoessel (Cornell University, 2016-summer 2017)
Jackson Seminara (Cornell University, summer 2017)
Gunnar Glover (Cornell University, summer 2017)

Graduate student special committee member

Geoffrey Broadhead, Ph.D. Neurobiology and Behavior 2018
Collin Edwards, E&EB, Ph.D., 2018
Aubrie James, E&EB, Ph.D., 2019
Jacob Berv, E&EB, Ph.D., 2019
Ellie Goud, E&EB, Ph.D., 2019
Zoe Getman-Pickering, Entomology, Ph.D., 2019
Katherine Eisen, E&EB, Ph.D., 2019
Gregor Siegmund, E&EB, Ph.D., 2019
Lauren Brzozowski, Horticulture, Ph.D., 2019
Alexander Chautá, E&EB, Ph.D., 2020
Jennifer Uehling, E&EB, Ph.D., 2021
Arielle Johnson, Plant Biology, Ph.D., 2022

(past)

David Clark (2000-2002) MSc, Botany, University of Toronto
Danush Viswanathan (2000-2005) PhD, Botany, University of Toronto
Maria Clara Castellanos (2001-2003) PhD, Zoology, University of Toronto
Eric Dunbar (2001-2003) MSc, Botany, University of Toronto
Michelle Greenshields (2001-2003) MSc, Forestry, University of Toronto
Pamela O (2001-2003) MSc, Botany, University of Toronto at Missisauga
Chad Brassil (2001-2004) PhD, Zoology, University of Toronto
Celine Muis (2001-2004) MSc, Botany, University of Toronto
Charles J. Donlan, III, (2008) PhD, Ecology and Evolutionary Biology, Cornell
Andrea Davelos (2008) PhD, Natural Resources, Cornell
Jesse L. Bellemare (2009) PhD, E&EB, Cornell
Gaylord Desurmont (2009) PhD, Entomology, Cornell
Jesse L. Bellemare (2009) PhD, E&EB, Cornell
Daniel L. Rabosky (2009) PhD, E&EB, Cornell
Megan O'Rourke (2009) PhD, E&EB, Cornell
Amy Parachnowitsch (2010) E&EB, Cornell
Sophie Cardinal (2010) Entomology, Cornell
Charlotte Jander (2011) NB&B, Cornell
Scott McArt (2011) Entomology, Ph.D., Cornell
Sarah J. Reilly (2012), E&EB, Ph.D., Cornell
Joe Simonis (2012) E&EB, Ph.D., Cornell
Monica Kersch-Becker (2014), E&EB, Ph.D., Cornell
Annise Dobson (2014), DNR, MSc, Cornell
Jake Blessing, DNR, MSc., 2015
Laura J. Martin, DNR, Ph.D., 2015
Ben Freeman, E&EB, Ph.D., 2016
Annise Dobson, DNR, Ph.D., 2018
Renee Petipas, E&EB, Ph.D., 2018
Kristen Brochu, Ph.D. Entomology 2018

Sabbatical visitors

Laurel Fox (University of California, Santa Cruz), Fall 2006
Robin Bingham (Western State College of Colorado), 2008-2009
Luis Santamaría (Mediterranean Institute for Advanced Studies), 2012
Chad Brasil (University of Nebraska), Spring 2015
Susanne Dobler (University of Hamburg), Spring 2015

PROFESSIONAL SERVICE

Editorial boards

PLoS Biology, Editorial board (2006-)
Quarterly Review of Biology, Associate Editor (2007-)
PeerJ, Academic Editor (2012-2015)
American Naturalist, Associate Editor (2010-2013)
Ecological Entomology, Associate Editor (2007-2010)
Ecological Entomology, Editorial board (2004-2007)
Functional Ecology, Editorial board (2005)
Ecology, Special Features editor (2001-2004)
Ecology Letters, Editorial board (2001-2003)
Trends in Ecology and Evolution, Commentary panel (2000-2002)

Society membership

American Society of Naturalists (2010-)
 Executive committee (2015-2017)
 Vice president (2016)

Ecological Society of America (1994-)
 Mercer Award Committee (2013-2015)
 MacArthur Award Committee (2017-)

Society for the Study of Evolution (1996-)
American Association for the Advancement of Science (2005-)
Sigma Xi (1996-)
International Society for Chemical Ecology (2008-)
Entomological Society of America (1996, 2012-)

Peer-reviewing

618 Ad hoc manuscripts, grants and external promotion files reviewed since 1996 (about 30 papers per year, not including those handled as an editor): American Journal of Botany (2), American Midland Naturalist (1), American Naturalist (16), Animal Migration (1), Applications in Plant Sciences (1), Annals of Botany (2), Annals of the Entomological Society of America (1), Arthropod-Plant Interactions (2), Australian Journal of Agricultural Research (1), Basic and Applied Ecology (1), Behavioral Ecology (3), Biological Conservation (1), Biological Reviews (1), Biology Letters (7), BioScience (3), Biotropica (5), Blackwell book (1), BMC Evolutionary Biology (1), Bulletin of Entomological Research (5), Canadian Journal of Botany (3), Canadian Journal of Fisheries and Aquatic Sciences (1), Canadian Journal of Forest Research (1), Chemoecology (4), Cornell Hatch Proposal (5), Current Biology (2), Czech Republic Academy of Sciences (1), Dutch SF (2), Ecography (1), Ecological Applications (1), Ecological Entomology (16), Ecological Monographs (2), Ecology (23), Ecology Letters (45), Écoscience (6), Ecosphere (1), Ecosystems (1), eLife (1), Entomologia Experimentalis et Applicata (5), Environmental Entomology (3), Evolution (22), Environmental Epigenetics (1), Evolutionary Ecology (4), Evolutionary Ecology Research (6), Experimental and Applied Acarology (5), Frontiers in Ecology and Environment (1), Functional Ecology (8), Global Change Biology (2), Global Ecology and Biogeography (1), Gordon Research Conference proposal (1), Graduate Women in Science grants (1), Heredity (2), Israel Science Foundation (1), Journal of Animal Ecology (5), Journal of Applied Ecology (5), Journal of Chemical Ecology (25), Journal of Ecology (22), Journal of Evolutionary Biology (5), Journal of Experimental Botany (1), Journal of Insect Science (1), Journal of Natural History (1), Journal of Tropical Ecology (1), Journal of Tropical Forest Science (1), MacArthur Fellows Program (1), Maryland Agricultural Experiment Station Competitive Grants (1), Molecular Ecology (2), National Geographic Society Grants (2), Nature (4), Nature communications (1), Nature Ecology and Evolution (2), Nature Plants (2), NERC-England (5), New Phytologist (27), NSERC (5), NSF (48), Oecologia (31), Oikos (39), Philosophical Transactions of the Royal Society of London, special issue proposal (1), Physiological Entomology (1), Phytochemistry (1), Phytochemistry Reviews (1), Plant Biology (1), Plant Physiology (8), PloS Biology (5), PLoS One (5), PNAS (26), Princeton Monograph proposal (3), Princeton monographs (2), Proceedings of the Royal Society of London - B (13), Promotion to tenured faculty or full professor (33), Quarterly Review of Biology (3), Royal Society Fellowships (1), Science (14), Science Advances (1), Sinauer text book (1), Swiss ETH (3), Swiss National Science Foundation (3), Trends in Ecology & Evolution (4), Trends in Plant Science (2), Turku University thesis evaluation (1), UMass Hatch proposals (2), University of Chicago Book proposals (2), USDA (9), US-Israel Binational Science Foundation (1), Wallenberg Foundation Grant (2), Web Ecology (1), Western North American Naturalist (1).

COMMITTEES

University

Cornell Presidential Postdoctoral Fellows Selection Committee (2018-)
University Appeals Panel (2014-)
Natural Areas Committee, Cornell Plantations (2006-)
Faculty Advisory Board, Atkinson Center for a Sustainable Future (2008-2018)
Lab of Ornithology, Administrative Board (2017)
Advisory board, University Courses (2014-2017)
Life Sciences Advisory Council (2013-2015)
Presidential Life Sciences (PLSF) committee (2012-2013)
Environmental Sciences Planning Committee (2010)
CALs Dean Search Committee, 2009-2010
Faculty Advisory Committee, Cornell Center for a Sustainable Future (2008-2010)
Joker's Hill Scientific Reserve, Scientific Oversight Committee, Univ. of Toronto (2001-2004)
Joker's Hill Scientific Reserve, Management Board, Univ. of Toronto (2002-2004)

College

NB&B Faculty search committee, (2018-2019)
CALs rebranding committee (2016-2017)
CALs Structure Task Force (2016)
Agricultural Experiment Station, Culture of Sustainability Committee (2008-2010)
Ad hoc tenure committee (2008, 2013)
Ad hoc tenure committee chair (2006)
CALs Environmental Sustainability and Development Task Force (2007-2008)
Plant Sciences Task Force (2006-2007)
Center for the Environment Faculty Advisory Committee (2005-2008)
CALs Greenhouse Faculty Advisory Committee (2005-2006)
Atmospheric Science search committee, CALs/CCSF, 2008-2009
Terrestrial Biogeochemistry search committee, CALs/CCSF, 2008-2009

Department

Chair, Faculty 3rd year review (2018)
Mentoring committee chair, Maren Vitousek (2016-)
Mentoring committee, Denis Willtett (2018-)
Graduate Admissions Committee, Field of E&EB, (2005-2007, 2011, 2013, 2018)
Mentoring committee chair, Katja Poveda (Entomology) (2014-2017)
Evolution Search Committee, co-chair (2016-2017)
Strategic Planning, Chair (2015-2016)
Awards Chair (2015-2017)
Awards committee (Entomology) (2012-2013)
Seminar Committee Chair (2008-2010)
Chair, Faculty 3rd year review (2008)
Whittaker and Book Award Committee (2006)
Cole Award Committee (2005)
Graduate Studies Committee, University of Toronto Botany Department (2002-2004)

Microbial interactions search committee, University of Toronto Botany Department (2003)
Plant Ecologist search committee, University of Toronto Botany Department (2001-2002)
EcoLunch seminar series coordinator, University of Toronto Botany Department (2000-2001)
Botany seminar series coordinator, University of Toronto Botany Department (2000-2004)
EvoLunch seminar series, University of Toronto Botany Department (2001-2004)
Growth Facilities Committee, University of Toronto Botany Department (2003-2004)

CONFERENCES/WORKSHOPS

Workshops and other service

Cornell Institute for Biology Teachers, Monarch butterfly workshop, October, 2018
Monarch Butterfly Expert Elicitation Meeting, US Fish and Wildlife Service, Minneapolis, MN,
June 12-15, 2017
How to get your NSF grant funded, Cornell University Panel, Spring 2017
Cayuga Nature Center, Summer Solstice Butterfly presentation, lecture and field walk, 2014,
2015
Cornell Institute for Biology Teachers, Summer workshop, July 2010, July 2011, 2013, two hour
field trip with 25 secondary school instructors
How to Succeed in Graduate School, BEB Workshop, December 2009
Cornell Club visit and presentations, Washington DC, April 2009
CALS Alumni Presentation, Making a World of Difference, April 2009
Cornell Alumni Presentation, Boston, June 2008
Cornell Institute for Biology Teachers, Return to Campus event, 5 May 2007, two hour field
lecture to 40 secondary school instructors
Cornell Institute for Biology Teachers, Summer workshop, July 2007, two hours field trip with
25 secondary school instructors
University & Industry Consortium, introductory talk on integrative biology at Cornell (April 17,
2007)
Workshop on Journal Citation Impact Factors, Mann Library, April 7, 2006
Participant in National Center for Ecological Analysis and Synthesis working group: Biotic
Interactions and Invasions (2004-2005)
Participant in Ecological Society of America Workshop on How to succeed in ecology: Advice
from current and aspiring eminent ecologists (August 2004)

Meetings and symposia organized

Symposium: Frontiers in the study of induced plant defense against pathogens and herbivores,
joint meeting of the Phytopathological and Entomological Society of America. (Las
Vegas, November 1998)
Symposium: Multi-Trophic Interactions Brainstorm Symposium, an international conference on
emerging areas of research (Toronto, 2004). Funded by Connaught fund, US NSF, and
University of Toronto Botany.
NSF Workshop: Frontiers in Ecology (Washington DC, Jan 2006): chaired 15 person workshop
to assign priority areas for NSF base-budget funding in ecology.

Workshop: Cornell Center for the Environment, Forum on Invasive species (chair and organizer), Cornell University, May 2006.

Pennsylvania State University – Cornell University joint symposium in Chemical Ecology (co-organizer), State College, PA, May 2007.

Symposium: Phylogenetic approaches to the study of plant resistance and insect host range. International Society for the Study of Chemical Ecology. (Pennsylvania State University, August 2008).

Symposium: Evolutionary Ecology of Plant Defense Against Insects: Novel Approaches to Classic Questions, Ecological Society of America (Albuquerque, NM, August 2008).

New Phytologist 7th Annual Workshop, Frontiers in the Chemical Ecology and Coevolution. (Ithaca, NY September 2013).

Symposium: Evolutionary Chemical Ecology, International Society of Chemical Ecology (Urbana, IL, July 2014).

ASN VP Symposium, ASN/SSE: Convergence, Natural History, and the big questions in biology (Austin, TX, 2016).

Symposium: Tibor Jermy's Legacy in Plant-Insect Evolution, International Society of Chemical Ecology (Budapest, Hungary, August 2018).

Oak Springs Foundation – Of Milkweeds & Monarchs - Workshop (planned for June 2019)

INVITED PRESENTATIONS

Planned:

J.N."Ding" Darling National Wildlife Refuge, Sanibel Island, FL
 The Polly Hill Arboretum, West Tisbury, MA
 Ladew Topiary Gardens, Monkton, MD
 Frederik Meijer Gardens, Grand Rapids, MI
 University of Nevada, Reno

2018 Cary Institute for Ecosystem Studies, Millbrook, NY
 Cornell Botanic Gardens, Ithaca, NY
 North American Butterfly Association, Keynote talk
 Silverstein-Simeone Lecture, Int. Soc. Chemical Ecology, Budapest, Hungary
 Interdisciplinary Research Center for Regional Development, Oaxaca
 Oaxaca Lending Library, public lecture
 UNAM, Mexico City, Institute of Ecology
 UNAM, Morelia, Institute of Research in Ecosystems and Sustainability
 5th Annual WWF International Symposium on Monarch Butterfly Research and Conservation, Morelia, Mexico.

2017 Arnold Arboretum, Harvard University (two talks)
 Montana Natural History Center / Missoula Insectarium, Missoula, MT
 Ecological Society of America, Robert H. MacArthur Award lecture
 Houston Museum of Natural Science, Houston, TX
 Royal Ontario Museum, Toronto, Ontario

Cornell University, Chats in the stacks
Lady Bird Johnson Wildflower Center, Austin, TX
California Academy of Sciences, San Francisco, CA
Seattle Town Hall, Seattle, WA
San Antonio Book Festival, San Antonio, TX

- 2016 Integrative Biology, Michigan State University
Department of Natural Resources, Cornell University
Fish & Wildlife Service Webinar, Conservation Series
Science and Suds, Public talk in Cortland, NY
- 2015 University of Massachusetts, Alexander Entomology Lecture
Princeton University, Department of Ecology and Evolutionary Biology
Ecological Society of America, Ignite session: Advances, Frontiers, Applications,
and Challenges within and across Ecological Disciplines: A Celebration of
ESA's Centennial, and a Roadmap for the Next 100 Years
Duke University, Program in Ecology
- 2014 University of Montana, distinguished speaker (2 talks)
Rocky Mountain Biological Laboratory (2 talks)
International Society of Chemical Ecology, Keynote talk
University of Minnesota, Department of Ecology and Evolution
Finger Lakes Native Plant Society
Boyce Thompson Institute for Plant Sciences
Yale University, Department of Ecology & Evolutionary Biology
- 2013 Dartmouth College, Department of Biological Sciences
Founders Memorial Award Lecture, Ent Soc Annual Meeting, Austin, TX
New Phytologist 7th Workshop: Chemical Ecology & Coevolution (Ithaca, NY).
- 2012 University of California, Davis, Department of Entomology
University of Georgia, Department of Plant Biology
University of South Carolina, Department of Biological Sciences
University of Pittsburg, Department of Biological Sciences
- 2011 University of Wisconsin, Madison
University of Washington, Jill Adams Memorial Lecture
University of Colorado, Boulder, Department of Ecology and Evolution
Stockholm-Cornell Bilateral Insect Symposium, Stockholm University
- 2010 David Starr Jordan Award Lecture, Cornell University
Department of Entomology, Cornell University, Geneva Campus
Indiana University, Department of Biological Sciences
Oklahoma State University, Department of Botany

- 2009 Entomological Society of America Symposium: Evolutionary Arms Race of Resistance in Herbivores to Novel Chemistries: Lessons from Native and Agricultural Systems (Indianapolis, IN).
Stony Brook University, Darwin's 150 anniversary of the Origin of Species
University of Michigan
University of British Columbia, Chitty Lecture
Syracuse University, Department of Biology
Mountain Lake Biological Station, Walton Lecturer
Ecological Society of America Symposium: Ecology of Plant Defense Against Insects: Novel Approaches to Classic Questions
- 2008 Stanford University, Department of Biological Sciences
University of California Davis, Ecology Series
University of California Irvine, Department of Ecology and Evolutionary Biology
Texas A&M, Ecology and Evolutionary Biology Program
University of Tennessee, Department of Ecology and Evolution
- 2007 Umeå University, Department of Ecology and Environmental Science (2 talks)
University of Kentucky, Department of Entomology
Northern Arizona University, School of Forestry
Penn State – Cornell Symposium in Chemical Ecology
Michigan State University, Ecology & Evolutionary Biology
Meet the greenhouse staff – Cornell University
Portland State University, Department of Biology
- 2006 Pennsylvania State University, Department of Entomology
Symposium on the ecological consequences of genetic diversity, at the Ecological Society of America annual meeting.
Kellogg Biological Station, Eminent Ecologist (2 talks over weeklong visit)
SUNY Stony Brook, GC Williams Lecture in Evolutionary Biology
Cornell CALS back to the classroom alumni lecture
UMass Amherst, Organismic and Evolutionary Biology Series
University of Rochester, Department of Biology
- 2005 Symposium in Honor of Erkki Haukioja, University of Turku, Finland
Geneva Experiment Station, Cornell University, Department of Entomology
Cornell University, Department of Entomology
NCCR Plant Survival International Conference, Leysin, Switzerland
- 2004 University of Pennsylvania, Biology Alumni Series (2 talks)
Georgia Institute of Technology, School of Biology
12th International Symposium Insect-Plant-Interactions, Berlin. Keynote speaker
Ecological Society of America, Symposium on ecological implications of phenotypic plasticity
Ontario Ecology and Ethology Colloquium, Plenary lecture
Cornell University, Biogeochemistry and biocomplexity series
University of South Carolina, Department of Biological Sciences

Gordon Research Conference: Plant-Herbivore Interactions, closing lecture

- 2003 Smithsonian Tropical Research Institute, BCI, Panama
University of Guelph, Department of Botany
Royal Canadian Institute, Toronto. Sunday Science Lectures
Brodie Club, Toronto. Natural history seminar series
North Dakota State University, Department of Entomology
University of Arizona, Center for Insect Science
Western Michigan State University, Biology Department
- 2002 Cornell University, Department of Ecology and Evolution
University of Pittsburgh, Department of Biology
University of Toronto (EcoLunch series)
Indiana University, Department of Biology
- 2001 University of Minnesota, Center for Community Genetics
Workshop: Plant-animal interactions in complex environments, Section for
Landscape Ecology, SLU (Sweden)
Harvard University, Graduate class on plant-herbivore interactions
University of British Columbia, Centre for Biodiversity
Simon Fraser University, Department of Biology
UNAM, Institute for Ecology (Mexico)
University of Toronto (EcoLunch series)
University of Toronto at Mississauga, Department of Biology
Course in plant-animal interactions, Instituto de Ecología, A.C., Vera Cruz,
Mexico. One week in the field with 2 talks.
- 2000 University of Leiden (Netherlands), Department of Plant Ecology
30 questions for the next century of ecology, Ecological Society of America
Wageningen University (Netherlands), Department of Entomology
- 1999 Workshop: Chemistry of resistance in woody plants - prospects for ecologically
valid generalizations, University of Turku (Finland)
Imperial College at Silwood Park (UK)
Centre for Population Biology University of Amsterdam, Institute for Biodiversity
University of Arkansas, Department of Entomology
Keynote Symposium, Plant-Animal Interactions, XVI Int. Botanical Congress
Young Investigators Symposium, annual meeting of the Amer. Soc. of Naturalists
Merton Love Seminar in Ecology and Evolution, University of California, Davis
Vanderbilt University, Department of Biology (2 talks)
University of Chicago, Department of Ecology and Evolution (2 talks)
Duke University, Department of Botany
University of Illinois at Urbana-Champaign, School of Integrative Biology
- 1998 California Conference on Biological Control (Berkeley, CA)

Symposium on Induced Plant Defense, Joint annual meeting of Phytopathological and Entomological Societies of America
University of California – Santa Cruz, Department of Environmental Studies
North Carolina State University, Department of Zoology
Pennsylvania State University, Department of Biology
University of California – Berkeley, Department of ESPM
University of Toronto, Department of Botany (2 talks)

1996 Symposium on Ant-Plant Interactions at the Ecological Society of America annual meeting

REVIEW PANELS

Atkinson Center for a Sustainable Future, TNC-Collaborative proposals (2018)
Atkinson Center for a Sustainable Future, NatureNet Postdocs (2017)
Atkinson Center for a Sustainable Future, AVF Panel (2015, 2016)
NSF Population and Community Ecology panel II, April 21-23 2010

PUBLICATIONS

Books

Agrawal, A.A. 2017. *Monarchs and Milkweed: A Migrating Butterfly, A Poisonous Plant, and their Remarkable Story of Coevolution*. Princeton University Press. 296pp.

- *winner of the National Outdoor Book Award - Nature and Environment Category 2017*
- *One of Forbes's top 10 biology books of 2017*
- *Award of Excellence in Gardening and Gardens from The Council on Botanical and Horticultural Libraries*
- *Honorable Mention for 2018 PROSE Award in Popular Science & Mathematics, Association of American Publishers*
- *Longlisted for the 2018 AAAS/Subaru Prizes for Excellence in Science Books*

Submitted papers

Agrawal, A.A. and A.P. Hastings. Trade-offs constrain the evolution of an inducible plant defense within but not between species *Proceedings of the Royal Society B*.

Maron, J.L., A.A. Agrawal, and D.W. Schemske. Plant-herbivore coevolution and plant speciation. *Ecology*.

Agrawal, A.A. and A.P. Hastings. Plant defense by latex: new data on the ecological genetics of inducibility in the milkweeds and a general review of mechanisms, evolution, and agriculture. *Journal of Chemical Ecology* (invited).

Tigeros, N. A.A. Agrawal, and J.S. Thaler. Genetic variation in parental effects contribute to the evolutionary potential of antipredator plasticity. *Proceedings of the Royal Society B*.

Goud, E.M., J.P. Sparks, M. Fishbein, and A.A. Agrawal. Integrated metabolic strategy: a mechanistic framework for predicting the evolution of carbon gain and water loss tradeoffs within plant clades. *Journal of Ecology*.

Karageorgi, M, S. Groen, F. Sumbul, J.N. Pelaez, K.I. Verster, J.M. Aguilar, A.P. Hastings, S.L. Bernstein, T. Matsunaga, M. Astourian, F. Rico, S. Dobler, A.A. Agrawal, N.K. Whiteman. The making of the monarch: A constrained mutational path to toxin resistance. *Nature* (revision invited).

In Press

Jones, P.A. and A.A. Agrawal. Beyond preference and performance: host plant selection by monarch butterflies, *Danaus plexippus*. *Oikos*.

Brzozowski, L.J., M. Mazourek, and A.A. Agrawal. Divergence of resistance to insect herbivores in independent domestications of *Cucurbita pepo*. *Journal of Chemical Ecology*.

Boege, K., J.S. Thaler, and A.A. Agrawal. Ontogenetic strategies in insect herbivores and their impact on tri-trophic interactions. *Current Opinion in Insect Science*.

Jones, P.L., G. Petschenka, L. Flacht, and A.A. Agrawal. Cardenolide intake, sequestration, and excretion by the monarch butterfly along gradients of plant toxicity and larval ontogeny. *Journal of Chemical Ecology*.

Refereed Papers

2019 Hahn, P.G., A.A. Agrawal, K.I. Sussman, and J.L. Maron. Population variation, environmental gradients, and the evolutionary ecology of plant defense against herbivory. *American Naturalist* 193: 20–34.

Züst, T., G. Petschenka, A.P. Hastings, and A.A. Agrawal. Toxicity of milkweed leaves and latex: chromatographic quantification versus biological activity of cardenolides in 16 *Asclepias* species. *Journal of Chemical Ecology* 45: 50-60. (cover photo)

2018 Petschenka, G., C.S. Fei, J.J. Araya, S. Schröder, B.N. Timmermann, and A.A. Agrawal. Structural variation in toxin-receptor interactions suggests a mechanism for how milkweed plants can selectively defend against herbivores. *Frontiers in Plant Science* 9:1424.

- Züst, T, S. Mou, and A.A. Agrawal. What doesn't kill you makes you stronger: the burdens and benefits of toxin sequestration in an aphid. *Functional Ecology* 32:1972-1981.
- Agrawal, A.A. and H. Inamine. Mechanisms behind the monarch's decline. *Science* 360:1294-1296.
- Maron, J.L., M.T.J. Johnson, A.P. Hastings, and A.A. Agrawal. Fitness consequences of occasional outcrossing in a clonal plant (*Oenothera biennis*). *Ecology* 99: 464-473.
- Agrawal, A.A., A.P. Hastings, D.M. Fines, S. Bogdanowicz, and M. Huber. Insect herbivory and plant adaptation in an early successional community. *Evolution* 72: 1020-1033.
- Agrawal, A.A., A. Ali, M.D. Johnson, A.P. Hastings, D. Burge, M.G. Weber. Toxicity of the spiny thick-foot *Pachypodium*. *American Journal of Botany* 105: 677-686.
- 2017 Agrawal, A.A. Towards predictive framework for convergent evolution: integrating natural history, genetic mechanisms, and consequences for the diversity of life. *American Naturalist* 190: S1-S12.
- Züst, T. and A.A. Agrawal. Trade-offs between plant growth and defense against insect herbivory: An emerging mechanistic synthesis. *Annual Review of Plant Biology* 68: 513-534.
- Ali, J.G. and A.A. Agrawal. Trade-offs and tritrophic consequences of host shifts in highly specialized root herbivores. *Functional Ecology* 31:153-160.
- Züst, T. and A.A. Agrawal. Plant chemical defense indirectly mediates aphid performance via interactions with tending ants. *Ecology* 98:601-607.
- Cook-Patton, S.C., A.P. Hastings, A.A. Agrawal. Genotypic diversity mitigates negative effects of density on plant performance: a field experiment and life-cycle analysis of common evening primrose *Oenothera biennis*. *Journal of Ecology* 105:726-735.
- Groen, S., E.R. LaPlante, N.M. Alexandre, A.A. Agrawal, S. Dobler, N.K. Whiteman. Multidrug transporters and organic anion transporting polypeptides protect insects against the toxic effects of cardenolides. *Insect Biochemistry and Molecular Biology* 81:51-61.
- Jones, P.L. A.A. Agrawal. Learning in insect pollinators and herbivores. *Annual Review of Entomology* 62:53-71.

- Gustafsson, K., S.A. Wolf, and A.A. Agrawal. Science-policy-practice interfaces: Emergent knowledge and monarch butterfly conservation. *Environmental Policy and Governance* 27:521-533.
- 2016 Jones, P.L. A.A. Agrawal. Consequences of toxic secondary compounds in nectar for mutualist bees and antagonist butterflies. *Ecology* 97: 2570–2579. (cover photo)
- Inamine, H., S.P. Ellner, J.P. Springer, and A.A. Agrawal. Linking the continental migratory cycle of the monarch butterfly to understand its population decline. *Oikos* 125:1081-1091. (cover photo)
- Petschenka, G. and A.A. Agrawal. How herbivores coopt plant defenses: Natural selection, specialization, and sequestration. *Current Opinion in Insect Science* 14:17–24.
- Pellissier, L., G. Litsios, M. Fishbein, N. Salamin, A.A. Agrawal, and S. Rasmann. Different rates of defense evolution and niche preferences in clonal and non-clonal milkweeds (*Asclepias* spp.). *New Phytologist* 209: 1230–1239.
- Lewis, E.M., J.B. Fant, M.J. Moore, A.P. Hastings, E.L. Larson, A.A. Agrawal, and K.A. Skogen. Microsatellites for *Oenothera gayleana* and *O. hartwegii* subsp. *filifolia* (Onagraceae), and their utility in section *Calylophus*. *Applications in Plant Science* 4: 1500107
- Züst, T. and A.A. Agrawal. Plant resistance to aphids: chemical defense, induced responses, and evolution. *Nature Plants* 2, 15206.
- Züst, T. and A.A. Agrawal. Population growth and sequestration of plant toxins along a gradient of specialization in four aphid species on the common milkweed *Asclepias syriaca*. *Functional Ecology* 30: 547–556.
- Tingle, J.L., S.C. Cook-Patton, and A.A. Agrawal. Spillover of a biological control agent (*Chrysolina quadrigemina*) onto native St. Johnswort (*Hypericum punctatum*). *PeerJ* 4:e1886; DOI 10.7717/peerj.1886.
- 2015 Agrawal, A.A., A.P. Hastings, G.S. Bradburd, E.C. Woods, T. Züst, J.A. Harvey, T. Bukovinszky. Evolution of plant growth and defense in a continental introduction. *American Naturalist* 186:E1-E15.
- Agrawal, A.A. and M.G. Weber. On the study of plant defence and herbivory using comparative approaches: how important are secondary plant compounds? *Ecology Letters* 18: 985–991.
- Petschenka, G. and A.A. Agrawal. Toxin resistance in the milkweed butterflies was driven by predation, not host plant use. *Proceedings of the Royal Society B* 282: 20151865. DOI: 10.1098/rspb.2015.1865

- Fitzpatrick, C.R., A.A. Agrawal, N. Basiliko, A.P. Hastings, M.E. Isaac, M. Preston, and M.T.J. Johnson. The importance of plant genotype and contemporary evolution for terrestrial ecosystem processes. *Ecology* 96:2632–2642.
- Züst, T., S. Rasmann, and A.A. Agrawal. Growth-defense trade-offs for two major anti-herbivore traits of the common milkweed *Asclepias syriaca* L. *Oikos* 124: 1404-1415.
- Raguso, R.A., A.A. Agrawal, A.E. Douglas, G. Jander, A. Kessler, K.A. Poveda and J.S. Thaler. The raison d'être of chemical ecology. *Ecology* 96:617–630.
- Martin, L.J., A.A. Agrawal, C.E. Kraft. Historically browsed jewelweed populations exhibit greater tolerance to deer herbivory than historically protected populations. *Journal of Ecology* 103:243-249. (Harper prize of the British Ecological Society, runner up paper)
- Kariñho-Betancourt, E., A.A. Agrawal, R. Halitschke, and J. Núñez-Farfán. Phylogenetic correlations among chemical and physical plant defenses change with ontogeny. *New Phytologist* 206:796–806.
- Gustafsson, K., A.A. Agrawal, B.E. Lewenstein, and S.A. Wolf. The monarch butterfly through time and space: the social construction of an icon. *BioScience* 65:112-122.
- 2014 Agrawal, A.A., A.P. Hastings, A.C. Knight, E.T. Patrick. Specificity of herbivore-induced hormonal signaling and defensive traits in closely related milkweeds (*Asclepias* spp.). *Journal of Chemical Ecology* 40:717–729.
- Agrawal, A.A., E.T. Patrick, and A.P. Hastings. Tests of the coupled expression of latex and cardenolide plant defense in common milkweed (*Asclepias syriaca*). *Ecosphere* 5:126. <http://dx.doi.org/10.1890/ES14-00161.1>.
- Ali, J.G. and Anurag A. Agrawal. Asymmetry of plant-mediated interactions between specialist aphids and caterpillars on two milkweeds. *Functional Ecology* 28: 1404-1412.
- Weber, M.G. and A.A. Agrawal. Defense mutualisms enhance plant diversification. *PNAS* 111:16442-16447. (cover article)
- Cook-Patton, S.C. and A.A. Agrawal. Exotic plants contribute positively to biodiversity functions but reduce native seed production and arthropod richness. *Ecology* 95: 1642-1650.
- DiTommaso, A., S.H. Morris, J.D. Parker, C.L. Cone, A.A. Agrawal. Deer browsing delays succession by altering aboveground vegetation and belowground seed banks. *PLoS One* 9:e91155.

- Desurmont, G.A., P.A. Weston, and A.A. Agrawal. Reduction of oviposition time cost and larval group feeding: two potential benefits of aggregative oviposition for the viburnum leaf beetle. *Ecological Entomology* 39:125–132.
- Desurmont, G.A., A.E. Hajek, and A.A. Agrawal. Seasonal decline in plant defense is associated with relaxed offensive oviposition behavior in the viburnum leaf beetle *Pyrrhalta viburni*. *Ecological Entomology* 39: 589–594.
- Erwin, A.C., T. Züst, J.G. Ali, and A.A. Agrawal. Aboveground herbivory facilitates above- and belowground conspecific insects and reduces fruit production. *Journal of Ecology* 102:1038–1047.
- Desurmont, G.A. and A.A. Agrawal. Do plant defenses predict damage by an invasive herbivore? A comparative study of the viburnum leaf beetle. *Ecological Applications* 24: 759–769.
- Bukovinszky, T., R. Gols, A.A. Agrawal, C. Roge, T.M. Bezemer, A. Biere, and J.A. Harvey. Reciprocal interactions between native and introduced populations of common milkweed, *Asclepias syriaca*, and the specialist aphid, *Aphis nerii*. *Basic and Applied Ecology* 15:444–452.
- Stastny, M. and A.A. Agrawal. Love thy neighbor? Reciprocal impacts between plant community structure and insect herbivory in co-occurring Asteraceae. *Ecology* 95:2904–2914.
- 2013 Erwin, A.C., M.A. Geber, and A.A. Agrawal. Specific impacts of two root herbivores and soil nutrients on plant performance and insect-insect interactions. *Oikos* 122:1746–1756.
- Wason, E.L., A.A. Agrawal, M.D. Hunter. A genetically-based latitudinal cline in the emission of herbivore-induced plant volatile organic compounds. *Journal of Chemical Ecology* 39:1101-1111.
- Rafter, J.L., Agrawal, A.A., and E.L. Preisser. Chinese mantids gut toxic monarch caterpillars: avoidance of prey defense? *Ecological Entomology* 38:76–82.
- Agrawal, A.A., M.T.J. Johnson, A.P. Hastings, J.L. Maron. Experimental evolution of plant life-history traits and its eco-evolutionary feedback to seed predator populations. *American Naturalist* 181:S135-D145.
- Burge, D., K. Mugford, A.P. Hastings, and A.A. Agrawal. Phylogeny of the plant genus *Pachypodium* (Apocynaceae). *PeerJ*, DOI: 10.7717/peerj.70.
- 2012 Agrawal, A.A., A.P. Hastings, M.T. Johnson, J.L. Maron, J-P. Salminen. Insect herbivores drive real-time ecological and evolutionary change in plant populations. *Science* 338:113-116. (with perspectives article published in the same issue)

Abdala-Roberts, L., A.A. Agrawal, K.A. Mooney. Ant-aphid interactions on *Asclepias syriaca* are mediated by plant genotype and caterpillar damage. *Oikos* 121:1905–1913.

Agrawal, A.A., G. Petschenka, R.A. Bingham, M.G. Weber, and S. Rasmann. Toxic cardenolides: chemical ecology and coevolution of specialized plant-herbivore interactions (*Tansley Review*). *New Phytologist* 194:28–45.

Parker, J.D., J-P. Salminen, and A.A. Agrawal. evolutionary potential of root chemical defense: genetic correlations with shoot chemistry and plant growth. *Journal of Chemical Ecology* 38:992–995.

Weber, M.G. and Agrawal, A.A. Phylogeny, ecology and hypothesis testing: coupling comparative and experimental approaches. *Trends in Ecology and Evolution* 27:394-403.

Weber, M.G., W.L. Clement, M.J. Donoghue, and A.A. Agrawal. Phylogenetic and experimental tests of interactions among mutualistic plant defense traits in *Viburnum* (Adoxaceae). *American Naturalist* 180:450-463.

Woods, E.C., A.P. Hastings, N.E. Turley, S.B. Heard, and A.A. Agrawal. Adaptive geographical clines in the growth and defense of a native plant. *Ecological Monographs* 82:149–168.

Desurmont, G.A., F. Herard, and A.A. Agrawal. Oviposition strategy as a means of local adaptation to plant defense in native and invasive populations of the viburnum leaf beetle. *Proc Royal Society Lond - Biological Sciences* 279:952–958.

Rasmann, S., M. De Vos, C.L. Casteel, D. Tian, J.Y. Sun, A.A. Agrawal, G.W. Felton, and G. Jander. Transgenerational resistance against insect herbivory requires jasmonates and siRNA synthesis. *Plant Physiology* 158:854–863.

Ali, J.G. and A.A. Agrawal. Specialist versus generalist insect herbivores and plant defense. *Trends in Plant Science* 17:293-302. (cover article)

Dobler, S., S. Dalla, V. Wagschal, and A.A. Agrawal. Community-wide convergent evolution in insect adaptation to toxic cardenolides by substitutions in the Na,K-ATPase. *PNAS* 109:13040-13045. (cover article, with News and Views article published in *Nature*)

Agrawal, A.A., E.E. Kearney, A.P. Hastings, and T.E. Ramsey. Attenuation of the jasmonate burst, plant defensive traits, and resistance to specialist monarch caterpillars on shaded common milkweed (*Asclepias syriaca*). *Journal of Chemical Ecology* 38:893–901.

Agrawal, A. A. The monarch-milkweed arms race. *American Butterflies* 20(2):26-33.

- Holeski, L.M., G. Jander, and A.A. Agrawal. Transgenerational defense induction and epigenetic inheritance in plants. *Trends in Ecology and Evolution* 27:618-626.
- Manson, J.S., S. Rasmann, R. Halitschke, J.D. Thomson, A.A. Agrawal. Cardenolides in nectar are not a mere consequence of allocation to other plant parts: a phylogenetic study of milkweeds (*Asclepias*). *Functional Ecology* 26:1100–1110.
- 2011 Rasmann, S. and A.A. Agrawal. Evolution of specialization: a phylogenetic study of host range in the red milkweed beetle (*Tetraopes tetraophthalmus*). *American Naturalist* 177:728–737.
- Rasmann, S., A.C. Erwin, R. Halitschke, and A.A. Agrawal. Direct and indirect root defense of milkweed (*Asclepias syriaca*): trophic cascades, tradeoffs, and novel methods for studying subterranean herbivory. *Journal of Ecology* 99:16–25.
- Agrawal, A.A. Current trends in the evolutionary ecology of plant defense. *Functional Ecology* 25:420–432. (cover article)
- Rasmann, S. and A.A. Agrawal. Latitudinal patterns in plant defense: macroevolution of cardenolides, their toxicity, and induction following herbivory. *Ecology Letters* 14:476–483.
- Desurmont, G.A., M.J. Donoghue, W.L. Clement, and A.A. Agrawal. Evolutionary history predicts plant defense against an invasive pest. *PNAS* 108:7070–7074.
- Cook-Patton, S.C., S.H. McArt, A. Parachnowicz, J.S. Thaler, and A.A. Agrawal. A direct comparison of the ecosystem and community impacts of genotypic and species diversity. *Ecology* 92:915–923.
- Cook-Patton, S.C. and A.A. Agrawal. Relatedness predicts phenotypic plasticity in plants better than weediness. *Evolutionary Ecology Research* 13:527–542.
- 2010 Mooney, K.A., R. Halitschke, A. Kessler, and A.A. Agrawal. Evolutionary tradeoffs in plants mediate the strength of trophic cascades. *Science* 327:1642-1644.
- Auld, J. R., A. A. Agrawal, and R. A. Relyea. Re-evaluating the costs and limits of adaptive phenotypic plasticity. *Proceedings of the Royal Society of London – Series B* 277:503–511.
- Bingham, R.A. and A.A. Agrawal. Ecological genetics of herbivore-specific induced defenses in common milkweed. *Journal of Ecology* 98:1014-1028. (cover article)
- Nielsen, C., A. A. Agrawal, and A. E. Hajek. Ants defend aphids against lethal disease. *Biology Letters* 6:205-208.

- Thaler, J. S., A. A. Agrawal, and R. Halitschke. Salicylate-mediated interactions between pathogens and herbivores. *Ecology* 91:1075–1082.
- Parker, J., J.-P. Salminen, and A.A. Agrawal. Herbivory enhances positive effects of plant genotypic diversity. *Ecology Letters* 13:553 - 563.
- Karonen, M., J. Parker. A.A. Agrawal, and J.-P. Salminen. First evidence of hexameric and heptameric ellagitannins in plants detected by liquid chromatography/electrospray ionization mass spectrometry. *Rapid Communications in Mass Spectrometry* 24:3151–3156.
- Meyer, J.R., A.A. Agrawal, D.T. Dobias, R.T. Quick, D. Schneider, and R.E. Lenski. Parallel changes in host resistance to viral infection during 45,000 generations of relaxed selection. *Evolution* 64:3024–3034.
- 2009 Agrawal, A. A., J-P. Salminen, and M. Fishbein. Phylogenetic trends in phenolic metabolism of milkweeds (*Asclepias*): Evidence for escalation. *Evolution* 63:663–673. (cover article)
- Rasmann, S., M.D. Johnson, and A.A. Agrawal. Induced responses to herbivory and jasmonate in three milkweed species. *Journal of Chemical Ecology* 35:1326-1334.
- Futuyma, D. J. and A. A. Agrawal. Macroevolution and the biological diversity of plants and herbivores. *PNAS* 106:18054–18061.
- Agrawal, A. A., M. Fishbein, R. Halitschke, A. P. Hastings, D. L. Rabosky, and S. Rasmann. Evidence for adaptive radiation from a phylogenetic study of plant defenses. *PNAS* 106:18067–18072.
- Agrawal, A. A. and K. Konno. Latex: a model for understanding mechanisms, ecology, and evolution of plant defense against herbivory. *Annual Review of Ecology, Evolution and Systematics* 40:311-331.
- Rasmann, S., A. A. Agrawal, A. C. Erwin, and S. C. Cook. Cardenolides, induced responses, and interactions between above and belowground herbivores in the milkweeds (*Asclepias* spp). *Ecology* 90:2393–2404.
- Rasmann, S. and A. A. Agrawal. Plant defense against herbivory: progress in identifying synergism, redundancy, and antagonism between resistance traits. *Current Opinion in Plant Biology* 12:473–478.
- Johnson, M. T. J., A. A. Agrawal, J. L. Maron, and J-P. Salminen. Heritability, covariation and natural selection on 24 traits of common evening primrose (*Oenothera biennis*) from a field experiment. *Journal of Evolutionary Biology* 22:1295–1307.

- Agrawal, A. A., M. Fishbein, R. Jetter, J-P. Salminen, J. B. Goldstein, A. E. Freitag, and J. P. Sparks. Phylogenetic ecology of leaf surface traits in the milkweeds (*Asclepias* spp.): Chemistry, ecophysiology, and insect behaviour. *New Phytologist* 183:848-867.
- 2008 Agrawal, A. A., A. C. Erwin, and S. C. Cook. Natural selection and predicted response for ecophysiological traits of swamp milkweed (*Asclepias incarnata*) in the field. *Journal of Ecology* 96:536-542. (cover article)
- Agrawal, A. A. and M. Fishbein. Phylogenetic escalation and decline of plant defense strategies. *PNAS* 105:10057-10060.
- Agrawal, A. A., M. J. Lajeunesse, and M. Fishbein. Evolution of latex and its constituent defensive chemistry in milkweeds (*Asclepias*): a test of phylogenetic escalation. *Entomologia Experimentalis et Applicata* 128:126-138.
- Larson, E. L., S. M. Bogdanowicz, A. A. Agrawal, M. T. J. Johnson, and R. G. Harrison. Isolation and characterization of polymorphic microsatellite loci in common evening primrose (*Oenothera biennis*). *Molecular Ecology Resources* 8:434-436.
- Mooney, K. A. and A. A. Agrawal. Plant genotype shapes ant-aphid interactions: implications for community structure and indirect plant defense. *American Naturalist* 171:E195-E205.
- Mooney, K. A., P. Jones, and A. A. Agrawal. Coexisting congeners: demography, competition, and interactions with cardenolides for two milkweed-feeding aphids. *Oikos* 117:450-458.
- Rasmann, S. and A. A. Agrawal. In defense of roots: A research agenda for studying plant resistance to belowground herbivory. *Plant Physiology* 146:875-880. (cover article)
- Smith, R. A., K. A. Mooney, and A. A. Agrawal. Coexistence of three specialist aphids on the common milkweed *Asclepias syriaca*. *Ecology* 89:2187-2196.
- 2007 Agrawal, A. A. Macroevolution of plant defense strategies. *Trends in Ecology & Evolution* 22:103-109. (cover article)
- Agrawal, A. A., D. A. Ackerly, F. Adler, B. Arnold, C. Cáceres, D. F. Doak, E. Post, P. Hudson, J. Maron, K. A. Mooney, M. Power, D. Schemske, J. J. Stachowicz, S. Y. Strauss, M. G. Turner, E. Werner. Filling key gaps in population and community ecology. *Frontiers in Ecology and the Environment* 5:145-152.
- Johnson, M. T. J. and A. A. Agrawal. Covariation and composition of arthropod species across plant genotypes of evening primrose, *Oenothera biennis*. *Oikos* 116:941-956.
- Morris, W. F., R. A. Hufbauer, A. A. Agrawal, J. D. Bever, V. A. Borowicz, G. S. Gilbert, J. L. Maron, C. E. Mitchell, I. M. Parker, A. G. Power, M. E. Torchin, and

- D. P. Vázquez. Direct and interactive effects of enemies and mutualists on plant performance: A meta-analysis. *Ecology* 88:1021-1029.
- 2006 Agrawal, A. A. and M. Fishbein. Plant defense syndromes. *Ecology* 87:S123-S149.
- Agrawal, A. A., J. A. Lau, and P. A. Hambäck. Community heterogeneity and the evolution of interactions between plants and insect herbivore. *Quarterly Review of Biology* 81:349-376.
- Johnson, M. T. J, M. J. Lajeunesse, and A. A. Agrawal. Additive and interactive effects of plant genotypic diversity on arthropod communities and plant fitness. *Ecology Letters* 9:24-34.
- Mitchell, C. E., A. A. Agrawal, J. D. Bever, G. S. Gilbert, R. A. Huffbauer, J. N. Klironomos, J. L. Maron, W. F. Morris, I. M. Parker, A. G. Power, E. W. Seabloom, M. E. Torchin, and D. P. Vázquez. Biotic interactions and plant invasions. *Ecology Letters* 9:726-740.
- 2005 Agrawal, A. A. Future directions in the study of induced plant responses to herbivory. *Entomologia Experimentalis et Applicata* 115:97-105.
- Agrawal, A. A. Natural selection on common milkweed (*Asclepias syriaca*) by a community of specialized insect herbivores. *Evolutionary Ecology Research* 7:651-667.
- Agrawal, A. A., P. M. Kotanen, C. E. Mitchell, A. G. Power, W. Godsoe, and J. Klironomos. Enemy Release? An experiment with congeneric plant pairs and diverse above- and below-ground enemies. *Ecology* 86:2979–2989.
- Conner, J. K. and A. A. Agrawal. Mechanisms of constraints: The contributions of selection and genetic variance to the maintenance of cotyledon number in wild radish. *Journal of Evolutionary Biology* 18:238-242.
- Johnson, M. T. J. and A. A. Agrawal. Plant genotype and the environment interact to shape a diverse arthropod community on evening primrose (*Oenothera biennis*). *Ecology* 86:874-885.
- Kurashige, N. S. and A. A. Agrawal. Phenotypic plasticity to light competition and herbivory in *Chenopodium album* (Chenopodiaceae). *American Journal of Botany* 92:21-26.
- McGuire, R. and A. A. Agrawal. Trade-offs between the shade-avoidance response and plant resistance to herbivores? Tests with mutant *Cucumis sativus*. *Functional Ecology* 19:1025-1031.
- 2004 Agrawal, A. A. Plant defense and density dependence in the population growth of herbivores. *American Naturalist* 164:113-120.

- Agrawal, A. A. Resistance and susceptibility of milkweed: Competition, root herbivory, and plant genetic variation. *Ecology* 85:2118-2133 (cover article).
- Agrawal, A. A. and D. A. Spiller. Polymorphic buttonwood: Effects of disturbance on resistance to herbivores in green and silver morphs of a Bahamian shrub. *American Journal of Botany* 91:1990-1997.
- Agrawal, A. A., J. K. Conner, and J. R. Stinchcombe. Evolution of plant resistance and tolerance to frost damage. *Ecology Letters* 7:1199-1208.
- Agrawal, A. A., N. Underwood, and J. R. Stinchcombe. Intraspecific variation in the strength of density dependence in aphid populations. *Ecological Entomology* 29:521-526.
- Barrett, R. D. H. and A. A. Agrawal. Interactive effects of genotype, environment, and ontogeny on resistance of cucumber (*Cucumis sativus*) to the generalist herbivore, *Spodoptera exigua*. *Journal of Chemical Ecology* 30:37-51.
- Inouye, B. D. and A. A. Agrawal. Ant mutualists alter the composition and attack rate of the parasitoid community for the gall wasp *Disholcaspis eldoradensis* (Cynipidae). *Ecological Entomology* 29:692-696.
- Lempa, K., A. A. Agrawal, J-P. Salminen, T. Turunen, V. Ossipov, S. Ossipova, E. Haukioja, and K. Pihlaja. Rapid herbivore-induced changes in mountain birch phenolics and nutritive compounds and their effects on the performance of the major defoliator, *Epirrita autumnata*. *Journal of Chemical Ecology* 30:303-321.
- Van Zandt, P. A. and A. A. Agrawal. Community-wide impacts of herbivore-induced plant responses in milkweed (*Asclepias syriaca*). *Ecology* 85:2616-2629.
- Van Zandt, P. A. and A. A. Agrawal. Specificity of induced plant responses to specialist herbivores of the common milkweed *Asclepias syriaca*. *Oikos* 104:401-409.
- 2003 Agrawal, A. A. and N. S. Kurashige. A role for isothiocyanates in plant resistance against the specialist herbivore *Pieris rapae*. *Journal of Chemical Ecology* 29:1403-1415.
- Agrawal, A. A. and P. A. Van Zandt. Ecological play in the coevolutionary theater: Genetic and environmental determinants of attack by a specialist weevil on milkweed. *Journal of Ecology* 91:1049-1059.
- Agrawal, A. A. and P. M. Kotanen. Herbivores and the success of exotic plants: A phylogenetically controlled experiment. *Ecology Letters* 6:712-715. (Featured in *Science*, Editor's choice, 8/22/2003 issue, *Nature's News & Views* 8/28/2003 issue).
- Dicke, M., A. A. Agrawal, and J. Bruin. Plants talk, but are they deaf? *Trends in Plant Science* 8:403-405. (cover article)

- Johnson, M. T. J. and A. A. Agrawal. The ecological play of predator-prey dynamics in an evolutionary theatre. *Trends in Ecology & Evolution* 18:549-551.
- Rotem, K. and A. A. Agrawal. Density dependent population growth of the two-spotted spider mite, *Tetranychus urticae*, on the host plant *Leonurus cardiaca*. *Oikos* 103:559-565.
- Rotem, K., A. A. Agrawal, and L. Kott. Parental effects in *Pieris rapae* in response to variation in food quality: Adaptive plasticity across generations? *Ecological Entomology* 28:211-218.
- Spiller, D. A. and A. A. Agrawal. Intense disturbance enhances plant susceptibility to herbivory: Natural and experimental evidence. *Ecology* 84:890-897.
- 2002 Agrawal, A. A. Herbivory and maternal effects: Mechanisms and consequences of transgenerational induced plant resistance. *Ecology* 83:3408-3415.
- Agrawal, A. A., A. Janssen, J. Bruin, M. A. Posthumus and M. W. Sabelis. An ecological cost of plant defence: Attractiveness of bitter cucumber plants to natural enemies of herbivores. *Ecology Letters* 5:377-385.
- Agrawal, A. A., F. Vala, and M. W. Sabelis. Induction of preference and performance after acclimation to novel hosts in a phytophagous spider mite: Adaptive plasticity? *American Naturalist* 159:553-565.
- Agrawal, A. A., J. K. Conner, M. T. J. Johnson, and R. Wallsgrave. Ecological genetics of an induced plant defense against herbivores: Additive genetic variance and costs of phenotypic plasticity. *Evolution* 56:2206-2213.
- Agrawal, A. A., K. R. Kosola, and D. Parry. Gypsy moth defoliation and N-fertilization affect hybrid poplar regeneration following coppicing. *Canadian Journal of Forest Research* 32:1491-1495.
- Gardner, S. N. and A. A. Agrawal. Induced plant defense and the evolution of counter-defenses in herbivores. *Evolutionary Ecology Research* 4:1131-1151.
- Karban, R. and A. A. Agrawal. Herbivore offense. *Annual Review of Ecology and Systematics* 33:641-664.
- 2001 Agrawal, A. A. Phenotypic plasticity in the interactions and evolution of species. *Science* 294:321-326.
- Agrawal, A. A. Transgenerational consequences of plant responses to herbivory: An adaptive maternal effect? *American Naturalist* 157:555-569.

- Agrawal, A. A. and M. F. Sherriffs. Induced plant resistance and susceptibility to late-season herbivores of wild radish. *Annals of the Entomological Society of America* 94:71-75.
- Fordyce, J. A. and A. A. Agrawal. The role of plant trichomes and caterpillar group size on growth and defence of the pipevine swallowtail *Battus philenor*. *Journal of Animal Ecology* 70:997-1005.
- 2000 Agrawal, A. A. Benefits and costs of induced plant defense for *Lepidium virginicum* (Brassicaceae). *Ecology* 81:1804-1813.
- Agrawal, A. A. Host range evolution: Adaptation of mites and trade-offs in fitness on alternate hosts. *Ecology* 81:500-508.
- Agrawal, A. A. Mechanisms, ecological consequences and agricultural implications of tri-trophic interactions. *Current Opinion in Plant Biology* 3:329-335 (cover article).
- Agrawal, A. A. Overcompensation of plants in response to herbivory and the by-product benefits of mutualism. *Trends in Plant Science* 5:309-313.
- Agrawal, A. A. Specificity of induced resistance in wild radish: Causes and consequences for two specialist and two generalist caterpillars. *Oikos* 89:493-500.
- Agrawal, A. A. and C. N. Klein. What omnivores eat: Direct effects of induced plant resistance on herbivores and indirect consequences for diet selection by omnivores. *Journal of Animal Ecology* 69:525-535.
- Agrawal, A. A. and J. A. Fordyce. Induced indirect defense in a lycaenid-ant association: The regulation of a resource in a mutualism. *Proceedings of the Royal Society of London, Series B* 267:1857-1861 (featured on Science Magazine's web site).
- Agrawal, A. A. and R. G. Colfer. Consequences of thrips-infested plants for attraction of conspecifics and parasitoids. *Ecological Entomology* 25:493-496.
- Agrawal, A. A. and R. Karban. Specificity of constitutive and induced resistance: Pigment glands influence mites and caterpillars on cotton plants. *Entomologia Experimentalis et Applicata* 96:39-49.
- Agrawal, A. A., J. A. Rudgers, L. W. Botsford, D. Cutler, J. B. Gorin, C. J. Lundquist, B. W. Spitzer and A. L. Swann. Benefits and constraints on plant defense against herbivores: Spines influence the legitimate and illegitimate flower visitors of yellow star thistle, *Centaurea solstitialis* L. (Asteraceae). *Southwestern Naturalist* 45:1-5.
- Agrawal, A. A., R. Karban, and R. G. Colfer. How leaf domatia and induced plant resistance affect herbivores, natural enemies and plant performance. *Oikos* 89:70-80.

- 1999 Agrawal, A. A. Induced responses to herbivory in wild radish: Effects on several herbivores and plant fitness. *Ecology* 80:1713-1723.
- Agrawal, A. A. and B. J. Dubin-Thaler. Induced responses to herbivory in the neotropical ant-plant association between *Azteca* ants and *Cecropia* trees: Response of ants to potential inducing cues. *Behavioral Ecology and Sociobiology* 45:47-54.
- Agrawal, A. A., C. Kobayashi, and J. S. Thaler. Influence of prey availability and induced host plant resistance on omnivory by western flower thrips. *Ecology* 80:518-523.
- Agrawal, A. A., C. Laforsch, and R. Tollrian. Transgenerational induction of defences in animals and plants. *Nature* 401:60-63 (with News and Views commentary by Erkki Haukioja).
- Agrawal, A. A., P. M. Gorski, and D. W. Tallamy. Polymorphism in plant defense against herbivory: Constitutive and induced resistance in *Cucumis sativus*. *Journal of Chemical Ecology* 25:2285-2304.
- Agrawal, A. A., S. Y. Strauss and M. J. Stout. Costs of induced responses and tolerance to herbivory in male and female fitness components of wild radish. *Evolution* 53:1093-1104.
- Karban, R., A. A. Agrawal, J. S. Thaler, and L. S. Adler. Induced plant responses and information content about risk of herbivory. *Trends in Ecology & Evolution* 11:443-447.
- Strauss, S. Y. and A. A. Agrawal. Ecology and evolution of plant tolerance to herbivory. *Trends in Ecology & Evolution* 14:179-185.
- 1998 Agrawal, A. A. Algal defense, grazers, and their interactions in aquatic trophic cascades. *Acta Oecologica* 19:331-337.
- Agrawal, A. A. Induced responses to herbivory and increased plant performance. *Science* 279:1201-1202 (cover article).
- Agrawal, A. A. Leaf damage and associated cues induce aggressive ant recruitment in a neotropical ant plant. *Ecology* 79:2100-2112.
- Agrawal, A. A. and M. T. Rutter. Dynamic anti-herbivore defense in ant-plants: The role of induced responses. *Oikos* 83:227-236.
- 1997 Agrawal, A. A. Do leaf domatia mediate a plant - mite mutualism? An experimental test of the effects on herbivores and predators. *Ecological Entomology* 22:371-376.
- Agrawal, A. A. and R. Karban. Domatia mediate plant-arthropod mutualism. *Nature* 387:562-563.

- Karban, R., A. A. Agrawal, and M. Mangel. The benefits of induced defenses against herbivores. *Ecology* 78:1351-1355.
- 1996 Agrawal, A. A. Natural history, seed predation, and germination of *Prosopis juliflora* relative to a reforestation project in southwestern Ecuador. *Tropical Ecology* 37:193-210.
- Agrawal, A. A. Seed germination of *Loxopterygium guasango*, a threatened tree of coastal northwestern South America. *Tropical Ecology* 37:273-276.
- 1995 Agrawal, A. Use of dendrochronological methods to estimate an ecological impact date of the chestnut blight. *Virginia Journal of Science* 46:41-47.
- Agrawal, A. and S. L. Stephenson. Recent successional changes in a former chestnut-dominated forest in southwestern Virginia. *Castanea* 60:107-113.

Book Chapters

- 2015 Agrawal, A.A., J.G. Ali, S. Rasmann, and M. Fishbein. Macroevolutionary trends in the defense of milkweeds against monarchs: latex, cardenolides, and tolerance of herbivory. Pages 47-59 in: K. Oberhauser, S. Altizer, and K. Nail (editors), *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. Cornell University Press.
- 2010 Agrawal, A.A., J.K. Conner, and S. Rasmann. Tradeoffs and adaptive negative correlations in evolutionary ecology. Pages 243-268 in: M. Bell, W. Eanes, D. Futuyma, and J. Levinton (editors), *Evolution After Darwin: the First 150 Years*. Sinauer Associates.
- 2009 Whitman, D. W. and A. A. Agrawal. What is Phenotypic Plasticity and why is it Important? Pages 1-63 in: D. W. Whitman and T. N. Ananthakrishna (editors), *Phenotypic plasticity of insects: Mechanisms and consequences*. Science Publishers, Inc, Enfield, NH.
- 2008 Mooney, K.A. and A.A. Agrawal. Phenotypic plasticity. Pages 43-57 in: K. J. Tilmon (editor), *The evolutionary biology of herbivorous insects: Specialization, speciation, and radiation*. University of California Press, Berkeley, CA.
- 1999 Agrawal, A. A. Induced plant defense: Evolution of induction and adaptive phenotypic plasticity. In: *Inducible Plant Defenses Against Pathogens and Herbivores: Biochemistry, Ecology, and Agriculture*, A. A. Agrawal, S. Tuzun, and E. Bent (eds.). American Phytopathological Society Press, St. Paul, MN. Pp. 251-268.
- Agrawal, A. A. and R. Karban. Why induced defenses may be favored over constitutive strategies in plants. In: *The Ecology and Evolution of Inducible Defenses*, R. Tollrian and C. D. Harvell (eds.). Princeton University Press, Princeton, NJ. Pp. 45-61.

Gardner, S. N., A. A. Agrawal, J. Gressel, and M. Mangel. Strategies to delay the evolution of resistance in pests: Dose rotations and induced plant defenses. In: *Aspects of Applied Biology 53: Challenges in Applied Population Biology*. Pp. 189-196.

- 1998 Agrawal, A. A. Effects of leaf domatia and induced plant resistance on omnivores in cotton. In: *Innovation in biological control research*, M. S. Hoddle (ed.). Proceedings of the California Conference on Biological Control, Berkeley, CA. Pp 127-130.

Books and journal special features edited

- 2017 Agrawal, A.A. Convergence, natural history, and big questions in biology. *American Naturalist* 190:S1-S122.
- 2012 Agrawal, A.A. and Heil, M. Specificity of plant-enemy interactions. *Trends in Plant Science* 17:239-319.
- Barbosa, P., D. Letourneau, and A.A. Agrawal. *Insect Outbreaks Revisited*. Wiley-Blackwell. 480pp.
- 2009 Agrawal, A.A. and D.J. Futuyma. Plant and insect biodiversity. *PNAS* 106:18054-18108.
- 2006 Webb, C., J. B. Losos, and A. A. Agrawal. Integrating phylogenies in to community ecology. *Ecology* 87:S1-S166.
- 2005 Ellison, A. M. and A. A. Agrawal. The statistics of rarity. *Ecology* 86:1079-1080.
- Fortin, M.-J. and A. A. Agrawal. Landscape ecology comes of age. *Ecology* 86:1965-2017.
- Hawkins, B. A. and A. A. Agrawal. Latitudinal gradients. *Ecology* 86:2261-2328.
- Ives, A. R and A. A. Agrawal. Empirically motivated ecological theory. *Ecology* 86:3137-3132.
- 2004 Agrawal, A. A. Forum: The metabolic theory of ecology. *Ecology* 85:1771-1821.
- Irwin, R. E., L. S. Adler, and A. A. Agrawal. Community and evolutionary ecology of nectar. *Ecology* 85:1477-1533.
- Mopper, S. and A. A. Agrawal. Phytohormonal ecology. *Ecology* 85:3-77.
- 2003 Agrawal, A. A. Community genetics. *Ecology* 84:543-601.
- Agrawal, A. A. Selection studies in ecology. *Ecology* 84:1649-1712.

Agrawal, A. A. Underground processes in plant communities. *Ecology* 84:2256-2334.

Agrawal, A. A. Why omnivory? *Ecology* 84:2521-2567.

- 1999 Agrawal, A. A., S. Tuzun, and E. Bent. Inducible plant defenses against pathogens and herbivores: Biochemistry, ecology, and agriculture. American Phytopathological Society Press, St. Paul, MN. 390pp.

Non-Refereed Articles

- 2018 Unanswered Questions in Population and Community Ecology, Essay Contribution to *Biology: The Dynamic Science 4e*, by P. Russell, P. Hertz, and B. McMillan. Cengage.

- 2017 Agrawal, A.A. Monarchs in peril. *Scientific American* (on-line):
<https://blogs.scientificamerican.com/observations/monarchs-in-peril/>

- 2014 Agrawal, A.A. Observation, natural history, and an early post-Darwinian view of plant-animal interactions. *American Naturalist* 184:ii–iv.

Agrawal, A.A. Four more reasons to be skeptical of open-access publishing. *Trends in Plant Science* 19:133.

Agrawal, A.A. Chemical ecology and coevolution, a report on the 7th New Phytologist Workshop. *New Phytologist* 202: 1122–1125.

- 2012 Agrawal, A.A. and Heil, M. Synthesizing specificity: multiple approaches to understanding the attack and defense of plants. *Trends in Plant Science* 17:239-242.

Agrawal, A.A. An interview with a plant biologist. *Trends in Plant Science* 17:243.

- 2011 Auld, J. R., A. A. Agrawal, and R. A. Relyea. Measuring the cost of plasticity: avoid multicollinearity. Reply. *Proceedings of the Royal Society of London – Series B* 278:2726-2727.

Agrawal, A.A. Tradeoffs in chemical ecology. *Journal of Chemical Ecology* 37:230–231.

Agrawal, A. A. Book review: *Trophic Cascades: Predators, Prey, and the Changing Dynamics of Nature*" J. Terborgh and J.A. Estes, editors. Island Press, Washington, DC. *Quarterly Review of Biology* 86:127.

- 2009 Futuyma, D.J. and A.A. Agrawal. Evolutionary history and species interactions. *PNAS* 106:18043–18044.

- 2008 Agrawal, A. A. Book review: Induced Resistance for Plant Defence: a sustainable approach to crop protection. D. Walters, G. Lyon, and A. Newton, Editors. Blackwell Publishing, Oxford, UK. Quarterly Review of Biology 83:221.
- Agrawal, A.A. Unanswered Questions in Population and Community Ecology, Essay Contribution to Biology: Concepts and Applications, 7th Edition (C. Starr). Cengage/Cole Publishers.
- 2007 Agrawal, A. A., D. A. Ackerly, F. Adler, B. Arnold, C. Cáceres, D. F. Doak, E. Post, P. Hudson, J. Maron, K. A. Mooney, M. Power, J. J. Stachowicz, S. Y. Strauss, M. G. Turner, E. Werner. In support of observational studies: reply (to a letter to the editor by R. Sagarin). *Frontiers in Ecology and the Environment* 5:294-295.
- 2005 Agrawal, A. A. Corruption of journal impact factors. *Trends in Ecology & Evolution* 20:157. Reprinted in the *Ecological Society of America Bulletin* 87:45.
- 2003 Agrawal, A. A. and J. S. Thaler. Solving the two-body problem. *Science Magazine's Next Wave* (http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2003_03_07/noDOI.9006788717692695882).
- Agrawal, A. A. and L. S. Adler. Plant-animal interactions for the classroom (review of Herrera and Pellmyr, *Plant-animal interactions*). *Ecology* 84:807-808.
- Schmitz, O. J., F. R. Adler, and A. A. Agrawal. Linking individual-scale trait plasticity to community dynamics. *Ecology* 84:1081-1082.
- 2002 Agrawal, A. A. Optimal foraging and phenotypic plasticity in plants. *Trends in Ecology & Evolution* 17:305.
- Agrawal, A. A. and P. A. Van Zandt. The community ecology of live long and prosper. *Trends in Ecology & Evolution* 17:62.
- Agrawal, A. A. and S. Malcolm. Once upon a milkweed. *Natural History* 111(7):48-53 (cover article).
- 2001 Agrawal, A. A. Nectar, nodules and cheaters. *Trends in Ecology & Evolution* 16:23-24.
- Agrawal, A. A. and M. E. Dorken. Law of the unspecialized: Broken? *Trends in Ecology & Evolution* 16:426.
- 2000 Agrawal, A. Plant defense: Signals in insect eggs. *Trends in Ecology & Evolution* 15:357.
- Agrawal, A. A. Chemical ecology for the next generation (review of Haynes and Millar, *Methods in Chemical Ecology: Bioassays*). *Ecology* 81:881.

- Agrawal, A. A. Communication between plants: This time it's real. *Trends in Ecology & Evolution* 15:446.
- 1996 Agrawal, A. A. Evolution will not evolve us. *Global Biodiversity* 6:21-23.
- Agrawal, A. A. Reforestation in Ecuador's dry forest. *Desert Plants* 12:12-14.
- 1995 Agrawal, A. A. Biodiversity and sociobiology (review of E. O. Wilson, *Naturalist*). *Trends in Ecology & Evolution* 10:218-219.

Published work conducted under the supervision of Anurag Agrawal

- 2017 Gustafsson, K. Narrating the monarch butterfly: Managing knowledge complexity and uncertainty in co-production of a collective narrative and public discourse. *Science Communication* 39:492-519.
- 2014 Rasmann, S. Fine-tuning of defences and counter-defences in a specialised plant–herbivore system. *Ecological Entomology* 39:382–390.
- Parachnowitsch, A. L., S. Cook-Patton, and S. H. McArt. 2014. Neighbours matter: Natural selection on plant size depends on the identity and diversity of the surrounding community. *Evolutionary Ecology* 28:1139-1153.
- 2013 Weber, M.G. and K. Keeler. The phylogenetic distribution of extrafloral nectaries. *Annals of Botany* 111:1251-1261.
- 2012 Cook-Patton, S.C. and T. Bauerle. Potential benefits of plant diversity on vegetated roofs: a literature review. *Journal of Environmental management* 106:85-92.
- Vannett, R. L. and S. Rasmann. Arbuscular mycorrhizal fungi mediate below-ground plant–herbivore interactions: a phylogenetic study. *Functional Ecology* 26:1033–1042.
- 2011 Mooney, K.A. Genetically based population variation in aphid association with ants and predators. *Arthropod-Plant Interactions* 5:1-7.
- 2009 Johnson, M. T. J., M. Vellend, and J. R. Stinchcombe. Evolution in plant populations as a driver of ecological changes in arthropod communities. *Philosophical Transactions of the Royal Society of London - B* 364:1593–1605.
- Lajeunesse, M.J. Meta-analysis and the comparative phylogenetic method. *American Naturalist* 174:369-381.

- 2008 Johnson, M. T. J. Bottom-up effects of plant genotype on aphids, ants, and predators. *Ecology* 89:145-154.
- Johnson, M. T. J., R. Dinnage, A. Zhou, and M. D. Hunter. Environmental variation trumps the ecological effects of plant genotype on competition among plant species. *Journal of Ecology* 96:947-955.
- 2007 Johnson, M. T. J. Genotype-by-environment interactions impose variable selection on life-history strategy in Common Evening Primrose (*Oenothera biennis*). *Journal of Evolutionary Biology* 20:190-200.
- 2006 McGuire, R. J. and M. T. J. Johnson. Plant genotype and induced responses affect resistance to herbivores on evening primrose (*Oenothera biennis*). *Ecological Entomology* 31:21-30.

PROFESSIONAL OVERVIEW AND OBJECTIVES

My research program addresses questions in the ecology and evolution of interactions between plants and animals. In particular, I focus on the generally antagonistic interactions between plants and insect herbivores and ultimately seek to understand the complexity of community-wide interactions. What ecological factors allow the coexistence of similar species? What evolutionary factors led to the diversification of species? In total, plants and insect herbivores comprise about one half of earth's macroscopic biodiversity and herbivory accounts for major losses in agriculture. Given that herbivory is the conduit through which most of plants' autotrophic energy is transmitted to the rest of the food web, the focus on plant-herbivore interactions is justifiably important. My approach to science in general involves 1) rigorous, manipulative field experiments to test for the importance of conceptually or theoretically developed interactions, 2) a comparative phylogenetic approach to describing deep evolutionary patterns which bear on long-standing hypotheses, 3) the search for novel interactions which may be pervasive in nature but have escaped our attention, and 4) a keen interest in teaching and mentoring students at all levels of education. My research is mostly conducted in northeastern old-field communities, although when appropriate I travel to other field sites (Costa Rica, Bahamas, and Finland). During the colder months, my lab conducts more mechanistic experiments in glasshouses and growth chambers.