

CURRICULUM VITAE

Jan 2019

COLE GILBERT

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POSITIONS HELD

Professor: 70% teaching:30% research (July 2015-present; Acting Chair, Nov 2000, 2001)
The Hays & James M. Clark Director of Undergraduate Biology, Cornell University (July 2015 – present)
Member of Graduate Fields: Entomology (1992–present), Neurobiology & Behavior (1993–present)

Director of Undergraduate Studies, Department of Entomology (July 2009 – June 2016)
Director of Graduate Studies, Field of Entomology (Jan 2007 – June 2009).
Associate Professor (July 1999); Assistant Professor (March 1992)

LEAVES of ABSENCE

Sabbatical, Department of Biological Sciences, National University of Singapore, Apr-Jul 2017
National Science Foundation, Integrative Organismal Biology, Program Director, Aug 2004-Aug 2005
Center for Visual Science, RSBS, Australian National University, Canberra. Jan - May 2002

EDUCATION

Ph.D. (Honors) 1986 (Entomology). University of Kansas, with Prof. R. Jander, "Behavioral studies of visual movement perception by larvae and adults of cicindelid beetles".
M.A. 1980 (Entomology). University of Kansas, with Prof. R. Jander, "An examination of the prey localization and pursuit behavior of *Cicindela* (Insecta: Coleoptera)".
B.A. 1976 (Biology). Washington University, St. Louis, MO, with Prof. M.W. Fox, "An analysis of play behavior during late winter and early spring in a captive pack of wolves".

HONORS & AWARDS

2014. Richards-Hodson Lectureship, Department of Entomology, University of Minnesota.
2010. State University of New York Chancellor's Award for Excellence in Teaching.
2009. Circle Link Award (Cornell) for Outstanding Teaching, Advising, & Student Development
2005. Class of 2005 Faculty Commendation. Cornell College of Agriculture and Life Sciences
2003. Recognition Award in Teaching. Entomology Society of America (Eastern Branch)
2002. Visiting Fellow. Centre for Visual Science, RSBS, Australian National University, Canberra
1997. Faculty Fellow in Service, Cornell University. \$1998. "Biodiversity in Tompkins County"
1986-1989. National Research Service Award, NIH, EY05903. "Neurophysiology of visual movement detection" with Prof. R. DeVoe, Indiana University, Bloomington, IN
1984. Fulbright Fellow. "Neurophysiology of the landing response in Flies" with Priv. Doz. Dr. H.Eckert, Ruhr Universitaet, Bochum, Germany
1967. Eagle Scout. St. Louis Area Council, Boy Scouts of America

GRANTS & FELLOWSHIPS (last 8 years)

- 2018 Cornell, Engaged Cornell. \$10,000. "Minor in Applied Science communication and public Engagement. With Mark Sarvary, Bruce Lewenstein
- 2012-2014 National Science Foundation. Undergraduate Education (DOE 1240006) \$295,565. "Partnerships to prepare science teachers for inclusive, back-to-nature education" (10/1/2012 – 9/30/2014)
- 2010-2013 National Science Foundation. IOS-Neural Systems (IOS 0950688) \$325,000. "Blinding speed: The effects of relative motion on arthropod vision" (5/1/2010 – 4/30/2013)
- 2009 Howard Hughes Biomedical Fellowship. \$2500. "Serial homology of leg proprioceptors in the Diptera". Summer support for Avery Russell
- 2002-2005 National Science Foundation. IBN-Neuroscience 02-16836. \$203,000. "Vision on the run: Resolving moving natural images with arthropod eyes" (8/15/2002 – 9/18/2006)
- 2003-2008. National Institutes of Mental Health. Competitive renewal of 2T32MH015793-24. \$1,283,221. "An integrative approach to neurobiology and behavior." Executive Committee of Training Grant (Acting Director, Oct-Nov 2003)
- 2003 Howard Hughes Biomedical Fellowship. \$2500. "Convergent evolution of a flight control organ in Insects". Summer support for Jessica Fox
- 2002 Howard Hughes Biomedical Fellowship. \$2500. "Regional variation in visual ability of the tiger beetle, *Cicindela spp.* (Carabidae: Cicindelinae). Summer support for P.W. Chen
- 2001-2003 Air Force Office of Scientific Research. AF00T012 \$499,421. "Biologically inspired direct adaptive guidance and control for high-bandwidth flight systems" Phase II. Joint proposal with Guided Systems Technologies. Cornell's portion: \$125,000.(1/01/2002–12/31/2004)
- 2000 Air Force Office of Scientific Research. AF00T012 \$100,000. "Biologically inspired direct adaptive guidance and control for high-bandwidth flight systems" Phase I. Joint proposal with Guided Systems Technologies. Cornell's portion: \$29,998. (9/15/2000 – 6/15/2001)

TEACHING AND OTHER PROFESSIONAL EXPERIENCE

CORNELL UNIVERSITY

Comparative Physiology [BIOG 1440; S'13,'14,'15,'16,'18, F'18] This is a one-semester lecture and laboratory course for 320+ biology majors and covers the functions of cellular and systems physiology. Until 2018, I presented 1/2 of the lectures with another instructor. From 2018, we have had three instructors. My topics include metabolism, energetics, thermoregulation, circulation, osmoregulation, hormones, motor and nervous systems.

Evolutionary Biology & Biodiversity [BioEE 1780; F'11, S'12, F'13, F'16, F'18, S'19] This is a one semester lecture and lab course for 220+ life science majors. The course is team taught by 5-6 instructors. Until 2018, I presented 1/3 of the lectures (more than any other instructor), which cover the phyletic diversity in the Tree of Life. From 2018, I have presented two weeks on the animal Tree of Life.

Professional Development in Entomology [ENTOM 7670; F'13, F '18] I developed this new one-semester course to introduce first semester graduate students in the Field of Entomology to professional skills. We met 2x1.5 hr/week and worked on critically reading/presenting research articles, writing grant proposals, making posters, CVs, using bibliographic search and management software, discussing ethics, etc. In Fall 2018, this was a 1 credit seminar that I co-led with Brian Lazzaro.

Art and the Neurobiology of Vision [BIOG 1250 Biology Seminar, S '18] This is a 1 credit, pass/fail seminar designed for first year students to explore how our eye and brain respond to elements of Western painting, such as line, form, color, depth, etc. to build a percept of the entire work.

Insect Physiology [ENT 4830; S'93, F'94,'96,'98,'00,'02,'05, S'09,'11,'13,'15,'18] I presented a lecture and laboratory course to 15-30 graduate and undergraduate students on fundamental concepts and modern techniques in insect physiology. In S '09, '11 the course was equally co-taught with Dr. Angela Douglas. From 2013, I presented 6 lectures and 2 labs on sensory/neuro/muscular systems.

Insect Biology [ENT 2120; F '95,'97,'99,'01,'03,'06,'10,'12,'14,'15,'17] I present an introductory level lecture and laboratory course to 25-38 undergraduate and graduate students that focuses on taxonomic diversity and basic general entomology.

Introductory Biology [BioG 1101; F'07,'08,'09] This was a 2 semester course for 625-700 life science majors. I presented the first semester, which included macromolecules, energy transformation, cell biology, physiology, and behavior.

Seminar in Insect Behavior [ENT 6620]. This is a two hr/week graduate seminar course discussing papers from the primary literature in topical areas.
S '04. Spatial orientation of arthropods

Seminar in Insect Physiology [ENT 6850]. This is a two hr/week graduate seminar course discussing papers from the primary literature in topical areas.
S '07. Optimal design of sensory systems
S '00. Sensory biology of arthropods.
S '94. Physiology of parasites and pathogens in arthropods

Current Topics in Entomology [ENT 7670; F '99, '00] I coordinated and lectured in this one hr/week seminar course for 6-10 first year graduate students. Faculty from the Field of Entomology led a discussion of papers from the primary literature in their areas of expertise.

Guest lectures. Every year I give guest lectures in several courses from the following:
ENT 2010 (Alien Empire), ENT 3150 (Spider Biology), ENT 3250 (Insect Behavior),
ENT 3350 (Naturalist Outreach), AMST 2000 (Intro to Visual Studies)

Summer Bug Camp for Teens (Aug '15). This was a day camp for children aged 13-16 in which I presented a daily mix of classroom, laboratory, and field exposure to aspects of introductory entomology, including field, forest, stream and nocturnal habitats.

Cornell Institute for Biology Teachers

Each year for the past 6 years, I lead about 20 adult teachers on a local field insect collecting trip and then indoor session on insect identification as part of a larger project with other instructors to map the diversity of *Wolbachia* strains in insects.

Cornell Adult University

Natural History of the Finger Lakes. Summer 2019. This will be a week-long lecture, lab, and field course for adults on geology, plants, and animals of our region.

The Way Bugs Work. Summer 2002, 2003, 2004, 2006. Co-Instructor with E. Richard Hoebeke in a week-long lecture, lab, and field course for adults on general entomology.

Faculty leader for off-campus ecotours. Dr. Linda Rayor and I present natural history lectures and lead field trips for groups of adults. Belize/Guatemala 2019. Arizona 2018, Brazil 2013, Alaska 2011, Galapagos Is. & Ecuador 2010, Panama 2008, Tanzania 2006, 2007, Wyoming 2003.

New York State Master Naturalists. At Arnot Forest, Newfield NY, I present half-day indoor/outdoor workshops run by the Cornell Dept. Natural Resources to groups of about 20 adults seeking certification as Master Naturalists on general biology of insects or specific groups, such as butterflies or dragonflies/damselflies.

Workshops: 2011 (1), 2012 (2), 2013 (2), 2014 (1), 2015 (1), 2016 (1), 2017 (1), 2018 (1)

High Jump Chicago. 2010. This was a 3-day workshop managed by the Cornell Public Service Center. I presented hands-on lessons for 4 classes of 15 each at risk middle school children in basic insect biology and neurobiology.

OTHER ORGANIZATIONS (during my time at Cornell)

Cayuga Nature Center, Ithaca, NY. Fourth of July Butterfly Count 1994-2004, 2006. Half-day introduction to biology and conservation of Lepidoptera for the general public.

Marine Biological Laboratory, Woods Hole, MA, 1988 - 1994. Co-instructor in summer graduate-post-doc course "Neural Systems and Behavior". Dr. Alexander Borst and I presented behavioral, neurophysiological, and computer modeling exercises on visual motion perception.

INTERNATIONAL SYMPOSIUM ORGANIZATION

"Are sensory systems optimally organized?", VIII Int. Cong. Neuroethology. Vancouver, Canada, Aug 2007 (with Dr. John Miller)

"Comparative neuroethology of visually-guided behavior of arthropods", III Int. Cong. Neuroethology. Montréal, Canada, Aug 1992 (with Dr. Alexander Borst)

PUBLICATIONS

INVITED SCIENTIFIC PUBLICATIONS

Gilbert, C. 2018. Testing cognitive function requires understanding of natural history, p.388, In: Field and Laboratory Methods in Animal Cognition: A Comparative Guide, (Eds.) Bueno-Guerra, N. and Amici, F., Cambridge University Press

Gilbert, C. 2013. Brain Connectivity: Revealing the fly visual motion circuit. *Current Biology* 23: R851-R853

Gilbert, C. and D.B. Zurek. 2012. Visual neuroscience: How flies segregate moving objects from the optic flow field. *Current Biology* 22: R565-R567.

Gilbert, C. 2008. Visual neuroscience: Molecular approaches elucidate motion detecting circuitry. *Current Biology* 18: R745-R748.

Gilbert, C. and L.P.S. Kuenen. 2008. Multimodal integration: Visual cues help odor-seeking flies straighten up and fly right. *Current Biology* 18:R295-R297.

Gilbert, C. 2007. Hypercomplex cells in the arthropod visual system. *Current Biology* 17: R412-R414.

REFERREED SCIENTIFIC PUBLICATIONS (undergraduate co-authors are underlined)

36. Zurek, D.B. Perkins, M.Q., and **C. Gilbert**. 2014. Dynamic visual cues induce jaw opening and closing by tiger beetles during pursuit of prey. *Biology Letters* 10(11): 20140760.
35. Villarreal, S.M. and **C. Gilbert**. 2014. Male *Scudderia pistillata* katydids defend their acoustic duet against eavesdroppers. *Behavioral Ecology and Sociobiology* 68: 1669–1675.
34. Kuenen, L.P.S. and **C. Gilbert**. 2014. Visual ground pattern modulates flight speed of male Oriental Fruit Moths. *Physiological Entomology* 39: 271-279.
33. Haselsteiner, A., **C. Gilbert**, and J. Wang. 2014. Tiger beetles pursue prey using a proportional control law with a delay of one half stride. *Jour. Roy. Soc. Interface* 11: 20140216.
32. Kuenen, L.P.S., **C. Gilbert**, J. Siegel. 2014. Flying slower: Floor pattern object size affects orthokinetic responses during moth flight to sex pheromone. *Jour. Insect Behavior* 27: 581-592.
31. Zurek, D.B. and **C. Gilbert**. 2014. Static antennae act as locomotory guides that compensate for visual motion blur in a diurnal, keen-eyed predator. *Proc. Roy. Soc. Lond. B* 281: 20133072
30. Villarreal, S.M. and **C. Gilbert**, 2013. Female acoustic reply to variation in the male call in a duetting katydid, *Scudderia pistillata*. *Behaviour*, 150:525-546.
29. Villarreal, S.M. and **C. Gilbert**, 2011. The unique counting call of a katydid, *Scudderia pistillata* (Tettigoniidae: Phaneropterinae). *Anna. Entom. Soc. Amer.* 104(5):945-951.
28. **Gilbert, C.** and M.P. Kim. 2007. Effects of male age and cervical proprioceptors on sexual aerial pursuit by male flesh flies, *Neobellieria bullata* (Diptera: Sarcophagidae). *Jour. Insect Behavior*, 20:427-435.
27. Layne, J., P.W. Chen, and **C. Gilbert**. 2006. The role of target elevation in prey selection by tiger beetles (Carabidae: *Cicindela* spp.). *J. Exp. Biol.* 209:4295-4303.
26. Krans, J., **C. Gilbert**, and R. Hoy, 2006. Teaching insect retinal physiology with newly designed, inexpensive micromanipulators. *Adv. Physiol. Educ.* 30:254-261.
25. Paulk, A.C. and **C. Gilbert**. 2006. Proprioceptive encoding of head position in the black soldier fly, *Hermetia illucens* (L.) (Stratiomyidae). *J. Exp. Biol.* 209:3913-3924.
24. **Gilbert C.** and C. Klass. 2006. Decrease in geographic range of the Finger Lakes Brood (Brood VII) of the periodical cicada (Homoptera: Cicadidae: *Magicicada* spp.). *Jour. New York Entomol. Soc.* 114(1-2):78-85.
23. **Gilbert, C.** and E. Bauer, 1998. Resistance reflex that maintains upright head posture in the fleshfly *Neobellieria bullata* (Sarcophagidae). *Jour. Exp. Biol.* 201: 2735-2744.
22. **Gilbert, C.** 1997. Visual control of cursorial prey pursuit by tiger beetles (Cicindelidae). *Jour. Comp. Physiol. A* 181:217-230.
21. **Gilbert, C.** and R.S. Edgecomb, 1996. Description of a prosternal sensory organ in a wood gnat (Diptera: Anisopodidae). *J. KS. Entomol. Soc.* 69 (4) Suppl.: 61-66.
20. Abebe Leta, M., **C. Gilbert**, and R. Morse, 1996. Levels of haemolymph sugars and body glycogen of honeybees (*Apis mellifera* L.) from colonies preparing to swarm. *J. Insect Physiol.* 42: 239-245.
19. **Gilbert, C.**, W. Gronenberg, and N.J. Strausfeld, 1995. Oculomotor control in calliphorid flies: Head movements during activation and inhibition of neck motor neurons corroborates neuroanatomical predictions. *J. Comp. Neurol.* 361:285-297.
18. Strausfeld, N.J., B. Kong, J. Milde, **C. Gilbert**, and L. Ramaiah, 1995. Oculomotor control in calliphorid flies: GABAergic organization in heterolateral inhibitory pathways. *J. Comp. Neurol.* 361:298-320.
17. **Gilbert, C.** 1994. Form and function of stemmata in larvae of holometabolous insects. *Ann. Rev. Entomol.* 39: 323-349.
16. Matteson, N., I. Terry, A. Ascoli-Christenson, and **C. Gilbert**, 1992. Spectral efficiency of the western flower thrips *Frankliniella occidentalis*. *J. Insect Physiol.* 38:453-459.
15. Strausfeld, N.J. and **C. Gilbert**, 1992. Small-field neurons associated with oculomotor control in muscoid flies: cellular organization. *J. Comp. Neurol.* 316:56-71.
14. **Gilbert, C.** and N.J. Strausfeld, 1992. Small-field neurons associated with oculomotor and

- optomotor control in muscoid flies: functional organization. *J. Comp. Neurol.* 316:72-86.
13. **Gilbert, C.** and N.J. Strausfeld, 1991. Functional organization of male specific visual neurons in flies. *J. Comp. Physiol.* 169:395-411.
 12. **Gilbert, C.**, D. Penisten, and R.D. DeVoe, 1991. Discrimination of visual motion from flicker by identified neurons in the medulla of the fleshfly *Sarcophaga*. *J. Comp. Physiol.* 168:653-673.
 11. **Gilbert, C.** 1990. Membrane conductance changes associated with the response of motion sensitive insect visual neurons. *Zeit. Naturforsch.*, 45c:1222-1224.
 10. **Gilbert, C.** 1989. Visual determinants of escape in tiger beetle larvae (Cicindelidae). *J. Insect Behav.* 2:557-574.
 9. Rayor, L.S., A. Brody, and **C. Gilbert**, 1987. Hibernation in Gunnison's prairie dog. *J. Mammal.* 68:147-150.
 8. **Gilbert, C.** 1986. A morphological and cinematographic analysis of tiger beetle predatory behavior (Carabidae: Cicindelinae). In: P. den Boer, M.L. Luff, D. Mossakowski, and F. Weber (Eds.), *Carabid Beetles, their adaptations and dynamics*, pp.97-111. G. Fischer Verlag, Stuttgart, 551 p.
 7. **Gilbert, C.** and L.S. Rayor, 1985. Predatory behavior of spitting spiders (Araneae: Scytodidae) and the evolution of prey wrapping. *J. Arachnol.*, 13:231-241.
 6. **Gilbert, C.** and L.S. Rayor, 1983. First record of Mantisfly (Neuroptera: Mantispidae) parasitizing a spitting spider (Scytodidae). *J. KS Entomol. Soc.* 56:578-580.
 5. Wetzel, M.J. and **C. Gilbert**, 1981. Oligochaeta (Earthworms). In: *Guide to Freshwater Invertebrates of the Midwest*. KS State Biol. Surv. Tech. Bull. 11:15-22.
 4. Wetzel, M.J. and **C. Gilbert**, 1981. Hirudinea (Leeches). In: *Guide to Freshwater Invertebrates of the Midwest*. KS State Biol. Surv. Tech. Bull. 11:9-14.
 3. Wetzel, M.J., **C. Gilbert**, and M.B. Dubois, 1981. Introduction to the non-arthropod groups. In: *Guide to Freshwater Invertebrates of the Midwest*. KS State Biol. Surv. Tech. Bull. 11:4-8.
 2. **Gilbert, C.** 1980. New records of Kansas Hydrophilidae: *Epimetopus*, *Helochares*, *Hydrochus*, *Laccobius*, and *Tropisternus* (Insecta: Coleoptera). *KS State Biol. Surv. Tech. Bull.*, 9:54-59.
 1. **Gilbert, C.** 1979. New records of Kansas Hydrophilidae (Insecta: Coleoptera). *KS State Biol. Surv. Tech. Bull.* 8:23-30.

POPULAR ARTICLES

- Gilbert, C.** and Ditner, J. 2018. Creatures that glow in the night. *New York Conservationist*, 72(6): 17-20.
- Rayor, L.S. and **Gilbert, C.** 2007. Common Spiders of New York. *New York Conservationist*, 61(6): 15-18.
- Gilbert, C.** 2006. You gotta have heart(s). *The Ithaca Journal*, 18 January, p10A.

BOOK REVIEWS

- Gilbert, C.** 2013. *A World of Insects*. The Harvard University Press Reader, (Eds.) R. Cardé and V. Resh, 2012. *Quarterly Review of Biology*, 88:358-359
- Gilbert, C.** 1999. "Neurons, Networks, and Motor Behavior". (Eds) P.S.G. Stein, S. Grillner, A.I. Selverston, D.G. Stuart. 1997. *BioScience*, 49 (2): 156-158.

MANUSCRIPTS SUBMITTED OR IN PREPARATION

- Rayor, L.S., **Gilbert, C.**, Yeates, D.K., J. Rodriguez. Egg sac parasitoids (Diptera: Chloropidae; Neuroptera: Mantispidae) and predators (Hymenoptera: Pompilidae) on Australasian huntsman spiders (Sparassidae): Impacts on spider populations over time. *Austral*

Entomology (submitted)

Russell, A. and **C. Gilbert**. Serial homology in the coxal proprioceptive-motor system in a flesh fly (Diptera: Sarcophagidae) (for Brain, Behavior, and Evolution)

Gilbert, C., and A. Shah. Dynamics of visual perception and UV sexual signaling in orange sulphur butterflies (Pieridae: *Colias eurytheme*) (for Proc Roy Soc Lond B)

Rayor, L.S. and **C. Gilbert**, *SpiderWatching*. Book length manuscript on behavior of spiders currently under contract with Harvard University Press (expected Summer 2019)

ABSTRACTS & PAPERS PRESENTED AT SCIENTIFIC MEETINGS (presenter, undergraduate)

- 2018 The long and short of it: Spatial cognition of detours to prey by jumping spiders. 13th Intl. Cong. Neuroethology, Brisbane, Australia, July (**Cole Gilbert**, Madeleine Q. Perkins, Leeah Richardson)
Assassin bug *Platymeris biguttatus* (Hemiptera: Reduviidae) attacks prey with stereotyped bite sequence while neurotoxic saliva rapidly disrupts escape response. 13th Intl. Cong. Neuroethology, Brisbane, Australia, July (**Kristianna M. Lea**, Ann R. Dunn, Cole Gilbert, Linda S. Rayor)
- 2017 Generalist assassin bug, *Platymeris biguttatus* (Reduviidae), targets nervous system escape circuitry of its cockroach prey and supports the “locomotor ganglia hypothesis” developed for specialist wasp predators. Entomological Society of America, Denver, CO, Nov, **Cole Gilbert**, Kristianna M. Lea, Ann R. Dunn, Linda S. Rayor
Physiological and behavioral adaptations for group-living in prolonged subsocial huntsman spiders (Sparassidae). Entomological Society of America, Denver, CO, Nov, **Linda S. Rayor**, Marissa G. Cardillo, Cole Gilbert, and Elizabeth Murray
- 2016 Visual scanning by the principal eyes of freely moving jumping spiders. International Congress of Arachnology, Denver, CO, July (**Invited speaker, Cole Gilbert**, Madeleine Q. Perkins, Daniel B. Zurek)
Spatial cognition in jumping spiders: Assessment of path length to prey and vantage point. International Congress of Arachnology, Denver, CO, July (Madeleine Q. Perkins, **Cole Gilbert**)
- 2015 Target image expansion and contraction during visually-guided pursuit of prey induce jaw opening and closing by tiger beetles. Society for Integrative & Comparative Biology, W. Palm Beach, FL, Jan (**Cole Gilbert**, Madeleine Q. Perkins, Daniel B. Zurek)
Visual scanning by retinal movements of freely behaving jumping spiders. hhmi Janelia Conference: Insect Vision, Janelia Farm, VA, Apr (**Invited speaker, Cole Gilbert**, Daniel B. Zurek, Madeleine Perkins)
- 2014 An insight into situational gaze movements of jumping spiders. 11th Intl. Cong. Neuroethology, Sapporo, Japan, Aug (Daniel Zurek, **Cole Gilbert**)
Dynamic visual cues trigger jaw opening and closing by tiger beetles during pursuit of prey. J.B. Johnston Club, Washington DC, Nov (**Cole Gilbert**, Madeleine Q. Perkins, Daniel B. Zurek)
Change of gaze by retinal movements during locomotion by jumping spiders. Society for Neuroscience, Washington DC, Nov (**Cole Gilbert**, Daniel Zurek)
- 2013 Running blind: Antennae are necessary and sufficient for obstacle negotiation by tiger beetles. Animal Behavior Society, Boulder, CO, July, (**Daniel Zurek**, Cole Gilbert)
Visual guidance of prey pursuit by tiger beetles. Janelia Conference: Dynamics of Prey Capture and Escape. March, hhmi Janelia Farm, VA (**Invited speaker, Cole Gilbert**, Andreas Haselsteiner, Jane Wang)
A test of the hypothesis of depressed metabolic rate as an adaptation for group living in social sparassid and eresid spiders. 19th Intl Arachnology Cong., Kenting, Taiwan, June, (**Marissa Cardillo**, Linda Rayor, Cole Gilbert, Carolyn LaRow)
- 2012 Closed loop visual guidance of prey pursuit by tiger beetles. 10th Intl. Cong. Neuroethol, Aug, College Park, MD (**Cole Gilbert**, Andreas Haselsteiner, Jane Wang)

- Dynamic Duet: Acoustic and behavioral dynamics of the katydid *Scudderia pistillata*, June, Animal Behavior Society, Albuquerque, NM (**Susan Villarreal**, Cole Gilbert)
- Acoustic and behavioral interactions between male and female dueting katydids. Entomological Society of America, Eastern Branch, March, Hartford, CT (**Susan Villarreal**, Cole Gilbert)
- 2011 1 pulse, 2 pulse, 3 pulse, 4: Acoustic communication in a dueting katydid, *Scudderia pistillata*. 13th Intl. Invertebrate Sound & Vibration, June, Columbia, MO (**Susan Villarreal**, Cole Gilbert)
- Female photoreceptor speed and perception of male courtship displays in orange sulphur butterflies (Pieridae: *Colias eurytheme*). Cornell Lepidoptera Symp., Oct (**Cole Gilbert**, Anosh Shah)
- 2010 A male you can count on: The complex call of male *Scudderia pistillata* and the acoustic tick response of the female. 9th Int. Cong. Neuroethology, Aug, Salamanca, Spain (**Cole Gilbert**, Susan Villarreal)
- Evolution of proprioceptive organs on the legs of flies. 9th Int. Cong. Neuroethology, Aug, Salamanca, Spain (**Avery Russell**, Angelique Paulk, Cole Gilbert)
- Blinding speed: Effects of relative motion on insect vision. 9th Int. Cong. Neuroethology, Aug, Salamanca, Spain (**Cole Gilbert**, John Layne)
- 2007 Stealthy tracking in satellite flies. Flying Insects and Robots Symposium, Monte Verita Switzerland, Aug (**Jochen Zeil**, Norbert Boeddeker, Nicole Carey, Cole Gilbert)
- Are sensory systems optimally designed? 8th Int. Cong. Neuroethology, July, Vancouver. (**Cole Gilbert**)
- Size specific resting metabolic rates and colony demographics set threshold prey requirements of colonies and populations of social huntsman spiders, *Delena cancerides*. Int. Soc. Arachnol., Sao Paulo, Brasil. Aug (**Linda S. Rayor**, Ariel Zimmerman, Eric Yip, Cole Gilbert)
- 2006 Vision on the run: Suboptimal spatio-temporal resolution of natural moving images by tiger beetles, Soc. Neurosci., Atlanta, Abstr. 351.10, (**Cole Gilbert**, John E. Layne)
- 2005 Spatio-temporal sampling of visual space by tiger beetles. Soc. Neurosci., Washington, D.C., Abstr. 295.21 (**Cole Gilbert**, John E. Layne)
- 2004 Proprioceptive encoding of head position in the black soldierfly, *Hermetia illucens* (L.) 7th Intl. Cong. Neuroethology, Aug, Copenhagen, Denmark (**Angelique Paulk**, Cole Gilbert)
- View from the cockpit of a fly: Visually-guided pursuit by male flies. 7th Intl. Cong. Neuroethology, Aug, Copenhagen, Denmark (**Cole Gilbert**, P. Olivier Zanen, John E. Layne)
- Regional variation in anisotropy of spatial sampling and filtering in tiger beetle eyes. 7th Intl. Cong. Neuroethology, Aug, Copenhagen, Denmark (**John E. Layne**, Cole Gilbert)
- Optical structure of visual space and prey selection in tiger beetles. Anim. Behav. Soc., July, Oaxaca, Mexico (**John E. Layne**, P.W. Chen, Cole Gilbert)
- How to chase wary wasps: Visual cues controlling target tracking in satellite flies. Aust. Soc. Study Anim. Behav., April, Adelaide, Australia (**Jochen Zeil**, Cole Gilbert)

INVITED PRESENTATIONS AT UNIVERSITIES, etc (last 10 years)

- 2017 University of Canterbury (Biological Sciences), National University of Singapore (Biological Sciences)
- 2015 Paleontology Research Institute (Darwin Days Panel)
- 2014 Richards-Hodson Lecture, University of Minnesota (Entomology)
- 2013 hhmi/Janelia Farm, Case Western Reserve (Biology)
- 2011 Trumansburg NY High School (Science Night)
- 2010 Harvard (Entomology), Paleontology Research Institute (Darwin Days Panel), Cornell (Machines & Organisms IGERT Group)
- 2008 University of Massachusetts (Entomology), University of Maryland (Neuroscience)
- 2007 Mt. Holyoke (Biology)
- 2006 Wells College (Science Colloquium), Ithaca College (Biology), Entomological Society of Washington DC
- 2005 Univ. Maryland (Neuroscience), Univ. Maryland – Baltimore County (Biology)
- 2004 NYS Agr. Exp. Sta. (Entomology), National Science Foundation (IBN)
- 2003 University of Arizona (Entomology), Arizona State University (Biology), Cornell University (Psychology)

2002 Australian National University (RSBS, Centre for Visual Science)
2001 Cornell University (Cayuga Bird Club), Cornell Institute for Biology Teachers
2000 University of Washington (Zoology)
1998 Arizona State University (Zoology), University of Arizona (Motor Control Group)
1997 Cornell University (Ecology and Systematics)

PROFESSIONAL AFFILIATIONS

International Society for Neuroethology
 Councilor (2016-2020)
 Developing Neuroethology Committee (2014 - present)
Society for Neuroscience
Society for Sigma Xi
Fulbright Association
Society for Integrative and Comparative Biology
Entomology Society of America

SERVICE (last 10 years)

2018 Cornell University:
 Department of Entomology:
 Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club, Space Committee
 Consultant: Australian National Museum, National Geographic
 Manuscript referee: Journal of Insect Behavior

2017 Cornell University:
 CALS Ad hoc Committee: promotion to Professor of the Practice
 Department of Entomology:
 Chair: Faculty Search Committee, Moser Professor of Arthropod Systematics
 Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club, Space Committee
 Consultant: NY Conservationist
 Manuscript referee: NY Conservationist

2016 Cornell University:
 Department of Entomology:
 Director of Undergraduate Studies, Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club, Space Committee
 Manuscript referee: Philosophical Transactions of the Royal Society,
 Journal of Comparative Physiology A

2015 Cornell University: Graduate School General Committee
 Office of Undergraduate Biology: Executive Committee
 Department of Entomology:
 Director of Undergraduate Studies, Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club, Space Committee
 Manuscript referee: Journal of Undergraduate Neurobiology Education,
 MIT Press (book proposal on Insect Conservation)
 Consultant: National Geographic

2014 Cornell University: Graduate School General Committee
 Office of Undergraduate Biology: Executive Committee
 Department of Entomology:
 Director of Undergraduate Studies, Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club
 Manuscript referee: Frontiers in Behavioral Neuroscience, Nature Reviews Neuroscience

- Consultant: Current Biology, National Geographic Kids, First Big Book of Bugs;
New Republic, New York Times Science
- 2013 Cornell University: Graduate School General Committee
Office of Undergraduate Biology: Executive Committee
Department of Entomology:
Director of Undergraduate Studies, Curriculum & Teaching Committee,
Faculty Advisor Undergraduate Entomology Club
Manuscript referee: Current Biology (2), Journal of Experimental Biology
Consultant: NY Conservationist, Scholastic Magazine, BBC,
Periodical cicadas (Associated Press, BBC, Time Magazine,
NBC Nightly news, Popular Science, Times Herald Record (NY),
many others too numerous to mention)
- 2012 Cornell University: Graduate School General Committee
Office of Undergraduate Biology: Executive Committee
CALs Ad Hoc Committee on Promotion & Tenure (Chair)
Faculty Advisor for student club: LOL
Department of Entomology:
Director of Undergraduate Studies, Curriculum & Teaching Committee,
Faculty Advisor Undergraduate Entomology Club
Manuscript referee: Frontiers in Neural Circuits, Current Biology (2), Animal Behaviour,
Journal of Experimental Biology (2), Entomologia Experimentalis et Applicata
Consultant: Maxim, Nat. Geog. Kids, Springer Pub. Co. Book on Grasshoppers,
Radio WNYC on air interview
- 2011 Cornell University: Graduate School General Committee
Office of Undergraduate Biology: Executive Committee
Department of Entomology:
Director of Undergraduate Studies, Curriculum & Teaching Committee,
Faculty Advisor Undergraduate Entomology Club
Manuscript referee: Proc. R. Soc. Lond B.
National Science Foundation: ad hoc reviews (3), BIO-IOS; CNIC; CISE-IIS
Editorial Board (Neurobiology specialty): BioScience
Consultant: Sinauer Pub. Co. Introductory Biology text, HarperCollins Pub Co eBook,
National Geographic Kids Magazine (3), NY Conservationist (5),
Syracuse Post-Standard
- 2010 Cornell University: Office of Undergraduate Biology: Executive Committee,
Hughes Fellowship Selection Committee
Department of Entomology:
Director of Undergraduate Studies Curriculum & Teaching Committee,
Faculty Advisor Undergraduate Entomology Club
Manuscript referee: Current Biology, Science, PNAS
National Science Foundation: ad hoc review of grant application for BIO-IOS
US Air Force Office of Scientific Research: ad hoc review of grant application
Editorial Board (Neurobiology specialty): BioScience
Consultant: Sinauer Pub. Co. Introductory Biology text, BBC Wildlife Magazine
NY Conservationist, National Geographic Kids magazine
- 2009 Cornell University: Office of Undergraduate Biology: Introductory Biology Committee,
Hughes Fellowship Selection Committee
Department of Entomology:
Director of Graduate Studies; Curriculum & Teaching Committee,

- Faculty Advisor Undergraduate Entomology Club
 Editorial Board (Neurobiology specialty): BioScience
 Manuscript referee: Current Biology (4), Journal of Experimental Biology,
 Journal of comparative Physiology A
 National Science Foundation: ad hoc review for BIO-IOS
 Consultant: Nat. Geog. Kids magazine, Sinauer Pub. Co. Introductory Biology text
- 2008 Cornell University: Office of Undergraduate Biology: Introductory Biology Committee
 Hughes Fellowship Selection Committee,
 Department of Entomology:
 Director of Graduate Studies; Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club
 Editorial Board (Neurobiology specialty): BioScience
 Manuscript referee: Current Biology, Proceedings of the Royal Society London (2), PLoS
 Entomology Society of America: Judge in student paper competition (Eastern Branch)
- 2007 Cornell University: Office of Undergraduate Biology: Introductory Biology Committee
 Hughes Fellowship Selection Committee,
 Department of Entomology:
 Director of Graduate Studies; Curriculum & Teaching Committee,
 Faculty Advisor Undergraduate Entomology Club
 Editorial Board (Neurobiology specialty): BioScience
 National Science Foundation: BIO-IOS workshop neuroscience reorganization,
 ad hoc review for BIO-IOS
 Manuscript referee: Current Biology (3), Journal of comparative Physiology A,
 Arthropod Structure & Development
 Canadian NSERC: Discovery Grant ad hoc referee
 Air Force Office of Scientific Research – grant reviewer
- 2006 National Science Foundation: Advisory Panel – Frontiers in Biological Research;
Chair, Site Visit Team, Science & Technology Center (Behavioral
 Neuroscience - Atlanta)
 Cornell University: Office of Undergraduate Biology: Introductory Biology Committee,
 Senior Instructor Search Committee; Hughes Fellowship Selection
 Committee
 Department of Entomology:
 Curriculum & Teaching Committee, Faculty Advisor Undergraduate
 Entomology Club
 Department of Neurobiology & Behavior: Molecular Behavioral Ecology Search Committee
 Editorial Board (Neurobiology specialty): BioScience
 Manuscript referee: Journal of Insect Physiology (2), Journal of Experimental Biology (2),
 Current Biology, Journal of Comparative Physiology A,
 Sinauer Press (Introductory Biology textbook)
 Canadian NSERC: Discovery Grant ad hoc referee
 Consultant: Ranger Rick Magazine, CRC Press (Insect Physiology text book),
- 2005 National Science Foundation: Site Visit Team, Science & Technology Center
 (Behavioral Neuroscience - Atlanta)
 Cornell University: Office of Undergraduate Biology: Introductory Biology Committee
 Department of Entomology:
 Curriculum & Teaching Committee
 Department of Neurobiology & Behavior: Chemical Ecology Search Committee
 Editorial Board (Neurobiology specialty): BioScience

Manuscript referee: Proceedings of the National Academy of Sciences (USA),
Proceedings of the Royal Society of London
Consultant: HarperCollins (Book: Extreme Animals), NY Conservationist

- 2004 Cornell University: Molecular & Chemical Ecology Search Committee
Cornell University Press: Science Advisory Board
Office of Undergraduate Biology: Introductory Biology Committee,
Curriculum Committee
College of Agriculture & Life Sciences: Curriculum Committee
Department of Entomology:
Executive Committee, Curriculum and Teaching Committee (Chair),
Graduate Admissions Committee
Editorial Board (Neurobiology specialty): BioScience
Board of Directors: Cayuga Nature Center
National Science Foundation: Ad Hoc referee, IBN-Animal Behavior; IBN-Computational
Neuroscience
Manuscript referee: Journal of Experimental Biology (2), Arthropod Structure and
Function, Cell & Tissue Research, Princeton University Press (Entomology text
prospectus)
Consultant: BBC, Ithaca Radio Hour (WEOS), NEWS 10 TV (Syracuse)
- 2003 Cornell University: Molecular & Chemical Ecology Search Committee
Cornell University Press: Science Advisory Board
Office of Undergraduate Biology: Curriculum Committee
College of Agriculture & Life Sciences: Curriculum Committee
Department of Entomology:
Curriculum and Teaching Committee (Chair); Graduate Admissions Committee
Editorial Board (Neurobiology specialty): BioScience
Board of Directors: Cayuga Nature Center
Manuscript referee: Journal of Experimental Biology
Consultant: Audubon Magazine, Associated Press, BioPhotonics, Der Spiegel,
Natural History New Zealand, Xerces Society
- 2002 Cornell University: Molecular & Chemical Ecology Search Committee
Cornell University Press: Science Advisory Board
Office of Undergraduate Biology: Curriculum Committee
Agriculture Experiment Station: Ad Hoc referee, Hatch/ McIntire-Stennis proposal
College of Agriculture & Life Sciences: Curriculum Committee
Department of Entomology:
Curriculum and Teaching Committee (Chair),
Graduate Admissions Committee
Editorial Board (Neurobiology specialty): BioScience
Board of Directors: Cayuga Nature Center
National Science Foundation: Ad Hoc referee, IBN-Animal Behavior
Manuscript referee: Journal of Neuroscience Methods, Journal of Comparative
Physiology, Journal of Experimental Biology, Vision Research
Consultant: BBC, National Public Radio, Science, Audubon magazine
2001. Cornell University: Howard Hughes Scholarship Selection Committee
College of Agriculture & Life Sciences: Curriculum Committee
Department of Entomology:
Curriculum and Teaching Committee (Chair), Graduate Admissions
Committee Faculty Advisor Entomaniac (undergraduate organization),
Editorial Board (Neurobiology specialty): BioScience

Board of Directors: Cayuga Nature Center
National Science Foundation: Ad Hoc referee, IBN-Computational Neuroscience,
IBN-Animal Behavior
Manuscript referee: BioMed Central, Journal of Insect Physiology, Journal of
Hymenoptera Research, Journal of Experimental Biology (2),
Brain Behavior & Evolution
Consultant: Audubon Magazine, Wild TV

2000. Cornell University: Howard Hughes Scholarship Selection Committee
Department of Entomology:
Curriculum and Teaching Committee (Chair)
Faculty Advisor Entomaniac (undergraduate organization),

Editorial Board (Neurobiology specialty): BioScience
Board of Directors: Cayuga Nature Center
National Science Foundation: Ad Hoc referee, IBN-Computational Neuroscience,
IBN-Animal Behavior
Manuscript referee: Animal Behaviour, Journal of Neurophysiology,
Journal of Insect Physiology
Consultant: Natural History New Zealand, Harper's Magazine

1999. Cornell University: Howard Hughes Scholarship Selection Committee
Department of Entomology:
Curriculum and Teaching Committee, Faculty Advisor Jugatae (graduate) and
Entomaniac (undergraduate organization),
Editorial Board (Neurobiology specialty): BioScience
National Science Foundation: Ad Hoc referee, IBN-Computational Neuroscience
Manuscript referee: Journal of Computational Neuroscience, Journal of
Neurophysiology, Journal of Comparative Neurology (2),
Harvard University Press (book length manuscript on neurobiology),
Animal Behaviour (2)

1998. Department of Entomology:
Curriculum and Teaching Committee, Griswold Award Selection
Committee, Jugatae Advisor (Graduate Student Organization)
Editorial Board (Neurobiology specialty): BioScience
National Science Foundation: Ad Hoc referee, IBN-Computational Neuroscience (2)
Manuscript referee: Science, Journal of Comparative Neurology (2),
WCB/McGraw-Hill "The Science of Entomology" textbook, 5th ed.
Consultant: AAAS radio show, ABC-TV Kidzine

1997. Cornell University: Undergraduate Research Forum: Session moderator
Department of Entomology:
Curriculum and Teaching Committee, Griswold Award Selection
Committee, Jugatae Advisor (Graduate Student Organization),
Cornell Agricultural Experiment Station: Ad Hoc referee, Hatch/McIntire-Stennis
proposals
National Science Foundation: Ad Hoc referee, IBN-Animal Behavior (2),
IBN-Behavioral Neuroscience
Manuscript referee: Journal of Computational Neuroscience (2), Visual
Neuroscience, Transactions of the American Society of Agricultural
Engineers, Entomologia Experimentalis et Applicata
Consultant: BBC Insect Vision program

1996. Cornell University:
Department of Entomology
Curriculum & Teaching Committee, Griswold Award Selection Committee,
Jugatae advisor (Graduate Student Organization)
Manuscript referee: Journal of Insect Physiology, Vision Research, Journal of
Computational Neuroscience (2), Journal of Neurophysiology, Journal of
Comparative Neurology
1995. Cornell University:
Department of Entomology:
Executive Committee, Curriculum & Teaching Committee, Griswold Award
Selection Committee, Jugatae advisor (Graduate Student Organization)
Manuscript referee: Journal of Insect Physiology (3), Journal of Comparative
Neurology, Entomologia Experimentalis et Applicata
1994. Cornell University:
Department of Entomology:
Executive Committee, Curriculum & Teaching Committee, Griswold Award
Selection Committee Jugatae advisor (Graduate Student Organization)
Cayuga Nature Center: Program Committee
Manuscript referee: Journal of Insect Physiology, MIT Press (Book chapter)
Consultant: Boston Museum of Science - Science by Mail Program
1993. Cornell University:
Department of Entomology
Curriculum & Teaching Committee, Griswold Award Selection Committee
USDA-SBI: Ad Hoc referee
Manuscript referee: Neuroscience, MIT Press (Book on Insect Vision)
Consultant: Boston Museum of Science - Science by Mail Program
1992. Cornell University:
Department of Entomology:
National Science Foundation: Ad Hoc referee – IBN Animal behavior
Manuscript referee: Journal of Neurophysiology (2), Ecology
Consultant: Boston Museum of Science - Science by Mail Program