

Paul Andrew Moore

Laboratory for Sensory Ecology
Department of Biological Sciences
Bowling Green State University
Bowling Green, OH
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EDUCATION

- | | |
|------|---|
| 1991 | Boston University , Boston, Mass. Boston University Marine Program located at the Marine Biological Laboratory. Ph. D. in Marine Biology |
| 1986 | University of Michigan , Ann Arbor, Mich. Bachelor of Science (Cum laude) in Biological Oceanography |

PROFESSIONAL EXPERIENCE

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|----------------|---|
| 2002 – Present | Director, University Honors Program |
| 2001 – Present | Director, UMBS Stream Research Facility |
| 2003 – Present | Full Professor, Biology Department, Bowling Green State University |
| 2000 - 2002 | Director of the Center for Neuroscience, Mind & Behavior, Bowling Green State University |
| 1999 - 2003 | Associate Professor, Biology Department, Bowling Green State University |
| 1994 - 1999 | Assistant Professor, Director of Marine Program, Biology Department, Bowling Green State University |
| 1992 - 1994 | Research Associate, Dr. Bruce Bryant, Monell Chemical Senses Center |
| 1990 - 1992 | Post-Doctoral Fellow, Dr. Greg Gerhardt, University of Colorado Health Science Center |

GRANTS (OVER 1.25 MILLION IN GRANT FUNDS)

- | | |
|----------------|---|
| Funded 4/18/02 | PI, Incentive proposal to the Ohio Board of Regents \$175,000 |
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- Funded 3/1/02-2/01-03 Co-PI NSF (Animal Behavior), with Dr. Robert Huber, REU supplement to “The behavioral mechanisms of hierarchy formation and the neurochemical correlates of aggression and dominance” \$10,000
- Funded 7/1/02 – 6/06 NSF (Sensory Systems), "Collaborative Research: Chemical orientation in turbulent environments above natural stream substrates: the role of bed roughness and turbulence structure on search mechanisms" with Dr. John Crimaldi (U of Colorado), \$660,000, 48 months (\$360,000 to Colorado, \$300,000 to BGSU)
- Funded TIE grant from BGSU, \$50,000.
- Funded Co-PI with Dr. Robert Huber, NSF (Animal Behavior), REU supplement, “The behavioral mechanisms of hierarchy formation and the neurochemical correlates of aggression and dominance”, \$5,000, 12 months
- 3/1999-2/2002 Co-PI with Dr. Robert Huber, NSF (Animal Behavior), “The behavioral mechanisms of hierarchy formation and the neurochemical correlates of aggression and dominance”, \$210,000, 36 months (AB-9874608)
- Funded 1997 Alumni Summer Research Fellowship Award, \$7,839
- 4/1996-4/2000 NSF (Sensory and Motor Systems), Career Award, “The physics of chemoreception: A study on the interactions of fluid flow, chemosensory morphology, and chemical dynamics”, \$227,000, 48 months (IBN-9514492)
- 5/1994-5/1995 NOAA/NURP, “Chemical orientation in the marine environment: High resolution measurement of chemical signals and quantification of chemical orientation by benthic and pelagic organisms”, \$ 4,950, 12 months
- 6/1994-6/1997 NSF (Biological Oceanography), “Characterization of aquatic odor signals used for chemosensory orientation by marine crustaceans”, \$90,000, support period 3/1/94 - 2/28/97
- 2/1994-2/1995 NURP "High resolution measurement of aquatic signals used for chemical orientation of pelagic organisms" Support costs for submersible, travel, lodging, and small equipment from the Caribbean Marine Research Center 2/1/94-1/31/95

HONORS, AWARDS, APPOINTMENTS, FELLOWSHIPS

2006	Finalist for Master Teacher Award
1999	Takasago Award for Research in Olfaction
1997	Member of Roundtable discussion for House subcommittee on Science chaired by The Honorable Vernon Ehlers
1997	Outstanding Young Scholar Award, BGSU
1997	Alumni Association Research Fellowship, BGSU
1997	Joint appointment as Graduate Faculty in Psychology
1996	Departmental research award, BGSU Biology Department
1991	Mellon Post-Doctoral Fellowship at Scripps Institute of Oceanography (declined)
1991	NIH Drug Abuse Training Fellowship
1991	Belamarich Award to the Best Ph.D. thesis in Biology for Boston University
1989	Don Tucker Memorial Award (Best Student Presentation, Association of Chemoreception Sciences meeting)
1988	Presidential University Teaching Fellowship (awarded to Best Teaching Fellow at Boston University)
1986	Presidential University Graduate Fellowship

PEER-REVIEWED PUBLICATIONS

- 53.) Kominoski, J, Moore, P.A., Wetzel, R., and Tuchman, N. 2007. Elevated CO₂ alters leaf litter-derived dissolved organic carbon: effects on stream periphyton and crayfish preference. *Journal of the North American Benthological Society* (In Press).
- 52.) Belanger R.M., Ren X., McDowell K.E., Chang S., Moore P.A., Zielinski B.S. 2008. Sensory setae on the major chelae of the male crayfish, *Orconectes rusticus* (Decapoda, astacidae): Impact of reproductive state on function and distribution. *Journal of Crustacean Biology*. (In Press).
- 51.) Zulantz, T., Zulantz-Schneider, R.A, and **Moore, P.A.** 2007. Observing agonistic interactions alters subsequent fighting dynamics in the crayfish *Orconectes rusticus*. *Animal Behaviour*. (In Press).
- 50.) Simon, J.L., and **Moore, P.A.** 2007. Male-female communication in the crayfish *Orconectes rusticus*: the use of urinary signals in reproductive and non-reproductive pairings. *Ethology*. (In Press).

- 49.) Fero, K., Simon, J.L., Jourdie, V. and Moore, P.A. Moore. 2007. Ecological consequences of social dominance in the rusty crayfish, *Orconectes rusticus*. Behaviour 144:61-82.
- 48.) Bergman, D.A. Redman, C.N, Fero, K.C., Simon, J.L., and **Moore, P.A.** 2006. The impacts of flow on chemical communication strategies and fight dynamics of crayfish. Marine and Freshwater Behavior and Physiology. 39:245-258.
- 47.) Belanger, R.M. and **Moore P.A.** 2006. The use of the major chelae by reproductive male crayfish (*Orconectes rusticus*) for discrimination of female odours. Behaviour 143:713-731.
- 46.) **Moore, P.A.**, and Bergman, D.A. 2005. The smell of success and failure: the role of intrinsic and extrinsic chemical signals on the social behavior of crayfish. Integrative and Comparative Biology 45:650-657.
- 45.) Bergman, D.A., Martin, A.L., and **Moore, P.A.** 2005. The control of information flow by the manipulation of mechanical and chemical signals during agonistic encounters by crayfish, *Orconectes rusticus*. Animal Behavior. 70:485-496.
- 44.) Bergman, D. and **Moore, P.A.** 2005. The prolonged exposure to social odours alters subsequent interactions in crayfish (*Orconectes rusticus*). Animal Behavior 70:311-318.
- 43.) Adams, J.A., Tuchman, N.C., and **Moore, P.A.** 2005. Effects of CO₂-altered detritus on growth and chemically mediated decisions in crayfish (*Procambarus clarkii*). Journal of the North American Benthological Society 24:330-345.
- 42.) Bergman, D.A., and **Moore, P.A.** 2005. The role of chemical signals in the social behavior of crayfish. Chemical Senses 30:i305-i306.
- 41.) **Moore, P.A.** and Crimaldi, J. 2004. Odor landscapes and animal behavior: tracking odor plumes in different physical worlds. Journal of Marine Science. 49:55-64.
- 40.) Wolf, M.C., Voigt, R., and **Moore, P.A.** 2004. Spatial arrangement of odor sources modifies the temporal aspects of crayfish search strategies. Journal of Chemical Ecology 30:501-517.
- 39.) Kozlowski, C.P., Voigt, R., and **Moore, P.A.** 2003. Changes in odour intermittency influence the success and search behaviour during orientation in the crayfish (*Orconectes rusticus*). Marine and Freshwater Behavior and Physiology 36:97-110.
- 38.) Bergman, D.A., Kozlowski, C.P., McIntyre, J.C., Huber, R., Daws, A.G., and **Moore, P.A.** 2003. Temporal dynamics and communication of winner-effects in the crayfish, *Orconectes rusticus*. Behaviour 140:805-825.

- 37.) Adams, J.A., Tuchman, N.C., and **Moore, P.A.** 2003. Atmospheric CO₂ enrichment alters the chemical quality of leaf detritus: Impacts on foraging decisions of crayfish (*Orconectes virilis*). *Journal of the North American Benthological Society* 22:410-422.
- 36.) Bergman, D., and **Moore, P.A.** 2003. Field observations of agonistic behavior of two crayfish species, *Orconectes rusticus* and *Orconectes virilis*, in different habitats. *Biological Bulletin* 205:26-35.
- 35.) Adams, J.A., and **Moore, P.A.** 2003. Discrimination of conspecific male molt odor signals by male crayfish, *Orconectes rusticus*. *Journal of Crustacean Biology*. 23:7-14.
- 34.) Wolf, M.A., and **Moore, P.A.** 2002. The effects of the herbicide metolachlor on the perception of chemical stimuli by *Orconectes rusticus*. *Journal of the North American Benthological Society* 21:457-467.
- 33.) Daws, A.G., Grills, J., Konzen, K., and **Moore, P.A.** 2002. Previous experience alters the outcome of aggressive interactions between males in the crayfish, *Procambarus clarkii*. *Marine and Freshwater Behavior and Physiology* 35:139-148.
- 32.) Kraus-Epley, K.E., and **Moore, P.A.** 2002. The effects of antennal lesions on orientation behavior of the crayfish, *Orconectes rusticus*. *Chemical Senses*. 27: 49-55.
- 31.) Koehl, M.A.R., Koseff, J.R., Crimaldi, J.P., Cooper, T., McCay, M., Wiley, M.B., and **Moore, P.A.** 2001. Lobster sniffing filters the spatio-temporal information in a turbulent odor plume. *Science* Nov 30 2001: 1948-1951.
- 30.) Huber R, Panksepp JB, Yue Z & **P Moore**. 2001. Dynamic interactions of behavior and amine neurochemistry during acquisition and maintenance of social rank in crayfish. *Brain, Behavior and Evolution* 57:271-282.
- 29.) Sherman, M.L., and **Moore, P.A.** 2001. Chemical Orientation of Brown Bullheads (*Ameiurus nebulosus*) Under Different Flow Conditions. *Journal of Chemical Ecology* 27:2301-2318.
- 28.) Zulantz Schneider, R.A., Huber, R., and **Moore, P.A.** 2001. Individual and status recognition in the crayfish, *Orconectes rusticus*: The effects of urine release on fight dynamics. *Behaviour* 138:137-154.
- 27.) Tomba, A.M., Keller, T.A., and **Moore, P.A.** 2001. Foraging in complex odor landscapes: Chemical orientation strategies during stimulation by conflicting chemical cues. *Journal of the North American Benthological Society* 20:211-222.
- 26.) Keller, T., Tomba, A., and **Moore, P.A.** 2001. Orientation in complex chemical landscapes: Spatial arrangement of chemical sources influences crayfish food-finding efficiency in artificial streams. *Limnology and Oceanography* 46(2):238-247.

- 25.) Keller, T.A., and **Moore, P.A.** 2000. Context-specific behavior: crayfish size influences crayfish-fish interactions. *Journal of the North American Benthological Society* 19:344-351.
- 24.) **Moore, P.A.**, and Shao, K. 2000. An electrical circuit model of chemoreceptor cells based on adaptation and disadaptation time constants: implications for temporal filtering. *Materials Science and Engineering C*. 7:149-160.
- 23.) **Moore, P.A.**, Grills, J., and Schneider, R.W.S. 2000. Habitat specific signal structure for olfaction: an example from artificial streams. *Journal of Chemical Ecology* 26:565-584.
- 22.) Zulandt Schneider R.A. and **Moore, P.A.** 2000. Urine as a source of conspecific disturbance signals in the crayfish *Procambarus clarkii*. *Journal of Experimental Biology* 203:765-771.
- 21.) **Moore, P.A.**, and Grills, J. 1999. Chemical orientation to food by the crayfish, *Orconectes rusticus*: Influence by hydrodynamics. *Animal Behaviour* 58:953-963.
- 20.) Keller, T.A., and **Moore, P.A.** 1999. Effects of ontogeny and predator odors on prey behavior. *Marine and Freshwater Behavior and Physiology* 33:35-50.
- 19.) Zulandt Schneider, R., Schneider, R.W.S., and **Moore, P.A.** 1999. Recognition of dominance status by chemoreception in the crayfish, *Procambarus clarkii*. *Journal of Chemical Ecology* 25:781-794.
- 18.) **Moore, P.A.**, Fields, D.M., and Yen, J. 1999. Physical Constraints of Chemoreception in Foraging Copepods. *Limnology and Oceanography* 44:166-177.
- 17.) Rorabaugh, B., Meserve, L., and **Moore, P.A.** 1998. Effects of Dietary Lead and Cholesterol Supplementation on Hemolysis in the Sprague-Dawley Rat. *Ohio Journal of Science* 98:18-22.
- 16.) Schneider, R.W.S., Price, B.A., and **Moore, P.A.** 1998. Antennae morphology as a physical filter of olfaction: temporal tuning of the antennae of the honeybee, *Apis mellifera*. *Journal of Insect Physiology* 44:677-684.
- 15.) Schneider, R.W.S., Lanzen, J., and **Moore, P.A.** 1998. Boundary layer effect on chemical signal movement near the antennae of the Sphinx moth, *Manduca sexta*: temporal filters for olfaction. *Journal of Comparative Physiology A* 182 (3):287-305.
- 14.) **Moore, P.A.**, and Lepper, D.M.E. 1997. The role of chemical signals in the orientation behavior of the sea star, *Asterias forbesi*. *Biological Bulletin* 192:410-417.
- 13.) Bryant, B.P., and **Moore, P.A.** 1995. Factors affecting the sensitivity of the lingual trigeminal nerve to acids *American Journal of Physiology* 268:R58-65.

- 12.) Feigin, A.M., Nimoiya, Y., Bezrukov, S.M., Bryant, B.P., **Moore, P.A.**, Komai, M., Wachowiak, M., Teeter, J.G., Vodyanoy, I., and Brand, J.G. 1994. Enhancement of gustatory nerve fibers to NaCl and formation of ion channels by commercial novobiocin. *American Journal of Physiology* 266:C1165-1172.
- 11.) **Moore, P.A.** 1994. A model of adaptation and disadaptation in olfactory receptor neurons: implications for the coding of temporal and intensity patterns in odor signals. *Chemical Senses* 19:71-86.
- 10.) **Moore, P.A.**, Weissburg, M.J., Parrish, J.M., Zimmer-Faust, R.K., and Gerhardt, G.A. 1994. Spatial distribution of odors in simulated benthic boundary layer flows. *Journal of Chemical Ecology* 20:255-279.
- 9.) Feigin, A.M., Brand, J.G., Nimoiya, Y., Bryant, B.P., Bezrukov, S.M., **Moore, P.A.**, Vodyanoy, I., and Teeter, J.G. 1993. Effect of novobiocin on cation channel formation and enhancement of salt taste. *ISOT* 104-107.
- 8.) **Moore, P.A.**, Atema, J., and Gerhardt, G.A. 1992. The structure of environmental odor signals: from turbulent dispersion to movement through boundary layers and mucus, pp.79-83 *In: Chemical Signals in Vertebrates VI*. Doty, R.L. and Müller-Schwarze, D. (eds.). Plenum Press, N.Y.
- 7.) **Moore, P.A.**, Zimmer-Faust, R.K., BeMent, S.L., Weissburg, M.J., Parrish, J.M., and Gerhardt, G.A. 1992. Measurement of microscale patchiness in a turbulent aquatic odor plume using a semiconductor-based microprobe. *Biological Bulletin* 183:138-142.
- 6.) **Moore, P.A.**, Scholz, N., and Atema, J. 1991. Chemical orientation of the lobster, *Homarus americanus* in a turbulent odor plume. *Journal of Chemical Ecology* 17:1293-1307.
- 5.) **Moore, P.A.**, Atema, J., and Gerhardt, G.A. 1991. Fluid dynamics and microscale odor movement in the chemosensory appendages of the lobster, *Homarus americanus*. *Chemical Senses* 16:663-674.
- 4.) **Moore, P.A.**, and Atema, J. 1991. Spatial information in the three-dimensional fine structure of an aquatic odor plume. *Biological Bulletin* 181:408-418.
- 3.) Atema, J., **Moore, P.A.**, Madin, L. and Gerhardt, G.A. 1991. Subnose-I: Tracking odor plumes at 900 meters beneath the ocean surface. *Marine Ecology Progress Series* 74:303-306.
- 2.) **Moore, P.A.**, Gerhardt, G.A., and Atema, J. 1989. High resolution spatio-temporal analysis of aquatic chemical signals using microelectrochemical electrodes. *Chemical Senses* 14:829-840.
- 1.) **Moore, P.A.**, and Atema, J. 1988. A model of a temporal filter in chemoreception to extract directional information from a turbulent odor plume *Biological Bulletin* 174:355-363.

Book Chapters

- 3.) **Moore, P.A.** 2007. Agonistic behavior in freshwater crayfish: The influence of intrinsic and extrinsic factors on aggressive behavior and dominance In: Duffy and Thiel. Evolutionary ecology of social and sexual systems: Crustacea as models organisms. Oxford University Press.
- 2.) Schneider, R.W.S., and **Moore, P.A.** 2000. The physics of chemoreception revisited: How the environment influences chemically-mediated behavior. Pp. 159-176, in Biomechanics and Behavior. Domenici, P. and Full, R. editors.
- 1.) **Moore, P.A.**, and Gerhardt, G.A. 2000. Electrochemical sensors for *in situ* small-scale, fast temporal measurements of organic molecules in seawater. Pp. 211-225, in Chemical Sensors in Oceanography, Varney, M. (ed).

COURSES TAUGHT

Topic	Lectures /week	No. Of Semesters taught	Team taught with	University
Biological Oceanography	3	1		BGSU
Chemical Ecology	3	2	Paul Morris/ Dan Pavuk	BGSU
Chemosensory Biology	5	1	Jelle Atema	BU
Introduction to Critical Thinking	4	3		BGSU
Concepts in Biology (Honors): Biol H204	5	6		BGSU
Freshwater Ecology	2	1	Field Course at UMBS	UMBS
Fluid Dynamics for Biologists: Biol 780	1	2		BGSU
Grand Questions in Biology: Hhrs 250	3	2		BGSU
Great Thinkers in Biology: Biol 780	1	2		BGSU
Introduction to Critical Thinking: HNRS 201	3	2		BGSU
History of Biolo: Biol 780	1	1		BGSU
Life in the Sea: Biol 108	3	1		BGSU
Marine Biology: Biol 474/582	3	5		BGSU
Marine Field Trip: Biol 475	1	3		BGSU

Marine Closed Systems: Biol 370	1	2		BGSU
Myths of Evolution: Biol 680	1	1		BGSU
Neuroethology: Biol 419/580	3	1		BGSU
Philosophy of Science: Biol 780	1	4		BGSU
Sensory Biology: Biol 400	1	1		BGSU
Sensory Ecology: Biol 680	2	2		BGSU
Stream Ecology UMich 585	2	1	Field course at UMBS	UMBS

SOCIETIES

American Association for the Advancement of Science
 American Society for Limnology and Oceanography
 Animal Behavior Society
 Association for Chemoreception Sciences
 International Society of Neuroethology
 Society for Integrative and Comparative Biology
 Sigma Xi
 The Crustacean Society

UNDERGRADUATE STUDENTS

Bair, Angie. 1996. Individual recognition in crayfish.
 Bergner, Jenn. 2005-. Crayfish orientation behavior.
 Bester, Cathy. 1994. The biomechanics of flicking in lobsters.
 Brown, Jenn. 2002-2004. Observational learning in crayfish
 Christopher, Cathy. 1997-1999. Social Interactions in crayfish.
 Conin, Jodie. 2004-2005. The role of serotonin in crayfish aggression
 Cook, Michelle. 2002 – 2005. Urine and fight dynamics in crayfish.
 Cox, Becky. 2002 – 2004. Social behavior in crayfish.
 Dariano, Sarah. 2006-. Social behavior in crayfish.
 Ford, Alex. 1995. Hierarchical dynamics in crayfish populations.
 Grills, Jennifer L. 1995 - 1998. Social interactions and orientation behavior in crayfish.
 Hunker, Jenny. 1994. Electroreception in skates and rays.
 Jenkins, Katie. 2004-2005. The role of serotonin in crayfish aggression.
 Kelly, Cindy. 1994. The biomechanics of walking leg movement in lobsters.
 Konzen, Karen. 1994. The sensory biology of aquatic animals.
 Kothari, Deven. 1995-1996. Olfactory sampling in crayfish.
 Kozlowski, Corinne. 1999-2002. Social dynamics in crayfish.
 Kraus, Kim. 1998. Fluid dynamics of sniffing in crayfish.
 Krewson, Thomas. 1999. Biochemistry of social behavior.
 Lammers, Jennifer. 1995. Fluid flow through moth antennae.

Miller, Jon. 2004-2006. Crayfish neurochemistry.
 Miller, Ethan. 2004-2005. Crayfish neurochemistry.
 McIntyre, Jeremy. 1999-2002. Chemical orientation in larval crayfish.
 Paterson, Jon. 2004-2006. The role of serotonin in the social behavior of crayfish.
 Percival, Dan. 2007-.
 Peters, Natatlie. 2003-2006. The factors that influence social behavior in crayfish.
 Pradelski, Bethann. 2003-2006. The factors that influence social behavior in crayfish.
 Price, Brad. 1996. Boundary layer dynamics of bee antennae.
 Roberts, Steve. 1999-2002. Immunocytochemistry of crayfish eyestalks.
 Raburn, Brittany. 2003 - 2005. The role of serotonin in crayfish aggression.
 Ramsey, Sara. 2002-2004. Orientation behavior in crayfish.
 Salyer, Heather. 1994. Chemoreception and growth in echinoderms.
 Skrzyniecki, Brian. 1996. Orientation in crayfish in different stream habitats.
 Stalker, Cindy 1998. Predator-prey interactions mediated by chemical signals.
 Tome, Lee Anne. 1999-2000. Observational learning in crayfish.
 Valpey, Robin. 2006 – Learning in crayfish.
 Vasquez, April. 1997. Appendage use in crayfish.
 Zulant, Thomas. 2002 - 2006. Observational learning in crayfish.

UNDERGRADUATE HONORS THESIS

Andeson, Eric. 1998. Sensory biology of lobsters.
 Blank, Laurie. 1997. Biological and economic problems associated with human population growth.
 Januska, Mandy. 1998. Chemical identification of dominance signals in crayfish.
 Jaworski, Michael D. 1998. The case for atheism(s).
 McIntyre, Jeremy. 1999-2002. Chemical orientation in larval crayfish.

GRADUATE STUDENTS ADVISED (11 MS STUDENTS AND 7 PH.D STUDENTS)

PH.D. STUDENTS

Name	Year	Title	Post-Doc	Current Position
Julie Adams	2003	Chemical ecology of molting in the crayfish, <i>Orconectes rusticus</i>		Faculty at Ohio Northern
Rachelle Bellanger	2007	Neuroanatomy, physiology and sensory behavior of the major chelae in crayfish	Norm Stacey, University of Alberta	
Dan Bergman	2004	Winner-loser effects and its impacts on the social behavior of crayfish	University of Kentucky	Grand Valley State University
Kim Kraus-Epley	2003	Mechanisms of Orientation behavior in the crayfish <i>Orconectes rusticus</i>	University of Florida	Research faculty U of Florida
Kandice Fero	2008			
Xin Luan	2009			

Art Martin	2007	The role of chemical signals in the social dynamics of crayfish	Phillip Stoddard, Florida Interantional University	
Robb Schneider	2000	Behavioral and Physical Phenomena involved in the orientation flight of the male sphinx moth, <i>Manduca Sexta</i>		Research Chemist at Avery-Dennison
Becky Zulantt-Schneider	2000	Social comminucation through chemical signals: crayfish as a model system.		High School Science Teacher
Marilyn Sherman	2001	From Boundary Layer to Behavior: Chemical orientation in the brown bullhead (<i>Amieurus nebulosus</i>)	Peter Sorenson at University of Minnesota	Faculty at Florida Memorial University
Mary Wolf	2005	Encoding odor signals in the crayfish brain	Rich Satterlie, UNC-Wilmington	Research Faculty at UNC-Wilmington

M.S. STUDENTS

Name	Year	Title	Ph.D. School	Current Position
Cathy Bester	1997	Uptake of Amino Acids in Cultured and Freshly Isolated Zooxanthellae (Symbiodinium Bermudense): The Effects of Exposure to Exogenous Amino Acids on the Cellular Physiology of Symbiotic Algae.		Science Instructor Florida
Adam Jansen	2007			
Christine Johnstone	2007		U. of Louisiana at LaFayette	
Violaine Jourdie	2002	Social response of crayfish, <i>Orconectes rusticus</i> , populations to a habitat disturbance.		
Kari Long	2002	Recognition of maternal and gravid odors in juvenile crayfish		
Boyd Rorabaugh	1997	The Effects of Dietary Lead and Cholesterol Supplementation upon Hemolysis and Lipoproteins in the Sprague-Dawley Rat. (Co-advised with Lee Meserve).	Creighton	Case Western
Robb Schneider	1997	The Role of Physical Filters in Olfaction: Examples from Insects.		Research Chemist Avery Dennison
Lisa Shauver	1999	Visual versus chemical cues in attracting females in <i>Procambarus clarkii</i> .		University of Akron
Jodie Simon	2006	The role of urinary signaling in intersex communication in crayfish		Covance
Susan Stewart	1999	Interspecific mate choice in two species of crayfish.		
Rostern Tembo	2003	Behavioral response of mollies to sub-lethal thresholds of pH: simulated acid rain impacts on chemosensory behavior.	BGSU	
Abbie Tomba	1999	Mechanisms of Risk Assessment: Role of complex chemical cues in assessing food availability and predation.	Auburn University	
Lenka Urban	2004	Conditioned responses to odors and alarm signals in the crayfish	Yale University	
Susan Wilborn	2002	Boundary layer impacts on reception of chemical signals by blue crabs		
Mary Wolf	2001	The Effects of the Herbicide Metolachlor on the Perception of Chemical Stimuli by the Crayfish, <i>Orconectes rusticus</i>	BGSU	

SERVED ON GRADUATE COMMITTEES

Bekkedahl, Marni (Ph.D. psychology)

Clason, Todd (MS)

Dai, Wenjing (MS)

Davis, Chris (MS)

Francoeur, Steve (MS)
 Hienline, Julie (MS)
 Hall, Deb (MS)
 Johnson, Scott (MS)
 Laliberte, Gina (Ph.D.)
 Litteral, Randy (MS)
 Marr, Lont (MS)
 Pinney, Amy (MS)
 Pittman, K.J. (MS)
 Friedel, Lisa (Ph.D.)
 Smerk, Cari (M.S.)
 Stewart, Tim (Ph.D.)
 Landis, Jamie (Ph.D.)
 Visnyai, Rebecca (MS)
 Williams, Beth (Ph.D. University of Wisconsin, Milwaukee)
 Yannarell, Tony (MS)

INVITED SEMINARS AND LECTURES

Institution	Host	Number of Invitations and years	Number of Seminars G
Adrian College		1, 01	1
Boston University	J. Atema	2, 92, 94	2
Bowling Green State University	V. Bingman	2, 94, 96	2
Bucknell University	P. Humphries	1, 99	2
College of Wooster	D. Fraga	1, 00	1
Defiance College	H. Kassa	1, 95	1
Georgia Institute of Technology	D. Dusenbery, M. Weissburg	2, 97, 01	4
Georgia State University	C. Derby	2, 97, 00	2
Heidelberg College	B. Murray	1, 97	1
Hofstra University	P. Daniels	1, 93	1
Lawrence University	S. Richman	1, 90	1
Louisiana State University	J. Caprio	1, 92	1
Kalamazoo College	David Evans	1, 02	1
Michigan State University	R. Issacs	1, 98	1
Ohio State University	P. Curtis	1, 02	1
Ohio Northern University	J. Adams	1, 06	1
State University of New York, Stony Brook	A. Okubo	1, 93	1
Syracuse University	S. Pitnick	1, 98	1
University of Arizona	M. Willis	1, 96, 05	2
University of Findlay	G. Rife	1, 97	1
University of Michigan, Biological Station	R. Lowe	1, 95	1
University of Toledo	S. Goldman	1, 95	1
University of Windsor	B. Zielkinski	1, 01	1

PARTICIPATION IN SYMPOSIA AND WORKSHOPS

Invited Speaker, International Symposium on Olfaction and Taste, Kyoto, 2004
 Participant, Mechanics of Plants, Animals and their Environments, Engineering
 Foundation Conferences, Santa Barbara, CA, 1998 and 2000
 Co-director, Marine Biological Laboratory short course "Rapid measurement of
 Neurotransmitter in the Central Nervous System using In Vivo
 Electrochemistry", 1992
 Teaching Assistant, Marine Biological Laboratory Course: Measurement and
 Control of Chemical Stimuli, 1990
 International Workshop on Chemoreception in Aquatic Animals, Louisiana
 Universities Marine Consortium, August, 1988 (T. Marui and J. Caprio)

GRANTS, PAPERS, AND BOOKS REVIEWED

Editor Animal Behaviour, 7/06 – present, processed 2 manuscripts
 Reviewer for the 3rd edition of Castro and Huber, Marine Biology 3/00
 NOAA/NURC Grant UNC Wilmington, 7/26/95
 Grant for the Netherlands, 6/00
 NSF panel for Sensory Systems, 04/05, 8/05
 NSF grant for Animal Behavior, 03/26/01, 04/01/01, 04/03/01
 NSF grant for Antarctic Biology and Medicine, 7/25/96
 NSF grant for Polar Programs, 3/12/98
 NSF grant for Biological Oceanography 9/24/96, 4/25/97, 10/17/00, 10/18/01,
 10/18/01
 NSF grant for Sensory Systems, 2/11/93, 4/8/96, 9/24/96, 3/31/97, 11/11/97,
 3/20/06
 Louisiana Sea Grant, 04/11/01
 Paper for American Midland Naturalist, 9/29/98
 Paper for American Zoologist, 09/17/01
 Paper for Animal Behavior, 05/09/99, 10/27/04, 09/26/05, 05/05/06, 07/24/06
 Paper for Aquatic Living Resources, 05/22/01
 Paper for Behavioral Ecology and Sociobiology, 4/05/05
 Paper for Behavioral Ecology 04/01/02
 Paper for Behaviour 01/17/02, 10/11/05, 07/24/06, 03/02/07
 Paper for Behavioral Processes, 11/10/04, 4/3/05

Paper for Biological Bulletin, 12/22/97, 07/29/98, 2/21/05
 Paper for Biological Invasions, 4/19/00, 11/22/06, 3/16/07
 Paper for Biological Letters, 4/06/07, 05/18/07
 Paper for Chemical Senses, 3/15/95, 10/16/95
 Paper for Current Biology 6/26/06, 7/18/06, 8/16/06, 05/18/07, 5/23/07
 Paper for Ethology, 10/21/04, 05/13/04, 02/15/05, 03/25/05, 05/04/05, 07/21/05,
 08/23/06, 1/31/07
 Paper for Environmental Fluid Mechanics, 11/15/01, 01/08/02
 Paper for Hormones and Behavior, 04/25/06
 Paper for International Biodeterioration and Biodegradation, 11/30/99
 Paper for Journal of Chemical Ecology, 11/24/99
 Paper for Journal of Comparative Physiology A, 12/09/98, 02/10/99
 Paper for Journal of Crustacean Biology, 11/09/05
 Paper for Journal of Experimental Biology, 8/01/96, 10/01/01, 7/15/02, 4/11/06,
 07/24/06, 3/22/07
 Paper for Journal of Marine Science 11/22/02
 Paper for Journal of Mathematical Biology, 06/21/00
 Paper for Marine and Freshwater Research, 09/22/00, 10/13/00, 02/09/07
 Paper for Marine Biology, 04/18/00
 Paper for Marine Ecology - Progress Series, 11/17/94, 08/18/95, 09/19/95, 02/21/96,
 06/19/96, 06/20/96, 07/01/96, 12/30/96, 06/05/97, 08/20/97,
 08/26/97, 08/29/97, 01/08/98, 01/21/98, 02/12/98, 03/24/98,
 04/03/98, 04/15/98, 05/05/98, 05/12/98, 06/30/98, 07/22/98,
 09/04/98, 09/16/98, 10/13/98, 10/29/98, 10/30/98, 11/05/98,
 01/07/99, 01/07/99, 01/25/99, 02/10/99, 02/11/99, 06/11/99,
 06/12/99, 08/12/99, 4/17/00, 05/04/00, 05/04/00, 10/17/00,
 01/23/01, 03/29/01, 08/29/01, 07/01/01, 09/05/01, 03/01/02,
 05/21/02, 1/27/03, 04/03/06, 2/24/07
 Paper for Neuroscience methods, 10/01/01, 04/01/02, 03/10/05
 Paper for Physiology and Behavior, 10/23/96, 12/30/96, 05/05/98
 Paper for Polar Biology, 09/27/00, 11/22/06

POPULAR MEDIA COVERAGE

Dec 11, 2001

New York Times Science Section, "Danger sniffer"

Nov 30, 2001	Ascribe, “Lobster-Sniffing Study May Spawn Underwater Robots”
Nov 30, 2001	Denver Publishing, “EXOSKELETON IN THE CLOSET; IT'S NO CLAWS FOR ALARM - LOBSTERS' FAMILY SECRETS”
Nov 30, 2001	CBC, “Lasers track lobsters' sense of smell”
Dec 1, 2001	The Toledo Blade, “BGSU researcher’s work might save a warrior’s life”
Jan 2000	Paul Harvey news broadcast on JEB paper
Jan 2000	New Scientist Magazine, review of JEB paper
March 10, 1999	Gator Radio show "Talk about crayfish aggression"
August 1, 1998	Quoted in article for the New Scientist by Jon Copley.
June 20, 1998	Radio interview on WSPD, Toledo. Art Edgerton Show
June 28, 1998	TV interview with Art Edgerton.
January 1998	“Government funding of science is an investment in our future” ‘Consider this’ opinion piece for AT BG magazine
November 7, 1997	TV interview with Laura Spitzer, channel 13 on lobster research.
June 20, 1996	“Lobsters help scientists study sensory biology”, Sentinel-Tribune article on NSF grant, Bowling Green, OH.
June 19, 1996	“Leapin’ Lobsters” article on my research, The Advertiser Tribune, Findley, OH.
June 17, 1996	Press Release, Science Daily on World Wide Web.
March 19, 1995	Radio interview on WSPD, Toledo. Art Edgerton Show
February 4, 1995	Interview for science article in Science News, “Tracking an Undersea Scent: a robot mimics the lobster’s keen sense of smell” by Richard Lipkin.

CONSULTING

09/07/01 – present Expert Stream ecologist for the Crystal River law suit

RECENT COLLABORATORS

Marc Weissburg (GSU)	Mimi Koehl (UC, Berkeley)
Richard Zimmer-Faust (UCLA)	Barbara Best (Colby College)
Jeannette Yen (SUNY, Stony Brook)	Larry Madin (WHOI)
Akira Okubo (SUNY, Stony Brook)	Rudi Strickler (U Wisconsin)
Larry Clark (USDA)	Brian Hazlett (Michigan)

SERVICE FOR THE DEPARTMENT AND UNIVERSITY:

University of Michigan's Bart IGERT selection committee 2001- present
Director of Marine Program, 1994 - present
Executive Committee, 1995-1998
Graduate Committee, 1998-2000
Vice-President BGSU chapter of Sigma Xi, 1995-1996
President BGSU chapter of Sigma Xi, 1996-1997
Honors Advisory Council, 1996-2000
Undergraduate Recruitment committee, 1994 - 1997
Search Committee for Cell Signaling Position, 1997
December, 1997, testified for House committee on Science
Search Chair for Animal Behavior Position, 1998
Participated in Orientation and Registration "We Care" program 1998-1999
Served on Graduate Appeals Committee for Graduate College, 9/98
Member of the Bashore Scholarship selection Committee, 10/98, 12/99
Developed Undergraduate major in Neuroscience
Developed Center for Neuroscience, Mind, and Behavior
Gave "Last Lecture" to Alpha Lambda Delta, 02/10/99
Faculty Senate 1999-2001
Chair of search for Director of Sponsored Programs and Research, 2000
Chair of Committee for the Review of Health and Human services program, 2000
Part of Distinguished Scholars group for Provost interviews, 2000
Member of Graduate Strategic Planning committee, 2000
Member of Outstanding Senior Award Committee, 2000
Member of Graduate Dean Search Committee, 2002
Member of the Associate Dean of the Graduate College search committee, 2001