

# RICHARD HEATH RAUSCHENBERGER

Ecotoxicology Program  
US Geological Survey – Florida Integrated Science Center  
Center for Aquatic Resource Studies  
7920 NW 71<sup>st</sup> Street  
Gainesville, FL 32653

Office Phone: 352-264-3529  
Center Phone: 352-378-8181  
Fax Number: 352-378-4956  
e-Mail Address: [heath\\_rauschenberger@usgs.gov](mailto:heath_rauschenberger@usgs.gov)

## **WORK EXPERIENCE (PAID AND NONPAID)**

---

6/2001-present      *Univ. of Florida / USGS – Center for Aquatic Resource Studies*      *Gainesville, FL*

- Title: Research Graduate Asst.      Hours/Week: 40-50
- Duties and Accomplishments: PhD candidate and co-project leader for a team-oriented, multidisciplinary study investigating the association between organochlorine pesticide exposure and developmental mortality/ altered egg quality in the American alligators from nutrient-enriched (eutrophic) lakes. Captured and maintained/handled adult and juvenile alligators, collected eggs from wild and captive nests, performed necropsies on adult and hatchling alligators, and monitored eggs for viability. Collected tissue samples for contaminant, nutritional, and histological analyses, and coordinated work with collaborating laboratories. Routinely used SAS statistical software to analyze biological, nutritional, and contaminant data. Interpreted the toxicological significance of the findings and reported findings to the scientific community at international meetings and in peer-reviewed scientific journals. I also assisted in the following studies conducted by our laboratory: Reproductive Effects of Pulp and Paper Mill Effluents in *Gambusia* (mosquitofish); Reproductive Effects of DDE and Dieldrin in Largemouth Bass (*Micropterus salmoides*); and Atrazine Exposure and Reproductive Biology of the Cane Toad (*Bufo marinus*). Specific tasks include: using water quality meters, electrofishing equip., and digital cameras. Co-PI on two pending USDA grants : one proposal is a risk-based assessment of aquatic ecosystem health in restored wetlands as a function of reclamation activities and environmental contaminants (\$ 760,000), and the other will evaluate whether water quality of watersheds is improved by reclamation of agricultural properties (\$ 385,000).

4/1999-7/2001      *Arkansas State University – Ecotoxicology Research Facility*      *Jonesboro, AR*

- Title: Research Graduate Asst.      Hours/Week: 30
- Duties and Accomplishments: Designed and executed a study investigating the development of alligator snapping turtle embryos incubated in substrates with different agrochemical risks (e.g., soil from an active cotton field, soil from a state wildlife management area, and a control substrate). Designed and executed a study that investigated the richness and abundance of herptofauna inhabiting nutrient-enriched agricultural ditches in northeastern Arkansas. Designed and executed a study examining the presence and abundance of turtle species in a small, urban stream in Jonesboro, AR. GLP-trained in culturing and maintaining test organisms (*C. dubia*, *C. daphnia*, *P. promelas*, and *C. tentans*) for aquatic and sediment toxicity tests (state certified NPDES lab). Assisted in fish and aquatic macroinvertebrate population studies that related water quality to species richness in the Yazoo River basin in central Mississippi for the USDA – National Sedimentation Laboratory. Specific tasks included using water quality meters, electrofishing equip., and using taxonomic keys to identify fish to species, collected aquatic macroinvertebrates, and physical measurements of stream habitat (e.g., channel depth, width, flow, and water clarity). Specific tasks also included use of SAS and MiniTab statistical software to analyze data.

4/1999-6/2001

*Arkansas State University –Physical Plant*

Jonesboro, AR

- Title: Pest Control Technician Hours/Week: 40
- Duties and Accomplishments: Coordinated and executed pest control work for the university. Responsible for assuring that all Arkansas State Plant Board, OSHA, and EPA regulations were followed. Developed standard operating procedures (SOP) for the university's pest control program and authored a Pest Control SOP manual for the university. Supervised and trained other university employees in standard pest control and safety practices.

10/1998 – 4/1999

*Terminix International*

Jonesboro, AR

- Title: Termite Control Supervisor Hours/Week: 40 -50
- Duties and Accomplishments: Supervised 3-8 termite control technicians and assisted them in treating buildings to prevent/eliminate termites as well as other structural pests. Responsible for assuring that all Arkansas State Plant Board, OSHA, and EPA regulations were followed.

5/1998 – 10/1998

*USDA-Natural Resources Conservation Service*

Monticello, AR

- Title: Private Lands Biologist Hours/Week: 40
- Duties and Accomplishments: Assisted private landowners, state agencies, and federal agencies in improving the wildlife habitat quality of private lands. Drafted the Plan of Operation for the reclamation of agricultural areas enrolled in the USDA Wetland Restoration Program (WRP) and the Conservation Reserve Program (CRP). Identified plants and wildlife while assessing quality of habitat. Implemented plans to improve quality of wildlife habitat (e.g., tree planting, temporary flooding, food plots, and mowing to maintain successional stages). Assisted state wildlife officials in conducting biological surveys and mercury contamination surveys.

1/1994 – 5/1998

*Terminix International*

Jonesboro, AR

- Title: Termite Control Technician Hours/Week: 40-60
- Duties and Accomplishments: Applied insecticides, rodenticides, and fungicides to buildings to control and prevent damage caused by pests and wood-destroying fungus. Responsible for following all Arkansas State Plant Board, OSHA, and EPA regulations.

5/1989 – 6/1993

*Northeast Arkansas Equine Center*

Jonesboro, AR

- Title: Veterinary Technician Hours/Week: 25
- Duties and Accomplishments: Assisted in surgeries, administered medication, groomed, fed, and cared for horses and other domestic animals. Maintained grounds and buildings using tractor w/ mower and herbicides..

## EDUCATION

---

University of Florida - College of Veterinary Medicine

Gainesville, FL

Advisor: Timothy S. Gross, PhD

*PhD Candidate / Interdisciplinary Toxicology*

December 2004

Arkansas State University

Jonesboro, AR

Co-advisors: Jerry L. Farris, PhD / Stanley E. Trauth, PhD

*MS / Biology*

2001

Arkansas State University

Jonesboro, AR

*BS / Wildlife Management*

1993

## PROFESSIONAL ASSOCIATIONS

---

2003-2004 Board Member, Southeast Regional Chapter of SETAC  
 1999-present Society for Environmental Toxicology and Chemistry (SETAC)  
 1999-2001 Chelonian Research Foundation  
 1999-2001 Society for the Study of Amphibians and Reptiles

## COMMUNITY OUTREACH

---

Public speaker. NIEHS/EPA Superfund Environmental Health Partnership High School Science Teacher Program. USGS-FISC. Gainesville, FL. June 18, 2002.  
 Public speaker. "Snakes of Florida". USGS-FISC Open House. Gainesville, FL. May 14-15, 2002.  
 Public speaker. "Alligators and Crocodiles of Florida". Terwilliger Elementary. Gainesville, FL. January 17, 2003.  
 Public speaker. "Reptiles of Florida". Alachua County Youth Fair & Livestock Show. Gainesville, FL. February 24, 2003.  
 Public speaker. NIEHS/EPA Superfund Environmental Health Partnership High Science Teacher Program. USGS-FISC. Gainesville, FL. June 19, 2003.

## AWARDS/GRANTS

---

Pre-doctoral Fellowship, University of Florida Superfund Basic Research Program. August 24., 2001- present.  
 "Above and Beyond" Award. 1<sup>st</sup> Annual Southeast Chapter SETAC Meeting. Columbus, GA, June 6-7, 2003.  
 Bingham Environmental Education Foundation Grant Award (\$1000). Environmental contaminants and Florida's wildlife. 45-60 minute video. December 4, 2003.  
 National Research Initiative – 2004 Request For Applications. Program Area 23.1: Managed Ecosystems. (Pending). Title: Risk-based assessment of environmental contaminants and ecosystem health in restored wetlands as a function of restoration activities. PI: Gross, T.S. Co-PIs: **Rauschenberger, R.H.**, Farris, J.L., and Maul, J.D. (\$760,000). USDA – Coop. State Research, Education, and Extension Service.  
 National Integrated Water Quality Program: Integrated Research, Extension, and Education Project 110.D. (Pending). Title: Wetland restoration and water quality improvement in agriculturally-dominated watersheds in Arkansas and Florida. PI: Farris, J.L. Co-PIs: **Rauschenberger, R.H.**, Gross, T.S., and Maul, J.D. (\$385,000). USDA – Coop. State Research, Education, and Extension Service.

## PRESENTATION OF RESEARCH ABSTRACTS

---

### *Poster Presentations*

Rauschenberger, R.H., Trauth, S.E., and Farris, J.L. 2001. Viability of alligator snapping turtle hatchlings incubated in treated and non-treated substrates. Society for Environmental Toxicology and Chemistry 22<sup>nd</sup> North American Annual Meeting, Baltimore, MD. November 10-15.  
 Rauschenberger, R.H., Sepulveda, M.S., Wiebe, J.J., Ruessler, D.S., Wieser, C., and Gross, T.S. 2002. Predicting maternal body burdens and evidence of maternal transfer in *Alligator mississippiensis*. University of Florida Superfund Basic Research Program Annual Retreat, Gainesville, FL. September 10.  
 Rauschenberger, R.H., Sepulveda, M.S., Wiebe, J.J., Ruessler, D.S., Wieser, C., and Gross, T.S. 2002. Predicting maternal body burdens and evidence of maternal transfer in *Alligator mississippiensis*. 16<sup>th</sup> International Working Meeting of the Crocodile Specialist Group, Gainesville, FL. October 7-10.  
 Rauschenberger, R.H., Sepulveda, M.S., Wiebe, J.J., Buckland, J.E., Ruessler, D.S., and Gross, T.S. 2002. Organochlorine pesticides and embryonic mortality in alligators and largemouth bass: Investigating causal relationships and mechanisms. Superfund Basic Research Program Annual Conference, Tucson, AZ. November 3-6.  
[http://cars.er.usgs.gov/posters/Ecotoxicology/OCPs in Alligators and Bass/ocps in alligators and bass.html](http://cars.er.usgs.gov/posters/Ecotoxicology/OCPs%20in%20Alligators%20and%20Bass/ocps%20in%20alligators%20and%20bass.html)

- Rauschenberger, R.H., Sepulveda, M.S., Wiebe, J.J., Ruessler, D.S., Wieser, C., and Gross, T.S. 2002. Predicting maternal body burdens and evidence of maternal transfer in *Alligator mississippiensis*. Society for Environmental Toxicology and Chemistry 23<sup>rd</sup> Annual Meeting, Salt Lake City, UT. November 16 - 20. [http://cars.er.usgs.gov/posters/Ecotoxicology/Contaminant Body Burdens/contaminant\\_body\\_burden\\_s](http://cars.er.usgs.gov/posters/Ecotoxicology/Contaminant_Burdens/contaminant_body_burden_s)
- Wiebe, J., Sepúlveda, M., Buckland, J., Harvey, A., **Rauschenberger, H.**, and Gross, T. 2002. Alligator embryo and hatchling growth from contaminated and clean lakes in Florida. 16<sup>th</sup> International Working Meeting of the Crocodile Specialist Group, Gainesville, FL. October 7-10.
- Rauschenberger, R.H., Wiebe, J.J., Buckland, J.E., Smith, J.T., Sepulveda, M.S., Ruessler, D.S., and Gross, T.S. 2003. Achieving environmentally relevant organochlorine pesticide concentrations in eggs through maternal exposure in *Alligator mississippiensis*. 12<sup>th</sup> International Symposium on Pollution Responses in Marine Organisms, Tampa, FL. May 9-12. [http://cars.er.usgs.gov/posters/Ecotoxicology/OCPs in Alligators/ocps in alligators.html](http://cars.er.usgs.gov/posters/Ecotoxicology/OCPs_in_Alligators/ocps_in_alligators.html)
- Eileen, M.K., Wiebe, J.J., Buckland, J.E., **Rauschenberger, R.H.**, Gross, D.A., Sepúlveda, M.S., and Gross, T.S. (2003). A qualitative/quantitative assessment protocol for determining reproductive status and stage of vitellogenesis in the American alligator. 12<sup>th</sup> International Symposium on Pollution Responses in Marine Organisms, Tampa, FL. May 9-12.
- Rauschenberger, R.H., Sepulveda, M.S., Wiebe, J.J., Buckland, J.E., Ruessler, D.S., and Gross, T.S. 2003. Organochlorine pesticides and embryonic mortality in alligators and largemouth bass. Annual Meeting of the Southeast Regional Chapter of SETAC, Columbus State University, Columbus, GA. June 5-6.

#### *Platform Presentations*

- Rauschenberger, R.H. and Trauth, S.E. 1999. Turtle species richness and abundance in a small, urban stream. Arkansas State Chapter of The Wildlife Society Annual Meeting, Arkansas Tech University, Russellville, AR. October 17.
- Rauschenberger, R.H., Sepulveda, M.S., and Gross, T.S. 2002. Alligators, organochlorines, and embryonic mortality: Investigating causal relationships and mechanisms. Superfund Basic Research Program Fall Seminar Series, University of Florida, Gainesville, FL. October 2.
- Rauschenberger, R.H., Sepulveda, M.S., and Gross, T.S. 2002. Alligators, organochlorines, and embryonic mortality: Investigating causal relationships and mechanisms. Department of Physiological Sciences Fall Seminar Series, College of Veterinary Medicine, University of Florida, Gainesville, FL. October 29.
- Wiebe, J.J., Sepulveda, M.S., Ruessler, D.S., **Rauschenberger, R.H.**, Buckland, J.E., and Gross, T.S. 2002. An evaluation of the incidence of embryonic mortality in the American alligator from contaminated sites in Central Florida. Society for Environmental Toxicology and Chemistry 23<sup>rd</sup> Annual Meeting, Salt Lake City, UT. November 16 - 20.
- Rauschenberger, R.H., Wiebe, J.J., Buckland, J.E., Smith, J.T., Sepulveda, M.S., Ruessler, D.S., and Gross, T.S. 2003. Achieving environmentally relevant organochlorine pesticide concentrations in eggs through maternal exposure in *Alligator mississippiensis*. Graduate and Professional Student Forum, University of Florida, Gainesville, FL. April 1.
- Rauschenberger, R.H., Wiebe, J.J., Buckland, J.E., Smith, J.T., Sepulveda, M.S., Ruessler, D.S., and Gross, T.S. 2003. Achieving environmentally relevant organochlorine pesticide concentrations in eggs through maternal exposure in *Alligator mississippiensis*. Annual Meeting of the Southeast Regional Chapter of SETAC, Columbus State University, Columbus, GA. June 5-6.
- Rauschenberger, R.H., Sepulveda, M.S., and Gross, T.S. 2003. Evaluation of egg and embryo qualities in American alligators exposed to organochlorine pesticides. Superfund Basic Research Program Fall Seminar Series, University of Florida, Gainesville, FL. October 29.
- Rauschenberger, R.H., Sepulveda, M.S., Honeyfield, D.C., and Gross, T.S. 2003. Evaluating the relationship between thiamine concentrations in eggs and developmental mortality in alligators inhabiting central Florida Lakes. Workshop on Alligator Mortality and Reproductive Impairment on Central Florida Lakes. University of Florida, Austin Carey Forest, Gainesville, FL. December 3.

**PUBLICATIONS**

---

- Rauschenberger, R.H. 2001. Standard Operating Procedures for Pest Control at ASU. Arkansas State University Physical Plant, Jonesboro, AR.
- Rauschenberger, R.H. 2003. Cover photograph (subject: American alligator). In: *Handbook of Ecotoxicology*, 2<sup>nd</sup> Edition. Hoffman, D. J., Rattner, B. A., Burton, A. G., and Cairns, Jr., J., (eds). Lewis Publishers.
- Rauschenberger, R.H. 2003. Book Review. *The Alligator Book*. Lockwood, C. C. 2002. Louisiana State University Press: Baton Rouge. Arkansas Review: 34(1):48.
- Gross, T.S. and **Rauschenberger, R.H.** 2004. Triazines. In: *Endocrine Disruptors: The Biological Basis for Health Effects in Wildlife and Humans*. Norris, DO and Carr, JA (eds). Oxford University Press.
- Rauschenberger, R.H., Trauth, S.E., and Farris, J.L. 2004. Incubation of *Macrochelys temminckii* eggs in agricultural and natural soils. Applied Herpetology 1(3):299-309.
- Rauschenberger, R.H., Wiebe, J.J., Buckland, J.E., Smith, J.T., Sepúlveda, M.S., and Gross, T.S. (2004). Achieving environmentally relevant concentrations of organochlorine pesticides in eggs through maternal exposure in Alligator mississippiensis. Marine Environmental Research (In press, [doi:10.1016/j.marenvres.2004.03.104](https://doi.org/10.1016/j.marenvres.2004.03.104)).
- Rauschenberger, R.H., Wiebe, J.J., Sepulveda, M.S., Buckland, J.E., and Gross, T.S. 2004. Predicting maternal body burdens of organochlorine pesticides from eggs and evidence of maternal transfer in *Alligator mississippiensis*. Environmental Toxicology and Chemistry (In press, MS # 03-594).
- Sepúlveda MS, **Rauschenberger, R.H.**, Wiebe, J.J., Honeyfield, D., Hinterkopf, J., Johnson, W.E., and Gross, T.S.. 2004. Relationship between thiamine concentrations and organochlorine pesticides in eggs of largemouth bass and the American alligator and early life-stage mortalities. Journal of Wildlife Diseases (In press, MS # 6592).
- Eileen, M.K., Wiebe, J.J., Buckland, J.E., **Rauschenberger, R.H.**, Gross, D.A., Sepúlveda, M.S., and Gross, T.S. (In prep). Molecular characterization of vitellogenin and vitellins in American alligator from organochlorine pesticide contaminated lakes in Florida. Journal of Reproduction and fertility.
-