

James T. Wetzel
Pulaski Smith Professor of Biology , Presbyterian College, Clinton, SC
(864)833-8412
FAX 864-833-8993 e-mail: jwetzel@presby.edu

Education:

Ph.D. Zoology 1995 - Clemson University

* Dissertation: On the functional morphology of epidermal modifications in the skin-brooding fishes: *Platystacus*, *Solenostomus*, and *Hippocampus*

Areas of Specialization:

Vertebrate Reproduction & Embryonic Development, Biology of Seahorses, Shark Reproduction, Ichthyology, Evolution of Paternal Brooding in Fishes, Electron Microscopy, Developmental Ultrastructure, Marine Biology, Marine Science Diving, Technical Writing.

Courses Developed and taught:

Developmental Biology, Comparative Anatomy, Human Anatomy & Embryology, Light & Electron Microscopy, Introduction to Marine Biology, Marine Embryology, Ichthyology, SCUBA Diving. Visual literacy, Library Research Methods, Biology Senior Seminar

Professional Associations:

Electron Microscopy Society of America
South Eastern Electron Microscopy Society
Appalachian Region EM Society
American Society of Ichthyologists & Herpetologists
Society for Integrative & Comparative Biology
South Carolina Academy of Sciences
American Elasmobranch Society
South Carolina Marine Educators Association
National Marine Educators Association

Professional Activities:

- * 2003 Review Editor for Biology, 8th ed., McGraw Hill Publishing, ISBN 0-07-013657-2
- * 2001 Review Editor for Patterns & Experiments in Developmental Biology, 3rd ed., McGraw Hill Publishing, ISBN 0-07-237965-0.
- * 2000 Authored a test bank for Human Anatomy, 3rd ed., Benjamin-Cummings Press, ISBN 0-8053-4937-5.

Honors & Recognitions:

- * First Place - Polaroid Corporation International Scientific Photographic Competition – electron microscope division (1994)

- * “Biologist at Large” - Appalachian Region EM Society (1995)
- * Scholar in Residence – Hannam University, South Korea (1998)
- * Visiting Scholar at Belle Baruch Institute (2001)
- * *Microscopy Today* journal: front cover electron micrograph image (2001)
- * Visiting Scholar at Belle Baruch Marine Institute (2003)
- * 2004 Who’s Who Among America’s College and University Professors
- * EIPBN 2004 Grand Prize winner – electron microscopy competition
- * Summer Research Fellow – Australian Museum, Sydney, Australia (2005)
- * 2005 Olympus Bioscapes Competition – honorable mention: Photomicrography
- * SCICU – Excellence in Teaching Award (2006)
- * Presbyterian College Professor of the Year (2006)

Grants for student research:

- * 1998 Monsanto Corporation – Crissy Ellis: Normal stages of embryogenesis in the Pipefish, *Syngnathus scovelli*
- * 2001 South Carolina Independent Colleges & Universities – Susannah Miller & Carl Roberts: Development of the gut in the seahorse, *Hippocampus zosterae*
- * 2003 South Carolina Independent Colleges & Universities – Ryan Jennings & Michael Long: The effects of Copper on the embryology of the sea urchin, *Arbacia*.
- * 2005 South Carolina Independent Colleges & Universities – Megan Rogers & Laura Denman: Embryogenesis in the dwarf seahorse, *Hippocampus zosterae*, a SEM analysis.
- * 2005 M. K. Pentacost Ecology Grant for studies on the normal stages of development of a SC endemic pipefish, *Syngnathus scovelli*.
- * 2006 M.K. Pentacost Ecology Grant for studies on toxicity of embryos of SC endemic pipefishes.
- * 2006 South Carolina Independent Colleges & Universities – Jared Dickerson: Embryogenesis of the brown trout, *Salmo trutta*; a study in developmental ultrastructure.

Directed Student Research:

- * Rogers, M. and Laura Denman, "A Scanning electron microscopy study of embryonic development in *Syngnathus*."
- * Randall, C., "Electrophoresis of brood pouch fluids in the dwarf seahorse, *Hippocampus zosterae*"
- * Jennings, R. and Michael Long, "Heavy metal toxicity on the development of sea urchin embryos"
- * Miller, Susannah, and Carl Roberts, "Microscopic Observations of the Embryonic Gut of the seahorse, *Hippocampus zosterae*".
- * Evans, Andrew B., Amanda R. Lamoreaux, and A. Nicole Newsom, "Comparative Morphology of Peripheral and Accessory Nerves of the Mammalian Nervous System"
- * Frederick, Robyn L., and Katherine M. Kelly, "Structure of the Mouse Placenta and Umbilicus"
- * Hopkins, Catherine K., and Susan E. Roy, "Normal Embryogenesis in the Sea Urchin"
- * Morgan, Joseph M., and Aaron P. Shoher, "Metamorphosis in the Bull Frog, and Scanning Electron Microscopy of Normal Amphibian Development"
- * Sims, Lisa R., Laura L. Harris, and Roxolana A. Stachiw, "Embryology of the Japanese Medaka"
- * Tormey, David A., and Ryan D. Jennings, "A Scanning EM Study of Abnormal Embryonic Development in the Sea Urchin, *Arbacia punctulata*"
- * Waller, Mary L., "Developmental Anatomy of *Artemia*: a Scanning Electron Microscope Study"
- * Smalling, Alex (Honors Research), "Normal Stages of Embryogenesis in *Procambaeus clarkii*: an SEM Study".
- * Smith, Ellie (Honors Research), "Development of the eye of the Pipefish (*Syngnathus*) and the Seahorse (*Hippocampus*)".
- * Bailey, B., Foster, M and Thrasher, T. "Environmentally Induced Spawning and Normal Embryogenesis in the Zebra Fish"
- * Burns, A. Estes, D. and Stetson, J. "Chorionic Membrane Transplants in Bird Embryos".

* Brinson, A., Oxner, D. and Long, M. "Experimental Embryology of the Sea Urchin, *Arbacia*".

* Bragan, S., Campbell, C. and Cunningham, B. "Hormonal Maturation in Amphibians".

* Copeland, W., Moore, J. and Parker, J. "Processes of Regeneration in *Lumbriculus*".

Publications:

Wetzel, J. & J. P. Wourms 1991. Paternal-embryonic relationships in seahorses and pipefishes (Syngnathidae). *Amer. Zool.* 31:83A

Wetzel, J., Wourms, J. P. & S.G. Poss 1992. Cotylephores of the ghost pipefish: sites of egg attachment and maternal-embryonic exchange. *Amer. Zool.* 32(5):154A

Wourms, J. & **J. Wetzel** 1992. Evolutionary morphology of cotylephores: egg attachment sites in skin-brooding fishes. *Amer. Zool.* 32(5):160A.

Bartsch, J., Ergle, S., Kokkala, I. and **J. Wetzel**. 1994. Development of the lateral line in embryos of the dwarf seahorse, *Hippocampus zosterae*. *ASB Bull.* 41(2):82.

Wetzel, J. & J.P. Wourms 1995. Adaptations for reproduction and development in the skin-brooding ghost pipefishes, *Solenostomus*. *Envir. Biol. Fish.* 44:363-384.

Wetzel, J., Wourms, J.P. & J. Friel 1996. Comparative morphology of cotylephores in *Platystacus* and *Solenostomus*; modifications of the integument for egg attachment in skin-brooding fishes. *Envir. Biol. Fish.* 50(1) .

Kokkala, I., **Wetzel, J.**, & J. Bartsch 1996. Development of free neuromasts in *Hippocampus zosterae* (Syngnathidae); an SEM study. *ASB Bull.*

Wetzel, J. 1997. Reproductive Biology of the Seahorse. *SeaScripts (Bull. SCMEA)*, Spring '97':6.

Oconer, E.P., Herrera, A.A., Amparado, E.A., **Wetzel, J.T.**, and R.M. De La Paz. 2003. Immunolocalization of Hormones Involved in Male Gestation in the Seahorse, *Hippocampus barbouri* Jordan and Richardson 1908. *The Philippine Agricultural Scientist* 86(1) 84-91.

Wetzel, J.T and Wourms, J.P. 2004. Embryogenesis in the Dwarf Seahorse, *Hippocampus zosterae*., *Gulf and Caribbean Research*, v.16, .pp. 27-35.

Oconer, EP, CP Pascual, AA Herrera, T. Sakamoto and **JT Wetzel**. 2006. Chemical components in the pouch fluid of the seahorse, *Hippocampus barbouri*, Jordan and Richardson 1908, and their uptake in embryos. *Asia Life Sciences* 15(1)17-83.

Presentations:

- “ Species diversity in the Galapagos Islands”
Gulf Coast Research Laboratory (2006)
- “ A Scanning EM analysis of brood structure in the dwarf seahorse, *Hippocampus zosterae*”
University of Queensland, Brisbane, Australia (2005)
- “ The Reproductive Biology of Seahorses”.
Gulf Coast Research laboratory (2003)
- “ X-ray diffraction microanalysis applications in developmental biology”
Clemson University (2000)
- “ The Reproductive Biology and Embryonic Development of the Dwarf Seahorse, *Hippocampus zosterae*, with notes on related Syngnathid species”
SC Academy of Sciences (2000)
- “ Reproduction and Development in Syngnathid Fishes: an EM/EDX Study”
Hannam University, Taejon, South Korea (1989)
- “ Evolution and Function of the seahorse Broodpouch.”
South Carolina Marine Education Association (1996): Keynote address.
- “ The Evolution of the Paternal Brood Sac in Syngnathid Fishes”.
Winthrop University (1993).
- “ Paternal-Embryonic Relationships in the Syngnathidae”
Gulf Coast Research Laboratory, Ocean Springs, MS (1992)
- “ The Reproductive Biology of the seahorse”
SC Jr. Academy of Sciences, Due West (1990)
- “ Electoreception in Lower Vertebrates”
SC Jr. Academy of Sciences, Columbia (1989)
- “The Electoreceptive Periphery in Embryonic Sharks”
Clemson university (1989)
- “ Species Diversity in the Eastern and Western Pacific”.
Tokai University, Kumamoto, Japan (1987);
Amucksa Aquarium, Amucksa, Japan (1987).
- “ Species Diversity in the Eastern and Western Pacific”
Bodega Marine Laboratory (1986)

“ Paternal-embryonic relations in Seahorses and Pipefishes”.
Bodega Marine Laboratory (1986).

Related Experience:

2006 – Adjunct Professor, University of Southern Mississippi:
taught Ichthyology at the Gulf Coast Research Laboratory, Ocean Springs, MS

2003 & 2004 – Adjunct Professor, University of Southern Mississippi:
taught Marine Biology at the Gulf Coast Research Laboratory, Ocean Springs,
MS

2000 – Adjunct - University of the Philippines, Diliman; served as Ph.D. dissertation
co-advisor for graduate studies in marine biology.

1990 - present: Tenured position in biology

(Professor; Pulaski Smith Chair awarded 2004) at Presbyterian College.

* summer 1991: led a student group for diving and marine biology study
to Orpheus Island Research Station of James Cook University, Australia.

* summer 1994; led a student group for diving and marine biology study
to Cayman Marine laboratory.

* summer 1996: led a student group for diving and marine biology study
to the Galapagos islands.

* summer 1998: led a student group for diving and marine biology study
to Lizard Island Research Station of the Australian National Museum.

* summer 2004: led a student group for diving and marine biology study
to Lizard Is. Research Station (ANM), Australia.

* summer 2006: led a student group for diving and natural history study to
the Galapagos Islands and the mountains of Ecuador.

Summer 1996 - present: Instructor: South Carolina Governor's School for
Science & Mathematics - invertebrate & vertebrate zoology/embryology.

Summer 1995, summer 1996: position as diving instructor/biologist for Northfield Mount
Herman school - a six week course in marine biology and SCUBA in St. Croix

1981 - 1986: Diving officer/ SCUBA instructor for California State University at
Sonoma, Rohnert Park, California.

1982 - 1986: Research diver/collector - aquarist for the University of California, Bodega
Marine Laboratory, Bodega Bay, California.

Committees served at Presbyterian College:

Alcohol Advisory

International Studies (Chair)

Student Affairs
Admissions Committee
Curriculum Committee (Chair)
Academic Affairs
Faculty Status
Committee for Status Appeals
Provost Search Committee

References:

Dr. John P. Wourms, Biological Sciences, Clemson University, Clemson, SC

Dr. Robert G. Hudson, Dept. of Biology, Presbyterian College, Clinton, SC

Dr. G. David Gillespie, Dept. of Political Science, Presbyterian College, Clinton, SC

Dr. William Hawkins, Director, Gulf Coast Research laboratory, Ocean Springs, MS

Dr. Clyde Smith, Director of Summer Programs, South Carolina Governor's School for Science & Mathematics, Hartsville, SC

Dr. Annabelle Herrera, Institute of Biology, University of the Philippines, Diliman, Quezon City, Philippines

Dr. Edna P. Oconer, College of Science, Mindanao State University, General Santos City, Philippines