



## MARK L. MANDICA

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### PRESENT POSITIONS

Graduate Student, Lu Auditory Neurobiology Laboratory, Biology Department, University of Miami (Coral Gables, FL)

President, Mandica Illustration & Design, Inc. Scientific and technical rendering for research articles, reviews, and texts. Illustration, Graphic and Web Design (Miami, FL)

Collections Council, Miami Museum of Science (Miami, FL)

### EDUCATION

Masters of Science (M.S.) in Biology. University of Miami, FL. Expected graduation date December 2007

*Thesis manuscripts in preparation:*

Proportion of Area Occupied Modeling of Amphibians within Everglades National Park, Florida.

Comparison of Photoperiod Related Activity Patterns, Non-Visual Photoreception and Suprachiasmatic Nuclei of Two South Florida Bufonids (Anura: Bufonidae).

Bachelor of Science in Biology, concentration in Evolutionary Biology. University of Massachusetts, Amherst. 1999  
*Senior Thesis:* Efficiency and Efficacy of Vernal Pond Amphibian Survey Techniques.

Bachelor of Arts in Sociology. University of Massachusetts, Amherst. 1999

Minor in Psychology. University of Massachusetts, Amherst. 1999

### EXPERIENCE

#### RESEARCH EXPERIENCE

2003 - 2006 Graduate Research Assistant. Department of Interior Critical Ecosystems Science Initiative, Amphibian Ecological Modeling in Everglades National Park. Comparison of Photoperiod Related Activity Patterns and Non-Visual Photoreception between Two South Florida Bufonids

1999 - 2002 Amphibian population study of vernal ponds in the Quabbin Watershed Management Area. Daily surveys, data collection and analysis. Reports submitted to the Metropolitan District Commission (Spring 2000, Fall 2001)

2001 Field Biologist, supervised research team on a metapopulation study of the Marbled Salamander (*Ambystoma opacum*). Natural Resources Conservation, University of Massachusetts (Amherst, MA)

Research techniques include: audio/visual diurnal and nocturnal surveys, terrestrial and aquatic transects, drift fencing with funnel and pitfall trap arrays, dipnet, trapping, and radio telemetry. Retrograde neuron labelling and Confocal Micrography. Time-lapse videography. Analytical and statistical analyses

#### TEACHING EXPERIENCE

2007 Graduate Teaching Assistant. Biology Department. University of Miami, FL. Biology 161. Introduction to Biology Lab 2.

2006 Graduate Teaching Assistant. Biology Department. University of Miami, FL. Biology 250. Genetics.

1998 Undergraduate Teaching Assistant. Bio 540, Herpetology, University of Massachusetts

#### INVITED LECTURES

2006 Behavioral and Cellular Reproduction in Amphibians and Reptiles, & Aberrant Genetic Strategies. Genetics. BIL 250. Biology Department. University of Miami, FL.

2006 Freeze Tolerance and Cold-Hardiness in Amphibians and Reptiles. Environmental Physiology. BIL 423. Biology Department. University of Miami, FL.

2005 The Hydrology of the Everglades. Hydrology. BIL 410. Biology Department. University of Miami, FL.

1996 - present Evolution, Biology, Anatomy, Physiology, Environmental Physiology, Neurobiology and Herpetology; elementary through college level, University of Massachusetts (Amherst), Amherst Middle School (Amherst, MA), Smith Campus School (Northampton, MA), Dean Technical School (Holyoke, MA), Granite House (Quincy, MA) University of Connecticut (Storrs, CT), Hitchcock Center (Amherst, MA), University of Miami (Coral Gables, FL)

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### CURATORIAL EXPERIENCE

- 2003 Curatorial Assistant, Department of Mammalogy, Division of Vertebrate Zoology, American Museum of Natural History, New York, NY
- 2004 - present Collections Council, Miami Museum of Science, Miami, FL
- 1996 - 2002 Museum Assistant, Herpetological and Ichthyological Collections, Massachusetts Museum of Natural History, Bio. Department, University of Massachusetts, Amherst, MA
- 1999 Collection and preparation of specimens for the Ichthyological Collection of the Massachusetts Museum of Natural History, Dauphin Island Sea Lab, Dauphin Island, AL

### ENVIRONMENTAL CONSULTING EXPERIENCE

- 2001 Spotted turtle (*Clemmys guttata*) survey of Lily Pond, Vernon, VT  
Report submitted to Vermont Fish and Wildlife Department, Waterbury, VT
- 1998 Herpetological survey of Satan's Kingdom Wildlife Management Area, Northfield, MA  
Report submitted to Massachusetts Natural Heritage Program, Westboro, MA

### PUBLICATIONS

#### ARTICLES

**Mandica, ML** and AM Richmond. 2000. *Scaphiopus holbrookii* (Eastern Spadefoot) Geographic Distribution. Herpetological Review. 31(2):110.

#### PUBLISHED ABSTRACTS

**Mandica, ML**. 2007. Evidence for an Arrhythmic Activity Pattern in a Florida Bufonid. Society for Integrative and Comparative Biology, Pheonix, AZ.

**Mandica, ML**. 2006. Comparison of Photoperiod Related Activity Patterns and *zeitgeber* of Two South Florida Bufonids. Joint Meeting of Ichthyologists and Herpetologists, New Orleans, LA.

**Mandica, ML**. 2006. Comparison of Photoperiod Related Activity Patterns of Two South Florida Bufonids (Anura: Bufonidae). Society for Integrative and Comparative Biology, Orlando, FL.

Ganser, LR and **ML Mandica**. 2005. Sex Differences in the Brain of the Cane Toad, *Bufo marinus*. Society for Integrative and Comparative Biology, San Diego, CA.

#### PUBLISHED ILLUSTRATIONS

Huber, DR, CL Weggelaar, and PJ Motta. *In review*. Scaling of bite force in the blacktip shark *Carcharhinus limbatus*. Zoology.

Searcy, WA and S Nowicki. 2005. **The Evolution of Animal Communication, Reliability and Deception in Signaling Systems**. Princeton University Press, Princeton, NJ. *Cover illustration and others*.

Simmons, NB. 2005. Chiroptera in **The Rise of Placental Mammals : Origins and Relationships of the Major Extant Clades**. Rose, KD and JD Archibald. The Johns Hopkins University Press, Baltimore, MD.

Huber, DR, TG Eason, RE Hueter, and PJ Motta. 2005. Analysis of the bite force and mechanical design of the feeding mechanism of the durophagous horn shark *Heterodontus francisci*. Journal of Experimental Biology. 208: 3553-3571.

Kelly, D. 2004. The Penis Plan. Science. 1 March 2004.

The Journal of East African Natural History. 2004. Vol 93. *Cover Illustration*.

Dean, MN and PJ Motta. 2004. Feeding Behavior and Kinematics of the Lesser Electric Ray, *Narcine brasiliensis* (Elasmobranchii, Batoidea). Zoology. 107: 171-189.

Fenolio, DB, ME Walvoord, F Andreone, JF Stout, JE Randrianirina. 2004. A new *Platypelis* (Amphibia: Anura: Microhylidae) frog living in treeholes of low-altitude rainforests of the Masoala Peninsula, NE Madagascar. Proceedings of the Biological Society of Washington.

Meyers, JJ, JC O'Reilly, JM Monroy, and KC Nishikawa 2004. Mechanism of tongue protrusion in Microhylid frogs. J. Exp. Biol 207, 21-31.



#### PUBLISHED ILLUSTRATIONS

Landberg, T, J Mailhot, and EL Brainerd. 2003. Lung ventilation during treadmill locomotion in a terrestrial turtle *Terrapene carolina*. *Journal of Experimental Biology* 206: 3391-3304.

Azizi, M and T Landberg. 2002. Effects of Metamorphosis on the Aquatic Escape response of the Two-Lined Salamander, *Eurycea bislineata*, *Journal of Experimental Biology* 205: 841-849.

McCormick, SD. 2001. Endocrine Control of Osmoregulation in Teleost Fish. *American Zoologist* 41:781-794.

Druziski, KA and EL Brainerd. 2001. Buccal oscillation and lung ventilation in a semi-aquatic turtle, *Platysternon megacephalum*. *Zoology* 104: 143-153.

Tentaculata, a newsletter for caecilian researchers, (4) 1999.

#### PRESENTATIONS AT PROFESSIONAL MEETINGS

**Mandica, ML.** 2007. Evidence for an Arrhythmic Activity Pattern in a Florida Bufonid. Society for Integrative and Comparative Biology, Pheonix, AZ.

**Mandica, ML.** 2006. Comparison of Photoperiod Related Activity Patterns and *zeitgeber* of Two South Florida Bufonids. Joint Meeting of Ichthyologists and Herpetologists, New Orleans, LA.

**Mandica, ML.** 2006. Comparison of Photoperiod Related Activity Patterns of Two South Florida Bufonids (Anura: Bufonidae). Society for Integrative and Comparative Biology, Orlando, FL.

Ganser, LR and **ML Mandica.** 2005. Sex Differences in the Brain of the Cane Toad, *Bufo marinus*. Society for Integrative and Comparative Biology, San Diego, CA.

**Mandica, ML** and K McGarigal. 2001. Efficiency and Efficacy of Vernal Pond Amphibian Survey Techniques, presented to the Metropolitan District Commision (Natural Resources Conservation) University of Massachusetts (Amherst, MA).

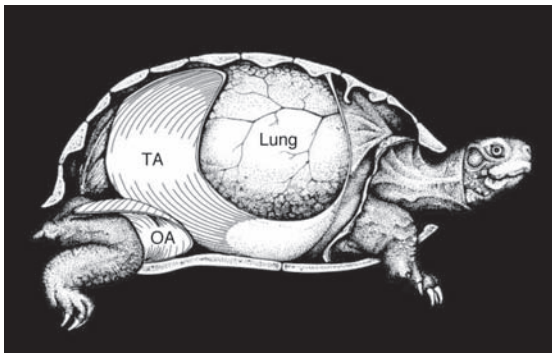
#### ILLUSTRATIONS AT PROFESSIONAL MEETINGS

Ganser LR and GE Gartner. 2003. Histological Analysis of the Harderian Gland of the African Egg-Eating snake, *Dasypeltis*. The International Congress of Vertebrate Morphologists (FAU, Boca Raton, FL).

Ganser LR. 2003. Sex differences in the Brain of the Cane Toad, *Bufo marinus* and the Effects of Atrazine on Sex Differentiation. EPA Star Conference, Washington D.C.

Brainerd EL and T Landberg. 2001. Ventilatory Mechanisms of an Elongate Aquatic Salamander, *Amphiuma tridactylum*. University of Massachusetts (Amherst, MA) The Society for Integrative and Comparative Biology (Chicago, IL).

O'Reilly JC, Kley NJ, Richmond AM, Brainerd EL 2001. Prey Capture Kinematics in *Chelus fimbriatus* (Testudines: Pleurodira) University of Massachusetts (Amherst, MA) The Society for Integrative and Comparative Biology (Chicago, IL).



#### ILLUSTRATION FROM:

Landberg, T, J Mailhot, and EL Brainerd. 2003.

Lung ventilation during treadmill locomotion in a terrestrial turtle *Terrapene carolina*. *Journal of Experimental Biology* 206: 3391-3304.

Kley NJ, JC O'Reilly, AM Richmond, EL Brainerd 1999. Morphological Specializations of the Feeding Apparatus in the Matamata (*Chelus fimbriatus*). The Society for Integrative and Comparative Biology, Division of Vertebrate Morphology, Northeast regional meeting (Providence, RI).

## MARK MANDICA



### GRANTS WRITTEN AND FUNDED

Department of Interior Critical Ecosystems Science Initiative project, Computer Simulation Modeling of Intermediate Trophic Levels for Across Trophic Level System Simulations of the Everglade/Big Cypress Region. Grant provided for graduate tuition, stipend and all supplies.

### GRANTS AND AWARDS

2006 - 2007 Teaching Assistant. Department of Biology. University of Miami, FL  
2003 - 2006 Research Assistant. Department of Interior Critical Ecosystems Science Initiative project, Computer Simulation Modeling of Intermediate Trophic Levels for Across Trophic Level System Simulations of the Everglade/Big Cypress Region.  
2005 - 2007 Provost's Scholarship, University of Miami, Coral Gables, FL  
2005 - 2007 Kriloff Scholarship, University of Miami, Coral Gables, FL  
2005 - 2007 Departmental Travel Scholarship, University of Miami, Coral Gables, FL

### RESEARCH SOCIETIES

The Society for Integrative and Comparative Biology  
The International Congress of Vertebrate Morphology  
American Society of Ichthyologists and Herpetologists  
The Society for the Study of Amphibians and Reptiles  
Tentaculata, Caecilian Research

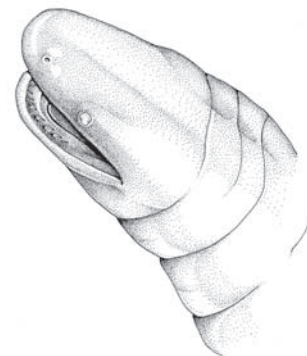
### OTHER PERTINENT EXPERIENCE

2002 Primary care provider of the dendrobatid breeding collection of Black Jungle Breeding Group (Turner's Falls, MA)  
1996 - 2002 Primary care provider of the living herpetological teaching collection, Massachusetts Museum of Natural History, Biology Department, University of Massachusetts  
A strong familiarity with the amphibian and reptile species native to New England and South Florida

### REFERENCES

Dr. John Lu, University of Miami, [zlu@fig.cox.miami.edu](mailto:zlu@fig.cox.miami.edu), 305 284 6813  
Dr. Whit Gibbons, University of Georgia, [gibbons@srel.edu](mailto:gibbons@srel.edu), 803 640 5681  
Dr. Daniel Wang, University of Miami, [yuinqiu@bio.miami.edu](mailto:yuinqiu@bio.miami.edu), 305 282 1298  
Dr. James O'Reilly, University of Chicago, [oreilly@uchicago.edu](mailto:oreilly@uchicago.edu), 305 323 6827

ILLUSTRATION FROM:  
Measey, JG. 2004  
*Boulengerula taitanus*  
Cover of the Journal of East African Natural History  
Volume 93



For more information, or to see my abilities as an illustrator, graphic, and web designer please visit my website: <http://www.mandica.com/>