

# CURRICULUM VITAE

## JAMES ROBERT SPOTILA

Current Position: **Betz Chair Professor of Environmental Science**  
**Director, Center for Biodiversity and Conservation**

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### EDUCATION:

Ph.D. -- 1970 University of Arkansas, Fayetteville, AK; Phi Beta Kappa  
Specialization: Vertebrate Zoology and Physiological Ecology  
Major Professor: John A. Sealander, Professor of Zoology  
BS -- 1966 University of Dayton, Dayton, Ohio  
Cum Laude Major: Biology Minor: Chemistry

### EXPERIENCE:

September 2011- Present **Betz Chair Professor of Environmental Science**, Department of Biodiversity, Earth and Environmental Science, Drexel University  
**Director**, Center for Biodiversity and Conservation

July 2002- September 2011 **Betz Chair Professor of Environmental Science**, Department of Bioscience and Biotechnology, Drexel University  
**Director**, Center for Biodiversity and Conservation

September 1990- July 2002 **Betz Chair Professor of Environmental Science**, Department of Bioscience and Biotechnology and School of Environmental Science, Engineering and Policy  
**Director**, Center for Biodiversity and Conservation (since 1997)

1990-1998 **Scientific Director**, David E. Luginbuhl Research Institute for Endangered Species

January 1999- January 2001 **Chief Environmental Scientist**, U. S. Department of the Army  
Part Time from September, 2000

September 1988- August 1990 **Professor**, Bioscience and Biotechnology, and member of the faculty, Environmental Studies Institute, Drexel University

October 1985- August 1988 **Director**, Aquatic Science Program, Faculty of Natural and Social Sciences, State University College at Buffalo

- June 1984-  
October 1985                    **Associate Director for Fisheries and Ecology**, Great Lakes Laboratory, State University College, Buffalo, New York
- September 1981-  
August 1988                    **Professor**, Department of Biology, State University College, Buffalo, New York
- 1976 - 1981                    **Associate Professor**, Department of Biology, State University College, Buffalo, New York
- 1972 - 1976                    **Assistant Professor**, Department of Biology, State University College, Buffalo, New York
- 1970 - 1972                    **Postdoctoral Fellow**, University of Michigan, Washington University and Missouri Botanical Garden
- Research in the laboratory of David M. Gates, Ph.D. - Past President of AIBS. I was part of an interdisciplinary team of ecologists, agronomists and physicists. I worked on energy budgets and climate spaces of reptiles, mathematical modeling of body temperatures of large reptiles, field studies on alligator body temperatures and analysis of the effect of body size and insulation on the metabolic rates of homeotherms. I also collaborated with Dr. Barry Commoner of Washington University.
- 1966 - 1970                    **Predoctoral Fellow**, University of Arkansas
- Doctoral dissertation entitled: "The Role of Temperature and Water in the Ecology and Distribution of Several Species of Salamanders of the Family Plethodontidae." Research and course work in Ecology, Ichthyology, Fisheries, Mammalogy, Physiology, and Statistics. NASA Predoctoral Fellowship. Teaching assistant in physiology and general biology.
- 1965 - 1966                    **Teaching Assistant**, University of Dayton  
Supervised physiology and genetics laboratories in the Biology Department. Research and course work in biology and chemistry.

## **RESEARCH INTERESTS:**

The research interests of my laboratory are centered in the areas of environmental science, physiological and biophysical ecology and conservation biology. We are studying the thermoregulation of reptiles with the goal of understanding how constraints imposed by the physical environment affect the behavior and physiology of ectothermic vertebrates. We are continuing our research on the population biology and conservation biology of sea turtles. We also are studying the physiological ecology and behavior of giant pandas in China. All of these studies also focus on the impacts of global warming and climate change on these animals and their ecosystems.

Current research involves the physiological and population ecology of sea turtles, the molecular population genetics of sea turtles and other reptiles, and the physiology, ecology and conservation biology of giant pandas in China. The giant panda research is in collaboration with scientists at the Chengdu Research Base of Giant Panda Breeding in Sichuan China.

Research expeditions have included the Green Turtle research expedition aboard the Alpha Helix in Costa Rica and Nicaragua (Aug. - Sept. 1978), during which Edward Standora, Robert Foley and I carried out the first successful radio and sonic telemetry from a sea turtle, along with field research in the southeastern, northeastern, southwestern, and Midwestern sections of the U.S. In 1980, I led a multi-university, team research project that elucidated the effect of temperature-dependent sex determination in sea turtle eggs in Costa Rica on the conservation of sea turtles. In 1981, Edward Standora and I conducted a telemetry project on leatherback turtles off Rhode Island. In 1983, we studied ridley turtle reproduction at Playa Nancite, Costa Rica. In 1989, my research group carried out experiments on the physiological ecology of leatherback turtles at Tortuguero, Costa Rica. Since 1990 we have been studying leatherbacks at Las Baulas National Park on the Pacific coast and on the Caribbean coast of Costa Rica and working with local communities and Costa Rican government authorities to conserve this species.

In 1994, we completed a comprehensive project on the physiological ecology of the desert tortoise at the Desert Tortoise Conservation Center in Las Vegas, Nevada. Experiments on tortoises in large enclosures and free ranging tortoises answered questions about the thermoregulation, physiological responses to stress, reproductive biology, and behavior of these reptiles. This remains the most comprehensive study yet conducted on this species.

In 1997 my student Alison Leslie and I completed a three-year study of the ecology of the Nile crocodile in the Lake St. Lucia estuary in KwaZulu-Natal, South Africa. She studied the physiological ecology of eggs, hatchlings and adults as well as the population ecology of adult and juvenile crocodiles. This included a management plan for the crocodiles that the Natal Parks Board is using to reduce conflicts resulting from interactions between indigenous peoples, recreational fishermen and the crocodiles.

Locally we have worked with the Valley Forge Chapter of Trout Unlimited to study the ecology of trout and the rest of the aquatic community in Valley Creek and Valley Forge National Park. This research has provided the basis for designation of Valley Creek as an exceptional value stream and in preservation of the watershed. It also served as a basis for a NSF funded study on the effects of urban sprawl on the Valley Creek watershed led by Dr. Claire Welty of Drexel.

From 2000 to 2008 we studied the physiology, developmental biology and ecology of turtles in the John Heinz National Wildlife Refuge in Philadelphia. An oil spill at the Refuge affected turtles there and we investigated the effects of the oil and latent PAHs in the sediments on the biology of the turtles.

In 2001 Dr. Harold Avery joined our research group and brought with him a 10-year study on the life history and demography of the desert tortoise in California that he had been conducting for the USGS. In 1998 he had expanded that study to determine the effect of training by the Army at Fort Irwin on the biology of the tortoises. He conducted a study of the ecology of freshwater turtles at the Philadelphia airport and participated in the leatherback turtle project in Costa Rica. Along with this effort Dr. Walter Bien has been working with the Air Force National Guard to study the restoration ecology of the Warren Grove Bombing Range in New Jersey. Located deep in the Pine Barrens this area is the major practice bombing range for the Air Guard on the east coast of the US. It is also the site of some of the most protected habitat in the Pine Barrens. Dr. Bien is carrying out studies on how to restore areas of the Range that have been degraded by illegal use of civilian off road vehicles, on the distribution of rare and endangered plants and animals, and on the use of fire to manage the ecosystem.

In 2004 we received funding to study the use of molecular markers to measure the subclinical stress in plants and animals on Army installations. In 2009 we were funded by NASA for a climate change

education project and in 2008 by the PEW Lenfest Oceans program for an analysis of the interactions of leatherback turtles and fisheries in the Pacific Ocean.

All of these projects are focused on studies related to the physiological ecology of animals that will provide a basis for their conservation. All of our field projects are conducted in concert with local conservation organizations and governmental agencies. In particular, our leatherback project is central to ongoing efforts to preserve this species.

For the last 29 years my laboratory has also been studying the ecology of fish and turtles in New Jersey and Pennsylvania and the fishes, sea turtles, and other aquatic organisms of the New Jersey coast and Delaware Bay. This has involved fishing by hook and line, trawling, seining, gill netting, and trammel netting of specimens. We have also worked cooperatively with pound net fishermen from Newport, Rhode Island to study fish and leatherback turtles.

Since 2007 we have been collaborating with scientists at the Chengdu Research Base of Giant Panda Breeding in Sichuan Province, China to study the ecology and conservation of giant pandas. That project involves the reintroduction of giant pandas born in captivity into the wild.

### **TEACHING ACTIVITIES:**

Areas of expertise include physiological ecology, general ecology, vertebrate physiology, comparative physiology, ichthyology, fisheries biology, vertebrate zoology, biodiversity and conservation and environmental science.

The following new courses were developed and taught at State University College at Buffalo and at Drexel University: Physical Ecology, Physiological Ecology, Behavioral Ecology, Systems Ecology, Quantitative Ecology, Biology of the Cold Blooded Vertebrates, Ichthyology, Fisheries Science, Biological Data Analysis, Biogeography, Zoogeography, Biodiversity and Conservation, Environmental Biology, Population Ecology, Community and Ecosystem Ecology, Bioclimatology, Tropical Ecology, Tropical Field Studies, Global Change I and II and Senior Seminar I, II, and III. In addition, I established a graduate research seminar, taught cell biology, zoology and general biology to freshman majors and environmental biology to non-majors -- not all at the same time.

Of the over 100 undergraduate and graduate students who have studied with me as research students, all have either gone on to graduate or professional school and/or are now professionally employed. Over 70 research articles have been co-authored with students.

### **ADMINISTRATIVE EXPERIENCE:**

#### Chief Environmental Scientist

Two Star equivalent rank. Served as principal advisor to the Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) on matters relating to the Army's 1.5 billion dollar environmental program including, (1) developing the Army's strategy on Environmental Security, (2) long-term strategic planning on matters involving the environment, (3) developing recommendations on how to promote the national defense by improving the environment in a manner consistent with the Army's performance of its central mission, (4) formulating and implementing sound environmental policies in coordination with senior civilian and military leaders, (5) developing and fielding innovative environmental technologies based on user requirements, (6) coordinating the development and implementation of environmental policy with the Department of Defense and other federal agencies such

as the White House Council on Environmental Quality, EPA, Department of Energy, Department of Interior and Department of Agriculture, (7) partnering with state and local governments to develop innovative approaches to environmental issues, (8) effectively communicating Army environmental policy to other branches of government and the public, and (9) developing and executing work plans for the Army Environmental Policy Institute (AEPI).

Accomplishments included development of Army policy and guidelines on Environmental Justice, formulation of an Army policy on "Plain Language," development of an ecosystem management plan to protect the desert tortoise and complete expansion of the National Training Center at Ft. Irwin, CA, policy analysis of natural resource planning for Ft. Huachuca, AZ, development of an Army strategy to protect soldiers from the threat of toxic *Pfiesteria*, development of the AEPI work plan for 1998 and 1999, development of environmental security strategy, coordination with the Council on Environmental Quality, long-term strategic planning, and public speeches and outreach.

#### Director, Joint Center for Biodiversity and Conservation- Drexel University and Academy of Natural Sciences 1994-2011

Responsibilities included leadership for the ecology and biodiversity program that includes 5 Ph.D. level faculty with salaries totaling over \$281,000 annually, 10 Ph.D. Graduate students and 10 master's students with stipends (salary and tuition support) of over \$350,000 annually, and 80 undergraduate students in the environmental science degree program who pay over \$800,000 in tuition annually. Grants and contracts totaled over \$250,000 in 1999. Total annual budget for the program was over \$2,000,000 in 2004. Facilities included research and teaching laboratories, a 25-ft research boat, two other boats, field equipment, a Chevy suburban, a Toyota Land Cruiser and a Subaru Baja

#### Betz Chair Professor of Environmental Science

As Betz Chair Professor, I manage an additional budget of \$300,000 from the University endowment. I also provide leadership for development of the undergraduate and graduate programs in environmental science, mentor junior faculty and research staff, and recruit new graduate students.

#### Laboratory Director

Responsibilities have included the supervision of a Research Associate Professor, up to 3 Ph.D. Research Associates, up to 12 Ph.D. graduate students, 3 masters students and 6 undergraduate students in research studies involving ecology, physiology, and behavior; management of grants totaling up to \$700,000 annually; proposal writing; writing of scientific articles and reports; planning and leading research expeditions; and cooperative research with faculty of the University of Pennsylvania, and the Academy of Natural Sciences of Philadelphia. I currently have 2 Ph.D. and 1 MS student and three Ph.D. level Research Associates.

#### Biology Department at State University College at Buffalo

Chairman pro-tem (Fall semester 1985-1986), Chairman pro-tem of Graduate Faculty and Chairman of the Graduate Committee. Graduate Admissions Coordinator. Director of the Animal Room Facility (1974-1975), Associate Director (1975-1988).

Department Committees -- Curriculum Committee, Appointments Committee, Budget Committee, Ad hoc Committee to formulate personnel policies and new programs, Space and Equipment Committee, Chairman, Personnel Committee (1985-1987).

Major contributions included development of a viable MA (thesis) program in the Biology Department, revision of the program for undergraduate biology majors, expansion and modernization of the animal room facilities, development of Department policies and by-laws, obtaining funds and equipment for department modernization, and developing a procedure for the equitable allocation of space and equipment among faculty, staff and graduate students. The personnel committee handles promotions and tenure decisions.

#### Aquatic Science Program at State University College at Buffalo

Director, Aquatic Science Program. Established and directed a program of research and education in aquatic science, especially of Western New York, Lake Erie and the Niagara River. Coordinated all field activities of the laboratory, use of research vessels, use and maintenance of field station on Lake Erie. Represented the college in dealings with public officials, private groups, organizations, and persons with regard to fisheries and ecology. Wrote proposals and responded to requests for proposals and requests for information. Supervised aquatic biologist/boat operator, graduate students and undergraduates. Program utilized a 38-foot research vessel, two Boston whalers, one electroshocking boat and two small boats. Field station included 3.5 acres of waterfront land, building with wet labs, office and shop. A fisheries laboratory was maintained on campus.

#### Other at State University College at Buffalo

Sigma Xi Club - - President (2 years). Doubled membership, began nomination of student (associate) members, initiated annual Student Research Symposium, established program of lectures, including national lecturers.

#### Drexel University

Chairman of personnel committee 88-89, Chairman of search committees 1988-89, 89-90, Chairman of space committee 89-90, Chairman of industrial liaison committee 89-90, member MSA self study subcommittee on academic support 89-90, member College of Science Dean search committee 89-90, Faculty Senate 1991-1994, Chairman, Graduate subcommittee of Academic Affairs Committee, 1991-1993. Faculty advisor- EYE-Openers student environmental group 1991-1996. Director of the Luginbuhl Institute for Endangered Species 1990-1998. Director of the Joint Center for Biodiversity and Conservation 1997-present. Member of Senate Ad Hoc Committee on Merger with MCP Hahnemann University 2001-2002. Chairman of the Tenure Review Committee 2003-2004, 2008-2009, 2009-2010, 2011-2016, co-chair 2017-2018. Co-Chairman of Search Committee 2010-2011.

#### Environmental Science Undergraduate Program at Drexel University

Director. Revised curriculum to emphasize areas of concentration and give students more flexibility in designing their program. Recruited three new faculty members. Major now has areas of concentration in environmental science, applied ecology, biodiversity and conservation, atmospheric science, environmental education, and marine science. Enrollment rose from 15 in 1988 to 75 in 1995. Liaisons established with businesses and non-profit organizations to increase CO-OP opportunities for students. Cooperative agreement completed with Ministry of Environment of Costa Rica for exchange of faculty and students. Liaisons established with local high schools to improve environmental science education.

#### Summary of Line Management Experience

In the Pentagon I was responsible for personnel actions/evaluations of four professional staff in the Army Secretariat and for evaluation of the programs and 15 personnel of the Army Environmental Policy Institute in Atlanta. At Drexel I was responsible for evaluating three faculty level personnel and 10 graduate students. In the past at Buffalo I was responsible for personnel decisions on as many as 25 staff of the Fisheries and Ecology Program. As Head of personnel committees at Drexel and Buffalo I was responsible for evaluating up to 6 junior faculty in any given year. In terms of budgets, my responsibility in the Army was to oversee the \$62 million conservation and natural resources program and give policy advice on the entire \$1.5 billion environmental program. At Drexel I am responsible for the Betz Chair of Environmental Science budget which is currently about \$300,000 and various grants that in any given year total up to about \$300,000. In Costa Rica, Greece and China I have been responsible for two research teams of three and six people each along with up to ten volunteers. Currently these teams are at two sites on the Pacific coast in Costa Rica, and in Chengdu, China.

#### **OUTSIDE SERVICE:**

**President- 21<sup>st</sup> Annual International Sea Turtle Symposium. 2001**

**Founding President- International Sea Turtle Society, 2001**

**Vice President- The Herpetologist League- 2012- 2014**

**President- The Herpetologist League- 2014-2016**

**Past President and member of the Board- 2017-present**

Member- Tortoise and Freshwater Turtle Specialist Group of the Species Survival Commission of the IUCN

Member of the Sea Turtle Specialist Group of the Species Survival Commission of the IUCN

John Ellerman Scholar- Ellerman Museum, Department of Zoology, University of Stellenbosch, Stellenbosch, South Africa- Oct.- Nov., 1996

Visiting Scientist -1974-1992-Savannah River Ecology Laboratory- research on fish and other aquatic vertebrates

Visiting Assistant Research Professor - 1981-Department of Physiology, SUNY at Buffalo

Adjunct Associate Professor - 1983-1988-Department of Biology, SUNY at Buffalo

Adjunct Professor - 1988-1993-Department of Biology, State College at Buffalo (SUCB)

Research Professor - 1981-1988-Great Lakes Laboratory, SUCB- research on fish of Lake Erie

Scientific Council - 1981-1988-Buffalo Zoo

Volunteer Researcher-1993-1995- New Jersey State Aquarium, Camden, NJ

Research Associate- 2001-2008- Department of Vertebrate Biology, The Academy of Natural Sciences, Philadelphia

**Editorial Board- Journal "Endangered Species Research" 2004- present**

**Editorial Board - Journal "Chelonian Conservation and Biology"- 1995-present**

**Editorial Board- Journal "Integrative Zoology"- 2011- present**

Associate Editor- Journal "Biological Conservation" 2003- 2004

Associate Editor - Journal "Copeia" 1993-1996

Editorial Board - Journal "Conservation Biology" - 1993- 1998

Associate Editor - Journal "Herpetological Monographs" - 1993-94  
Associate Editor - Journal "Herpetologica" - 1982-1984  
Editorial Board - Journal "Herpetologica" - 1980-1981  
BIOSIS-- Editorial Consultant Panel 1990-1993

Ecological Society of America - - Member, Local Organizing Committee IV International Congress of Ecology and Annual Meeting, Syracuse, New York, August 1986  
American Society of Zoologists, Ecology Section, Program Officer 1989-1991  
Member, TC 2.1, Physiology and Human Environment, ASHRAE - - Corresponding 1984-1987, Voting 1987- 1991, Corresponding 1992-1995  
International Sea Turtle Symposium- Scientific Program Chairman, 1995

Member Advisory Board- National Sea Turtle program, Costa Rica, 1991- present  
Member Planning Committee and Financial Committee- Las Baulas de Guanacaste National Park, Costa Rica- 1991- present  
Member- Environmental Task Force, 1995 White House Conference on Small Business- 1994  
Member- Board of Governors, Environmental Technology Academy, Philadelphia High Schools-1992-1996

Congressional Briefing- Endangered Species Act, Northeast Congressional Delegation, Fall 1993  
US AID Briefing- Leatherback Turtles and economic development, April, 1994

Reviewer for research proposals - Department of Energy, National Science Foundation, National Institutes of Health, DOD/DOE SERDP Program, Center for Field Research, among others

Site Review Teams - - NIH: University of Wisconsin, Madison, 1980  
Department of Energy: Battelle, Pacific Northwest Laboratories -Environmental Research 1983;  
Duke University Marine Laboratory - Physiological Ecology Program Review, 1983; Savannah River Ecology Laboratory - Wetlands Program, 1986; University of Wisconsin, Madison, 1987

NSF Panel- Environmental and Evolutionary Physiology, October, 1999

Reviewer for scientific articles- Journals: Science, Nature, Copeia, Journal of Experimental Zoology, Journal of Herpetology, Herpetologica, Ecology, Physiological Zoology, Journal of Thermal Biology, ASHRAE Transactions, among others.

Session Chairman - AIBS National Meeting, 1978; Department of Energy Symposia, 1975,1977,1986; American Society of Ichthyologists and Herpetologists,1987, 1989; American Society of Zoologist's, 1989, 1990, 1991, Symposium Chairman -1987,1989; Herpetologist League, 1994; International Sea Turtle Symposium, 1992, 1993, 1994, 1996, 1997, 1999 and others

Consultant on research and care of reptiles at Buffalo and Philadelphia Zoos  
Consultant on research and rearing of fish at state fish hatchery, Chautauqua Lake, New York

## **HONORS**

### **Phi Beta Kappa**

**Fellow-** American Association for the Advancement of Science

**Full Member-** Society of the Sigma Xi

**Best Paper Award-** ASHRAE 1988 National Meeting



**President's Award for Excellence in Research, Scholarship, and Creativity-** State University College at Buffalo, 1986

**Hat and Jacket Service Award-** New York Southtowns Walleye Association, 1986

**New York Clock Service Award-** New York Walleye Association, 1988

**Outstanding Service Award-** American Society of Zoologists, 1991

**Honorary Member --** National Park Service, Costa Rica, 1993

**Keeper of the Stream --** Trout Unlimited, Valley Forge Chapter, 1993

**"A Pledge and A Promise"- National Environmental Award-** Anheuser-Busch Inc- 2nd Place College Division, "Development of Las Baulas de Guanacaste National Park," 1994

**Alumnus of the Year--** University of Dayton, 1995

**Biodiversity and Conservation Award-** National Park Service, Costa Rica, 1996

**Commander's Medal-** Assistant Secretary of the Army, I&E, 1999

**Certificate of Special Recognition for a Meritorious Conservationist-** Ministry of the Environment and Energy, Costa Rica 2004

**Commendation Award for Exemplary Efforts in Sea Turtle Conservation-** To The Leatherback Trust (James R. Spotila, President) – International Sea Turtle Society, 2004

**Best Book in Biological Sciences-** for “Sea Turtles, A Complete Guide to Their Biology, Behavior and Conservation”, Johns Hopkins Press- from American Association of Publishers 2005

**Best Book in Nature and Environment -** for “Sea Turtles, A Complete Guide to Their Biology, Behavior And Conservation”, Johns Hopkins Press- National Outdoor Book Awards (NOBA), from Association of Outdoor Recreation and Education 2005

**Design Award-** for Saving Sea turtles, Johns Hopkins Press- third place in illustrated text, Washington Book Publishers 2011 Design and Effectiveness Awards

**Design Award-** for Saving Sea Turtles- Association of American University Presses, Book, Jacket and Journal Show. 2012. Trade Typographic category, recognizing design excellence in books for general readers. Its design was created by Amy Ruth Buchanan with production coordination by Carol Eckhart. This prestigious annual show highlights the best designs found in scholarly books and journals published by the AAUP's 130 member presses

**Leatherback and Wave Appreciation Award-** Bullis Charter School, Los Alto, CA 2012

**Lifetime Achievement Award-** International Sea Turtle Society 2012

**President's Award for Research and Conservation-** International Sea Turtle Society- 2017

## **PUBLICATIONS**

Spotila, J. R. and R. J. Beumer. 1970. The breeding habits of the ringed salamander, Ambystoma annulatum (Cope), in Northwestern Arkansas. Amer. Midland Natur. 84:77-89.

Spotila, J. R. and P. H. Ireland. 1970. Notes on the eggs of the gray-bellied salamander, Eurycea multiplicata griseogaster. Southwestern Naturalist 14:366-368.

Spotila, J. R. 1971. Alligators and the energy budgets of large reptiles. Missouri Botanical Garden Bulletin 59:44-48.

Bakken, G. and J. R. Spotila. 1971. Schlieren photography and the energy budget. Missouri Botanical Garden Bulletin 59:53-56.

- Spotila, J. R. 1972. The role of temperature and water in the ecology and distribution of some lungless salamanders. *Ecol. Monogr.* 42:95-125.
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- Spotila, J. R., P. W. Lommen, G. S. Bakken and D. M. Gates. 1973. A mathematical model for body temperatures of large reptiles: implications for dinosaur ecology. *Amer. Natur.* 197:391-404.
- Spotila, J. R. 1974. Behavioral thermoregulation of the American alligator. Pages 322-334 in J.W. Gibbons and R.R. Sharitz (eds.). *Thermal Ecology*. AEC Symposium Series, (COF 730505).
- Spotila, J. R. and D. M. Gates. 1975. Body size, insulation and optimum body temperatures of homeotherms. Chapter 17, Pages 291-301 in D. M. Gates and R.B. Schmerl (eds.). *Perspectives of Biophysical Ecology*. Springer Verlag, New York.
- Terpin, K.M., J.R. Spotila and R.R. Koons. 1976. Effect of photoperiod on the temperature tolerance of the Blacknose Dace, Rhinichthys atratulus. *Comp. Biochem. Physiol.* 53A:241-244.
- Spotila, J. R. and E. Berman. 1976. Determination of skin resistance and role of the skin in controlling water loss in amphibians and reptiles. *Comp. Biochem. Physiol.* 55A: 407-411.
- Hassan, K.C. and J.R. Spotila. 1976. The effect of acclimation on the temperature tolerance of young muskellunge fry. Pages 136-140 in *Thermal Ecology II*. G.W. Esch and R.W. McFarlane (eds.) ERDA Symposium Series (CONF 750425)
- Spotila, J. R. 1976. Courtship behavior of the ringed salamander, Ambystoma annulatum (Cope), Observations in the field. *Southwest Natur.* 21:412-413.
- Spotila, J.R., K.M. Terpin and P. Dodson. 1977. Mouth gaping as an effective thermoregulatory device in alligators. *Nature* 265:235-236.
- Erskine, D.J. and J.R. Spotila. 1977. Heat energy budget analysis and heat transfer in the largemouth blackbass (Micropterus salmoides). *Physiol. Zool.* 50:157-169.
- Bonin, J.D. and J.R. Spotila. 1978. Temperature tolerance of larval muskellunge (Esox masquinongy Mitchell) and F1 hybrids reared under hatchery conditions. *Comp. Biochem. Physiol.* 59A:245-248.
- Terpin, K.M., P. Dodson and J.R. Spotila. 1978. Ketamine hydrochloride as an effective anesthetic for alligators. *Copeia* 1978:147-148.
- Foley, R.E. and J.R. Spotila. 1978. Effect of wind speed, air temperature and body size on evaporative water loss from the turtle Chrysemys scripta. *Copeia* 1978:627-634.
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- Paladino, F.V. and J.R. Spotila. 1978. The effect of arsenic on the thermal tolerance of newly hatched

- muskellunge fry (Esox masquinongy). J. Thermal Biol. 3: 223-227.
- Foley, R.E., J.R. Spotila, J.P. Giesy and C.H. Wall. 1978. Arsenic concentrations in water and fish from Chautauqua Lake, New York. Env. Biol. Fish. 3:73-79.
- Spotila, J.R. and F.V. Paladino. 1979. Toxicity of arsenic to developing muskellunge fry (Esox masquinongy). Comp. Biochem. Physiol. 62 C:67-69.
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- Terpin, K.M., J.R. Spotila and R.E. Foley. 1979. Thermoregulatory adaptations and heat energy budget analysis of the American alligator, Alligator mississippiensis. Physiol. Zool. 52:296-312.
- Spotila, James R. 1980. Constraints of body size and environment on the temperature regulation of dinosaurs. Chapter 8, Pages 233-254 in R.D.K. Thomas and E.C. Olson (eds.) A Cold Look at the Warm-Blooded Dinosaurs. AAAS Symposium Volume 28. Westview Press, Boulder, CO.
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### **Electronic Publications**

Fiorito, D. and J. R. Spotila. 1997. Leatherback Turtle Task Force, Marine Specialist Group, IUCN, web page. [leatherback.org](http://leatherback.org)

Spotila, J. R., A. Steyermark, and F. V. Paladino. 1998. Loss of leatherback turtles from the Las Baulas population, Costa Rica from 1993-1998: Causes and corrective actions. Leatherback Turtle Task Force web page. [leatherback.org](http://leatherback.org)

Spotila, J. R. 2004. CRITTERCAM: Secrets of the Leatherback turtle. CRITTERCAM: Oceans for Life Virtul Teacher Workshop. National Geographic Society, College of Exploration. Nov. 15-19, 2004. <http://coexploration.org/reg/swebsock/0024607/0446912/CCAM/main/center.cml>

Shillinger, G. L., M. Breier, and J. R. Spotila. 2007. [www.GreatturtleRace.com](http://www.GreatturtleRace.com)- A web based conservation event highlighting research and conservation of the leatherback turtle. Over 650,000 individuals visited the website, over 2,500,000 hits, over 18,000,000 people in US and 98,000,000 million worldwide reached by publicity. Highlighted on "The Colbert Report" on Comedy Central, which highlighted students of Drexel University. Raised over \$250,000 for leatherback conservation through The Leatherback Trust. Drexel's turtle in the race, Drexelina, won the student newspaper's ,The Triangle, student spirit award! The most successful web based conservation effort to date.

Spotila, J. R., G. Blanco, G. L. Shillinger, G. L., M. Milne, and M. Breier, 2008. **The Great Turtle Race II** [www.GreatturtleRace.com](http://www.GreatturtleRace.com)- A web based conservation event highlighting research and conservation of the leatherback turtle. Over 500,000 individuals visited the website, over 1,000,000 hits, over 5,000,000 people in US and 20,000,000 worldwide reached by publicity. Raised over \$150,000 for leatherback conservation through The Leatherback Trust. Drexel's turtle in the race, Drexelina, came in second in the race. The second most successful web based conservation effort to date (1st was Great Turtle Race I)

### **Editorial Opinion Pieces**

Spotila, J. R. 1991. Saving Costa Rica's Biological Wealth Means Saving its Sea Turtles. TICO Times,

April 12, 1991.

Spotila, J. R. 1992. Saving the earth for and from mankind. Philadelphia Inquirer. September 16, 1992.

Spotila, J. R. 1995. Higher Park Fees: A Good First Step to Save Parks and Tourism, TICO Times, February 24, 1995.

Spotila, J. R. 1995. GOP agenda: Only the rich will clean up. Philadelphia Daily News, March 31, 1995.

Spotila, J. R. 1995. Protect the Pinelands. Courier Post, NJ, April 13, 1995.

Spotila, J. R. 1996. Which New Jersey Representatives vote for the Environment? Courier Post, NJ, August 22, 1996.

Spotila, J. R., S. Kilham, H. Avery and W. Bien. 2002. MacArthur trees can't be replaced. Courier-Post, NJ March 10, 2002.

Spotila, J. R. 2004. Oil spill preventable. Philadelphia Inquirer, December 7, 2004

### **Performance Piece**

**The Great Turtle Race kickoff event** in Great Court of Main Building. Four turtles, a jellyfish, a plastic bag, a shark a fisherman and a student playing Dr. Spotila reenacted the migration of leatherback turtles from their nesting beach to their feeding grounds. Television coverage of the hundreds of students, faculty and staff participating in the event made the local news.

### **Other Publications from my Laboratory (since 1992)**

Paladino, F. V., E. A. Standora, and S. J. Morreale. 1992. Tracking endangered species. Environ. Sci. and Tech. 26: 424-426.

Boza, M. A. 1993. Conservation in action: Past, present, and future of the National Park System in Costa Rica. Conservation Biology 7: 239-247.

Grumbles, J. S., M. P. O'Connor, L. C. Zimmerman, D. C. Rostal, V. A. Lance, and L. Jackintell. 1993. Occurrence and treatment of upper respiratory tract disease at the Desert Tortoise Conservation Center, Las Vegas, Nevada. pp 38-46. In: Proceedings of the 1992 Desert Tortoise Council Symposium.

Bulova, S. J. 1993. Observation on burrow use by captive desert tortoises. pp. 143-150. In: Proceedings of the 1992 Desert Tortoise Council Symposium.

Bulova, S. J. 1994. Patterns of burrow use by desert tortoises: gender differences and seasonal trends. Herp. Monogr. 8: 133-143.

Plotkin, P. T., D. W. Owens, R. A. Byles, and R. Patterson. 1996. Departure of male olive ridley turtles

- (Lepidochelys olivacea) from a nearshore breeding area. *Herpetologica* 52:1-7.
- Lutcavage, M., P. Plotkin, B. Witherington, and P. Lutz. 1996. Human impacts on sea turtle survival. Chapter In: Lutz, P. and J. Musick (eds.). *The Biology of Sea Turtles*. CRC Press, Boca Raton, FL.
- Bulova, S.J. 1997. Conspecific chemical cues influence burrow choice by desert tortoises (Gopherus agassizii). *Copeia* 1997: 802-810.
- Ortiz, R., P. T. Plotkin, and D. W. Owens. 1997. Predation on olive ridley sea turtles by the American crocodile at Playa Nancite, Costa Rica. *Chelonian Conser. Biol.* 2: 585-587.
- Plotkin, P. T., D. C. Rostal, R. A. Byles, and D. W. Owens. 1997. Reproductive and developmental synchrony in female Lepidochelys olivacea. *J. Herpetology* 31: 17-22.
- Plotkin, P. T. 1998. Interaction between behavior of marine organisms and the performance of satellite transmitters: A marine turtle case study. *Marine Tech. Soc. J.* 32: 5-10.
- Plotkin, P. T. (editor) 1998. National Marine Fisheries Service and U. S. Fish and Wildlife Service Status Reviews for Sea Turtles listed under the Endangered Species Act of 1973. National Marine Fisheries Service, Silver Spring, MD.
- Pritchard, P. C. H. and P. T. Plotkin. 1998. Status of the olive ridley sea turtle (Lepidochelys olivacea). In: Plotkin, P. T. (editor) In Press. National Marine Fisheries Service and U. S. Fish and Wildlife Service Status Reviews for Sea Turtles listed under the Endangered Species Act of 1973. National Marine Fisheries Service, Silver Spring, MD.
- Southwood, A. L., R. D. Andrews, M. E. Lutcavage, F. V. Paladino, N. H. West, R. H. George, and D. R. Jones. 1999. Heart rates and diving behavior of leatherback sea turtles in the eastern Pacific Ocean. *J. of Experimental Biology* 202: 1115-1125.
- Reina, R. D. & Cooper, P. D. (2000) Control of salt gland activity in the hatchling green sea turtle *Chelonia mydas*. *J. Comp. Physiol B* 170:27-35.
- Reina R. D. 2000. Salt gland blood flow in the hatchling green turtle, *Chelonia mydas*. *J. Comp. Physiol B*: 170:573-580.
- Mortimer, J. A., M. Donnelly, and P. T. Plotkin. 2000. Sea Turtles. Chapter 111, 59-71, In Seas at the Millennium: An Environmental Evaluation, Volume III Global Issues and Processes, C. R. C. Shepard (ed), Pergamon Press, London, UK
- Corser, J. D. 2001. Decline of disjunct green salamander (*Aneides aeneus*) populations in the southern Appalachians. *Biol. Conserv.* 97: 119-126.
- Lance, V. A., J. S. Grumbles, and D. C. Rostal. 2001. Sex differences in plasma corticosterone in desert tortoises, *Gopherus agassizii*, during the reproductive cycle. *J. Exp. Zoology* 289: 285-289
- Paladino, F. V. and S. J. Morreale. 2001. Sea Turtles, in *Encyclopedia of Ocean Sciences*, 18 p.
- Drake, D. L., M. A. Hagerty, J. E. Behm and S. J. Goldenburg. 2001. *Lepidochelys olivacea* (Olive Ridley Sea Turtle) predation. *Herp. Rev.* 32: 104.

- IUCN 2001. A Marine turtle conservation strategy and action plan for the Northern Indian Ocean. IUCN/SSC Marine Turtle Specialist Group Publication No. 3, 33 p. 1725 De Sales Street NW #600, Washington, DC ( Pamela Plotkin)
- Vagelli, A. A. and M. V. Erdmann. 2002. First comprehensive ecological survey of the Banggai cardinalfish, *Pterapogon kauderni*. Environ. Biol. Fishes 63: 1-8.
- Soslau, G., P. J. Prest, R. Class, R. George, F. Paladino, and G. Violetta. 2005. Comparison of sea turtle thrombocyte aggregation to human platelet aggregation in whole blood. Comparative Biochemistry and Physiology, part B 142: 353-360.
- Southwood, A. L., R. D. Reina, V. S. Jones, J. R. Speakman and D. R. Jones. 2006. Seasonal metabolism of juvenile green turtles (*Chelonia mydas*) at heron Island, Australia. Canadian Journal of Zoology 84: 125-135.
- Suryan, R. M., V. S. Saba, B. P. Wallace, S. A. Hatch, M. Frederiksen and S. Wanless. 2009. Environmental forcing on life history strategies: Evidence for multi-trophic level responses at ocean basin scales. Progress in Oceanography 81: 214-222.
- Wallace, B. P. and V. S. Saba. 2009. Environmental and anthropogenic impacts on intra-specific variation in leatherback turtles: opportunities for targeted research and conservation. Endangered Species Research 7:11-21.
- Wnek, J. P., W. F. Bien, H. W. Avery. 2013. Artificial nesting habitats as a conservation strategy for turtle populations experiencing global change. Integrative Zoology manuscript online: 12 MAR 2013,
- Roe, J. H., P. R. Clune, and F.V. Paladino. 2013. Characteristics of a leatherback nesting beach and implications for coastal development. Chelonian Conservation and Biology 12: 34-43.
- Schick, R. S., J. J. Roberts, S. A. Eckert, P. N. Halpin, H. Bailey, F. Chai, L. Shi, and J. S. Clark. 2013. Pelagic movements of Pacific leatherback turtles (*Dermochelys coriacea*) highlight the role of prey and ocean currents. Movement Ecology 1:11, 1-14.
- Willis-Norton, E., E. L. Hazen, S. Fossette, G. Shillinger, R. R. Rykaczewski, D. G. Foley, J. P. Dunne, and S. J. Bograd. 2014. Climate change impacts on leatherback turtle pelagic habitat in the Southeast Pacific. Deep-Sea Research II: In Press.
- Dornfeld, T.C., Robinson, N.J., Santidrián Tomillo, P. and Paladino, F.V. 2015. Ecology of solitary nesting olive ridley sea turtles at Playa Grande, Costa Rica. Marine Biology 162:123-139.
- Jacob Hill 2014. Internesting dive behavior and population structure of hawksbill sea turtles (*Eretmochelys imbricate*) on St. Croix USVI. IPFW MS Thesis
- Chelsea Clyde-Brockway 2014. Inter-nesting and post-nesting movements and behavior of East Pacific green turtles (*Chelonia mydas agassizi*) from Playa Cabuyal, Guanacaste, Costa Rica. MS Thesis IPFW
- Thomas F. Backof 2014. Tracking and analysis of the spatial and thermal habitats of inter-

- nesting loggerheads (*Caretta caretta*) in Kyparissia Bay, Greece. MS Thesis IPFW
- Jacob Bryan 2014. Concentrations of heavy metals in scute samples from nesting female olive ridley, *Lepidochelys olivacea*, and eastern Pacific green, *Chelonia mydas agassizii*, sea turtles in Costa Rica. MS Thesis IPFW
- Ariel Z. Cyrus 2014. Predatory behavior and ecology of *Agaronia propatula*, a marine gastropod predator inhabiting dissipative sandy beaches on the Pacific side of Central America. MS Thesis IPFW.
- Keene, E., T. Soule, and F. Paladino, 2014, Microbial isolations from olive ridley (*Lepidochelys olivacea*) and East Pacific green (*Chelonia mydas agassizii*) sea turtle nests in Pacific Costa Rica, and testing of cloacal fluid antimicrobial properties. *Chelonian Conservation and Biology*13(1): In Press.
- Nathan J. Robinson 2014. Migratory ecology of sea turtles. Ph. D. Thesis Purdue University
- Jennifer Swiggs 2015. The effect of incubation conditions on leatherback (*Dermochelys coricea*) and green (*Chelonia mydas*) sea turtle hatchling survival. MS Thesis IPFW
- Julianne Koval May 2015. Use of microsatellites to compare solitary vs arribada nesting olive ridley turtles (*Lepidochelys olivacea*) along the Pacific coast of Costa Rica. MS Thesis IPFW
- Cyrus, A Z., J. Swiggs, P. Santidrian Tomillo, F.V. Paladino, and W. Peters. 2015. Cannibalism causes size-dependent intraspecific predation pressure but does not trigger autotomy in the intertidal gastropod *Aragona propatula*. *Journal of Molluscan Studies* (2015)1-9, doi:10.1093/mollus/eyv007

## GRANTS:

Prior to 1977 - Eleven grants

### 1977-1989

National Science Foundation, 1977, \$10,675, Body Temperatures of Green Turtles (*Chelonia mydas*) While Swimming and Active on Land, Part of proposal to NSF for "Tortuguero - Green Turtle Expedition - R/V Alpha Helix, 1978," Henry Prange, Project Leader.

Department of Energy, 1978, \$38,680, Continuation of Studies on Thermoregulation of Fish and Turtles in Thermally Stressed Habitats.

Department of Energy, 1979, \$41,000, Continuation of Studies on Thermoregulation of Fish and Turtles in Thermally Stressed Habitats.

Department of Interior, 1980, \$18,075, Effect of Incubation Temperature on the sex of Hatchling Caribbean Green Turtles (*Chelonia mydas*) and Pacific Ridley Turtles (*Lepidochelys olivacea*) on Their Nesting Beaches and Under Hatchery Conditions, in Costa Rica -- with Edward A. Standora.



Department of Energy, 1980, \$44,979, Integrative Studies of Thermoregulation in Ectothermic Vertebrates in Aquatic Habitats.

Department of Energy, 1981, \$56,220, Continuation of Integrative Studies of Thermoregulation in Ectothermic Vertebrates in Aquatic Habitats.

Department of Energy, 1982, \$49,429, Integrative Studies of Thermoregulation in Ectothermic Vertebrates in Aquatic Habitats.

World Wildlife Fund, U.S., 1983, \$1,500, Role of Soil Characteristics and Bacteria in Reduced Hatchling Success of Olive Ridley Arribada Nests -- with Linda Lennox and Edward Standora.

Department of Energy, 1983, \$50,000, Integrative Studies of Thermoregulation in Ectothermic Vertebrates in Aquatic Habitats -- with Edward A. Standora.

American Society of Heating, Refrigerating and Air Conditioning Engineers, 1984, \$10,531, Thermal Comfort of the Elderly-- with Kris Cena, McMaster University.

National Science Foundation, 1984, \$120,000, Heat Shock Proteins and Thermal Tolerance in Vertebrate Ectotherms -- with Douglas P. Easton

Department of Energy, 1984, \$55,000, Integrative Studies of Thermoregulation in Ectothermic Vertebrates in Aquatic Habitats - with Edward A. Standora.

American Society of Heating, Refrigerating and Air Conditioning Engineers, 1985, \$90,000, Thermal Comfort of the Elderly: Effects of Activity and Psychological Factors - with K. Cena, McMaster University.

Department of Energy, 1985, \$55,000, Thermoregulation of Fish and Other Aquatic Vertebrates in Thermally Stressed Habitats -- with E. A. Standora.

Occidental Chemical Corporation, 1985, \$3,880, Terrestrial Ecology of Hooker Chemical Center, Niagara Falls, New York -- with J. Penalosa.

New York State Department of Environmental Conservation, 1985, \$5,000, Smokes Creek Spawning and Hazardous Substances Study.

New York State Department of Environmental Conservation, 1986, \$10,000, Continuation of Smokes Creek Spawning and Hazardous Substances Study.

Western New York Economic Development Corporation, 1986, \$19,000, Development of a Pilot Artificial Reef Near Buffalo, New York.

U.S. Fish and Wildlife Service, Cortland, NY, 1986, \$17,000, Logistical Support for Studies and Surveys by the Service.

Department of Energy, 1986, \$65,000, Constraints of Bioenergetics on the Ecology and Distribution of Vertebrate Ectotherms -- with E.A. Standora.

U.S. Fish and Wildlife Service, Cortland, NY, 1987, \$73,000, Survey of Effects of Contaminants in Fish in the Niagara River, Cooperative Agreement.

Erie County, NY, 1987, \$6,000, Walleye spawning and movement in Lake Erie near Buffalo, NY.

Occidental Chemical Corporation, 1987, Open Contract -- Effect of a PCB Incinerator on the biota of Niagara Falls, NY and vicinity.

New York Walleye Association, 1987, \$1,000, Movement of walleye in Lake Erie near Buffalo, NY.

Southtowns Walleye Association, 1987, \$750, Movement of walleye in Lake Erie near Buffalo, NY.

E.I. Dupont Inc., Niagara Falls, NY, 1987, \$3,500, Fish survey of Gill Creek, NY.

National Science Foundation, College Science Instrumentation Program, 1987, \$46,872 (with matching amount from College) -- Improving an Undergraduate Interdisciplinary Aquatic Science Program on Lake Erie and the Niagara River.

Department of Energy, 1988, \$112,820, Constraints of Bioenergetics on the Ecology and Distribution of Vertebrate Ectotherms.

Caribbean Conservation Corporation, 1989, \$8000, Physiological Ecology of the Leatherback Turtle -- with F.V. Paladino.

## **1990**

Caribbean Conservation Corporation, 1990, \$9000, Physiological Ecology of the Leatherback Turtle -- with F.V. Paladino and M. P. O'Connor

National Science Foundation, 1990, \$60,976, Improving an Undergraduate Program in Ecology-- \$60,976 matching from Drexel University

David Luginbuhl Research Institute for Endangered Species, 1990, \$16,440, Establishment of Luginbuhl Research Institute.

## **1991**

Nature Conservancy, 1991, Conservation Biology of the Desert Tortoise in the Las Vegas, Nevada Area, \$487,969-- with M. P. O'Connor, D. E. Ruby

National Science Foundation, 1991, \$105,000, Thermoregulatory Capabilities of the Leatherback Turtle, Dermodochelys coriacea-- with M. P. O'Connor, F. V. Paladino

World Wildlife Foundation, 1991, \$15,000, Population Biology of the Leatherback Turtle on the Pacific Coast of Costa Rica-- with Anny Chaves, U. of Costa Rica, award to U.C.R.

National Geographic Society, 1991, \$24,170, Satellite Telemetry, Zoogeography and Physiology of the Leatherback Turtle, Dermodochelys coriacea-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

Caribbean Conservation Corporation, 1991, \$4500, Physiological Ecology of the Leatherback Turtle -- with F.V. Paladino and M. P. O'Connor.

Hansen Co., 1992, \$730, Fisheries Research – for research in Costa Rica.

## 1992

National Geographic Society, 1992, \$25,000, Satellite Telemetry, Zoogeography and Physiology of the Leatherback Turtle, Dermodochelys coriacea-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

Earthwatch Inc, 1992, \$60,000, Ecology of leatherback turtles at Playa Grande, Costa Rica-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

## 1993

Earthwatch Inc, 1993, \$64,000, Ecology of leatherback turtles at Playa Grande, Costa Rica-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

National Geographic Society, 1993, \$26,898, Satellite Telemetry, Zoogeography and Ecology of the Leatherback Turtles-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

Nature Conservancy, 1993, \$60,000, Conservation biology of the desert tortoise in Las Vegas, Nevada. with M. P. O'Connor.

Pennsylvania Environmental Defense Foundation, 1993, \$2,000, Ecology of brown trout in Valley Creek. with Stanley Kemp.

## 1994

Nature Conservancy, 1994, \$5,750, Conservation biology of the desert tortoise in Las Vegas, Nevada. with M. P. O'Connor.

Valley Forge Trout Unlimited, 1994, \$2,000, Ecology of brown trout and urbanization of the Valley Creek watershed. with Stanley Kemp.

Earthwatch Inc, 1994, \$65,000, Ecology of leatherback turtles at Playa Grande, Costa Rica-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

Earthwatch Inc., 1994, \$38,000, Ecology of the Nile crocodile, Crocodylus niloticus, in the St. Lucia Lake ecosystem, Natal, South Africa. with Alison Leslie. Award to Leslie.

## 1995

Earthwatch Inc., 1995, \$45,000, Ecology of leatherback turtles at Playa Grande, Costa Rica-- with Frank V. Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino.

Earthwatch Inc., 1995, \$38,000, Ecology of the Nile crocodile, Crocodylus niloticus, in the St. Lucia Lake ecosystem, Natal, South Africa. with Alison Leslie. Award to Leslie

National Geographic Society, 1995, \$19,000, Conservation and ecological geography of the olive ridley turtle (Lepidochelys olivacea) in the Indian Ocean- with Pamela Plotkin, Drexel University, award to Plotkin as PI.

## 1996

Valley Forge Trout Unlimited, 1996, \$2,000, Home range and movement of brown trout in Valley Creek. with Jason Knouft.

Earthwatch Inc., 1996, \$59,000, Ecology and migration of the leatherback turtle, Dermodochelys coriacea- with Frank Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino

Earthwatch Inc., 1996, \$32,280, Ecology of the Nile crocodile, Crocodylus niloticus, in the St. Lucia Lake ecosystem, Natal, South Africa. with Alison Leslie. Award to Leslie.

National Science Foundation, 1996, \$49,899, Development of an undergraduate molecular ecology program.

National Marine Fisheries Service, 1996, \$24,950, In water population survey of sea turtles in Delaware Bay. with Pamela Plotkin.

National Marine Fisheries Service, 1996, \$ 4,835, Population survey and nest hatching success of leatherback turtles at Playa Langosta, Las Baulas National Park, Costa Rica. with Pamela Plotkin.

National Marine Fisheries Service, 1996, \$4,950, Aerial Survey of leatherback turtles on the Pacific coast of Costa Rica. with Pamela Plotkin.

Sigma Xi, 1996, \$475, Environmental and genetic influences on snapping turtle hatchlings. grant to Anthony Steyermark.

## 1997

Earthwatch Inc., 1997, \$57,000, Ecology and migration of the leatherback turtle, Dermodochelys coriacea- with Frank Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino

National Marine Fisheries Service, 1997, \$4,835, Aerial Survey of leatherback turtles on the Pacific coast of Costa Rica. with Richard Reina and Pamela Plotkin.

American Museum of Natural History, 1997. \$1,000, Geographic variation of thermoeology in the *Plethodon glutinosus* complex, award to Jennifer Elwood.

## 1998

Earthwatch Inc., 1998, \$53,000, Ecology and migration of the leatherback turtle, Dermodochelys coriacea- with Frank Paladino, Indiana-Purdue University, Fort Wayne, award to Paladino

Department of the Army, 1998, \$196,283. IPA Agreement. Chief Environmental Scientist, Department of the Army. Paid as grant to Drexel University. Spotila detailed to Secretary of Army in Pentagon. (Innovative technologies, cost-effective approaches to environmental compliance and risk-reduction, policies and strategies protective of human health)

Smith Kline Beecham, 1998, \$10,000, Support for Center for Biodiversity and Conservation, award to Michael Gealt (through Development)

Academy of Natural Sciences of Philadelphia, \$882, Center for Biodiversity and Conservation.

## **1999**

Department of the Army, 1999, \$206,000 IPA Agreement. Chief Environmental Scientist, Department of the Army. Paid as grant to Drexel University. Spotila detailed to Secretary of Army in Pentagon. (Innovative technologies, cost-effective approaches to environmental compliance and risk-reduction, policies and strategies protective of human health)

EARTHWATCH, 1999, \$50,000, Nesting ecology of the leatherback turtle in Costa Rica. Co-PI, award to F.V. Paladino

National Marine Fisheries Service, 1999, \$5,000, Aerial Survey of leatherback turtles on the Pacific coast of Costa Rica. with Richard Reina.

Academy of Natural Sciences of Philadelphia, \$2,482, Center for Biodiversity and Conservation.

Department of the Army, December 1999, \$49,252.36, Expediting the processing and payment of claims for damages resulting from a chemical weapons accident. with Lesca Strickland and Michael Gealt.

## **2000**

Charis Corporation, 2000, \$151,955, Coordination of desert tortoise studies, data management and peer review, Ft. Irwin.

EARTHWATCH, 2000, \$50,000, Nesting ecology of the leatherback turtle in Costa Rica. Co-PI, award to R. Reina and Frank Paladino (to Indiana Purdue University at Fort Wayne).

Academy of Natural Sciences of Philadelphia, \$2,482, Center for Biodiversity and Conservation.

New Jersey Air National Guard, 2000, \$1,800, Monitoring of pine restoration areas, Warren Grove Bombing Range. award to Walter Bien.

SUNOCO, 2000, \$50,000. Effects of crude oil on the ecology, behavior, physiology, and reproduction of turtles in the John Heinz National Wildlife Refuge. with Barabara Bell and Vince Saba.

Department of the Army, 2000, \$232,242 IPA Agreement for Lesca Strickland. Special Assistant, Department of the Army. Paid as grant to Drexel University. Strickland detailed to Secretary of Army in Pentagon. Assists and advises the Office of the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) on matters relating to the Chemical Stockpile Emergency Preparedness Program (C-SEPP).

New Jersey Air National Guard, \$18,000, Restoration of a helicopter landing area with native vegetation, Warren Grove Bombing Range. award to Walter Bien.

ERM Foundation, \$5,000, John Heinz Wildlife Refuge improvement and environmental education partnership project. Barbara Bell (with J. R. Spotila)

## **2001**

Charis Corporation, 2001, \$232,465, Desert tortoise studies: Review, telemetry, demography. With Harold Avery

US Navy, \$5,000, Develop a report on the distribution and abundance of sea turtles worldwide.

EARTHWATCH, 2001, \$50,000, Nesting ecology of the leatherback turtle in Costa Rica. Co-PI, award to R. Reina and Frank Paladino (to Indiana Purdue University at Fort Wayne).

ERM Foundation, \$4,910, Partnership project to improve the environment of the John Heinz Wildlife Refuge. Barbara Bell (with J. R. Spotila)

Department of the Army, 2001, \$125,967 IPA Agreement for Lesca Strickland. Special Assistant, Department of the Army. Paid as grant to Drexel University. Strickland detailed to Secretary of Army in Pentagon. Assists and advises the Office of the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) on matters relating to the Chemical Stockpile Emergency Preparedness Program (C-SEPP).

## **2002**

EARTHWATCH, 2002, \$50,000, Nesting ecology of the leatherback turtle in Costa Rica. Co-PI, award to R. Reina and Frank Paladino (to Indiana Purdue University at Fort Wayne).

ERM Foundation, \$4,910, Partnership project to improve the environment of the John Heinz Wildlife Refuge. Barbara Bell (with J. R. Spotila)

US Air National Guard, 2002, \$144,890, Ecological studies at Warren Grove Range, New Jersey, Walter Bien (with J.R. Spotila)

Department of the Army, 2002, \$125,967 IPA Agreement for Lesca Strickland. Special Assistant, Department of the Army. Paid as grant to Drexel University. Strickland detailed to Secretary of Army in Pentagon. Assists and advises the Office of the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) on matters relating to the Chemical Stockpile Emergency Preparedness Program (C-SEPP).

## **2003**

US Air National Guard, 2003, \$348,800, Ecological studies at Warren Grove Range, New Jersey, Walter Bien (with J.R. Spotila)

EARTHWATCH, Ecology of the Desert Tortoise, \$35,000, Harold W. Avery and James R. Spotila,

EARTHWATCH, Nesting ecology of the leatherback turtle in Costa Rica. \$75,000 Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne) 2003-2004

Subaru of America- Loan of a field research vehicle- Baja- \$3,500

## **2004**

EARTHWATCH, Ecology of the Desert Tortoise, \$19,596 Harold W. Avery and James R. Spotila,

EARTHWATCH, Nesting ecology of the leatherback turtle in Costa Rica. \$80,000 Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne) 2004-2005,

US Air National Guard, 2003, \$175,000, Ecological studies at Warren Grove Range, New Jersey, Walter Bien (with J.R. Spotila)

ODASA (I&E) – ESOH Technology Programs and Examination of Biotechnology to Assess Effect of Training Activities at Military Installations on Endangered Species and the Environment, James R. Spotila, Harold W. Avery, Shivanti Anandan and Jeremy Lee. CTC Corporation- Pass through from Office of Assistant Secretary of the Army May 2004- May 2005 \$422,471

Subaru of America- Loan of a field research vehicle- Baja- \$3,500

City of Philadelphia, Philadelphia International Airport, Division of Aviation, Red-bellied turtle (*Pseudemys rubiventris*) population study at the Philadelphia International Airport. H. W. Avery, J. R. Spotila and W. F. Bien, \$99,600

## **2005**

US Army Reserves- IPA Assignment Agreement for Lesca Strickland. J. R. Spotila, \$422,948.82

New Jersey Air National Guard- Avian survey at Warren Grove Range, W. F. Bien and J. R. Spotila, \$81,000

Subaru of America- Donation of a field vehicle- Baja- \$12,455

Pennsylvania Sea Grant- Survey of red eared slider turtles, *Pseudemys scripta* in Eastern Pennsylvania, Harold Avery PI, Spotila, co-PI \$10,000

## **2006**

Pennsylvania Department of Conservation and Natural Resources- Range Determination and Inventory of threatened red-bellied turtles and invasive red-eared slider turtles. Harold Avery PI, J. R. Spotila and W. F. Bien, CO-PIs. \$30,034

New Jersey Air National Guard- Avian survey at Warren Grove Range, W. F. Bien PI and J. R. Spotila Co-PI, \$81,000

EARTHWATCH, 2005-2006, \$80,000, Nesting ecology of the leatherback turtle in Costa Rica. Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne).

EARTHWATCH -Ecology of diamondback terrapin in Barnegat Bay. PI Harold Avery, CO-PI Spotila. \$48,000

## **2007**

**IPA Assignment Agreement for Lesca Strickland. J. R. Spotila, US Army Reserves. \$672,821**

**Range Determination and Inventory of threatened red-bellied turtles and invasive red-eared slider turtles.** H. W. Avery, J. R. Spotila and W. F. Bien, Pennsylvania Department of Conservation and Natural Resources. \$30,034

**Expanded Range Determination and Inventory of threatened red-bellied turtles and invasive red-eared slider turtles.** H. W. Avery, J. R. Spotila and W. F. Bien, Pennsylvania Department of Conservation and Natural Resources. \$74,925

**Avian survey at Warren Grove Range.** W. F. Bien and J. R. Spotila, New Jersey Air National Guard, **\$81,000**, February 2007-March 2008

**EARTHWATCH, 2006-2007, \$50,000, Nesting ecology of the leatherback turtle in Costa Rica.** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne).

**EARTHWATCH, 2007, \$48,000, Ecology of Diamondback terrapin in Barnegat Bay.** PI Harold Avery, CO-PI Spotila

## **2008**

**IPA Assignment Agreement for Lesca Strickland.** J. R. Spotila, US Army Reserves. 2007-2008-**\$473,468**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2007-2008, **\$60,000**. No overhead

**Population ecology of diamondback terrapin in Barnegat Bay.** PI Harold Avery, CO-PI James Spotila, EARTHWATCH, 2008, **\$56,375**.

**Interactions of Leatherback Turtles and Fisheries in the Pacific Ocean.** PI James Spotila, CO-PIs- several. Lenfest Ocean Program, 2009-2010, **\$575,000**

## **2009**

**From Earth to the Sky, Experiential Learning in Climate Change.** PI J.R.. Spotila, CO-PIs H.W. Avery, M. P. O'Connor, E. Haslam, F. House. NASA, **\$585,000**.

**Population ecology of diamondback terrapin in Barnegat Bay.** PI Harold Avery, CO-PI James Spotila, EARTHWATCH, 2009, **\$50,000**.

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2009-2010, **\$60,000**.

## **2010**

**Population ecology of diamondback terrapin in Barnegat Bay.** PI Harold Avery, CO-PI James Spotila, EARTHWATCH, 2009, **\$50,000**.



**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2011**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2012**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2013**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$50,000**.

**2014**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2015**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2016**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

**2017**

**Nesting ecology of the leatherback turtle in Costa Rica** Co-PI, award to Frank Paladino (to Indiana Purdue University at Fort Wayne), EARTHWATCH 2010, **\$55,000**.

## **RESEARCH STUDENTS:**

### **Graduate Students Completed Since 1991**

- Yu, Z. 1991. Development of Mouse B Lymphocyte-Myeloma Cell Hybridomas for Production of Monoclonal Antibodies against HSP-70 of the Salamander *Plethodon cinereus*. MS Drexel University.
- Leslie, A. 1993. Nesting Ecology of the Leatherback Turtle, *Dermochelys coriacea*, at Tortuguero, Costa Rica. MS Drexel University.
- Beyer, E.C. 1993. Seasonal Variation in Metabolic Rates and Maintenance Costs of the Eastern Fence Lizard, *Sceloporus undulatus*. MS Drexel University.
- Cunningham, S. 1993. Seasonal Variation in Heat Shock Proteins (hsp 70) in Stream Fish under Natural Conditions. MS Environmental Studies Institute. Drexel University.
- Niblick, H. 1994. Behavioral Ecology of the Desert Tortoise, *Gopherus agassizii*. MS Drexel University.
- Steyermark, A.C. 1994. Biomarkers Indicate the Health of Brown Bullheads, *Ictalurus nebulosus*, in the Industrialized Schuylkill River, Philadelphia, Pennsylvania. MS Drexel University.
- Kemp, S.J. 1994. Effects of Urbanization on Fish Communities in Valley Creek, Valley Forge, PA. MS Drexel University.
- Yu, Z. 1995. HSP-70 in Salamanders and Fish, its Role in Thermoregulation and Potential as a Stress Indicator. Ph.D. Drexel University.
- Penick, D.N. 1996. Thermoregulatory physiology of leatherback (*Dermochelys coriacea*) and green sea turtles (*Chelonia mydas*). Ph.D. Drexel University.
- Dutra-Clarke, A. 1996. Morphological and molecular phylogeny of snails of the Family Succineidae (Mollusca, Pulmonata). Ph.D. Drexel University.
- Knouft, J. H. 1996. Effects of urbanization and pollution on the home range and movements of brown trout, *Salmo trutta*, in Valley Creek, Valley Forge, Pennsylvania. MS Drexel University.
- Besitka, M. A. R. 1996. An ecological and historical study of *Phragmites australis* along the Atlantic coast. MS Drexel University.
- Briggs, L. J. 1996. The effect of stress protein (hsp-70) accumulation on the acute toxicity response of *Pimephales promelas*. MS Drexel University.
- Binckley, C. A. 1996. Sex determination and sex ratios of Pacific hatchling leatherback sea turtles, *Dermochelys coriacea*. MS Drexel University.
- Dumas, J. V. 1996. Factors affecting the abundance and distribution of the green sea urchin (*Strongylocentrotus droebachiensis*) in rocky intertidal pools of New England. Ph.D. Drexel University.
- Rankin-Baransky, K. 1997. Origin of loggerhead turtles (*Caretta caretta*) in the western North Atlantic as determined by mt DNA analysis. MS Drexel University.
- Dolinger, L. M. 1997. Trophic transfer of PCBs as described by  $\delta^{15}\text{N}$  in Valley Creek, PA. MS Drexel University.

- Leslie, A. J. 1997. The ecology and physiology of the Nile crocodile, *Crocodylus niloticus*, in Lake St. Lucia, KwaZulu/Natal, South Africa. Ph.D. Drexel University.
- Curtis, C. 1998. Genotyping with polymorphic markers reveals multiple paternity in leatherback turtle clutches. Master of Science thesis
- Steyermark, A. C. 1999. Effects of maternal identity and incubation environment on morphological, physiological and behavioral traits in snapping turtles, *Chelydra serpentina*. Ph.D. dissertation.
- Bien, W. F. 1999. Ecological factors influencing spatial patterns in *Sphagnum flavicomans* and *Sphagnum pulchrum* from the New Jersey Pine Barrens. Ph. D. dissertation (co advisor with Susan Kilham)
- Crim, J. L. 2000. Single locus, polymorphic markers elucidate paternal patterns in a leatherback population. Master of Science thesis
- Drake, D. L. 2000. Marine turtle activity on Playa Naranjo, Costa Rica, and the thermal biology of hatchlings. Master of Science thesis
- Reynolds, D. P. 2000. Emergence success and nest environment of natural and artificial nests of the leatherback turtle (*Dermochelys coriacea*) at Playa Grande, Costa Rica 1998-1999. Master of Science thesis
- Bell, B. A. 2001. Fertility of leatherback turtles at Playa Grande Costa Rica. Master of Science thesis
- Saba, V. S. 2001. The survival and behavior of freshwater turtles after rehabilitation from an oil spill. Master of Science thesis
- Bryan Franks 2002. The home range and movement of desert tortoises (*Gopherus agassizii*) in the Mojave Desert of California. Master of Science thesis
- Heidi Hertler. 2002. The implications of resource management in La Parguera, Puerto Rico. Ph.D. dissertation.
- Robin Van Meter. 2003. Effects of polycyclic aromatic hydrocarbons on the development, locomotion, and physiology of common snapping turtle (*Chelydra serpentina*) embryos and hatchlings. Master of Science thesis.
- Jennifer Elwood 2004. Variation in HSP 70 and thermotolerance among terrestrial salamanders of the *Plethodon glutinosus* complex. Ph.D. dissertation.
- Barbara Bell 2005- PhD, Environmental Science, Effect of Oil Pollution on Biology of Freshwater Turtles
- Bryan Wallace 2005 - PhD, Environmental Science, Physiological Ecology of Leatherback Turtles
- Alicia Buchanan 2006- MS, Environmental Science, Ecology of small mammals on Warren grove Range in New Jersey. Co-Advisor Walter Bien
- Susana Clusella 2006- Ph.D., Environmental Science, Biophysical ecology and bioenergetics of Cordylid lizards in South Africa. Co-advisor Hannes van Wyk, Stellenbosch University
- Amanda Curtin 2006- Ph.D., Bioscience, Biology, bone histology of desert tortoises.

Anika McKessey 2006- Ph.D., Environmental Science, Effects of fire on community structure in new Jersey Pinelands. Co-advisor Walter Bien

Kimberly Magrini 2006- MS, Environmental Science, DNA microarrays detect effects of soil contamination on *Arabidopsis thaliana* gene expression. Co-advisor Shivanti Ananadan

Shaya Honarvar 2007-Ph.D., Biology- Nesting ecology of olive ridley (*Lepidochelys olivacea*) turtles on arribada nesting beaches.

Maria P. Santidrian 2007- PhD, Biology- Factors affecting population dynamics of eastern Pacific leatherback turtles (*Dermochelys coriacea*). Co-advisor Michael O'Connor

Bryan Franks 2007- PhD, Environmental Science- The spatial ecology and resource selection of juvenile lemon sharks (*Negaprion brevirostris*) in their primary nursery areas. Co-Advisor- Sam Gruber, University of Miami

Amit Basu 2008- Ph.D., Environmental Science- Development of a 'genetic signature of environmental lead exposure' in wild *Peromyscus* using combinatorial data from cDNA microarrays and blood metabolites

Amy Hall 2008- MS, Environmental Science- Metabolic and thermal responses of lungless salamanders to increasing temperatures. Co-Advisor- Joseph Bernardo, Cornell University

Laurie Cotroneo 2010- Ph.D. Population ecology of the American crocodile on Pacific coast of Costa Rica

Gabriela Blanco 2010- - **co-major professor with Stephen Morreale** -Ph.D. Movements and Behavior of the East Pacific green turtle (*Chelonia mydas*) from Costa Rica.

Mathew Lamarca- 2012-MS- Environmental Science Ecology of iguanid lizards in Las Baulas Park, Costa Rica

Jack Suss 2012- **co-major professor with Michael O'Connor**- Ph.D. Gas exchange in sea turtle nests.

Steve Pearson 2013- **co major professor with Harold Avery**- PhD Ecology of invasive red eared slider turtles and red-bellied turtles

Jules Winters 2013- **co major professor with Harold Avery**- PhD Effect of artificial barriers on nesting ecology of diamondback terrapins

Lori Lester 2013- **co-major professor with Harold Avery**- PhD.- Environmental Science Behavioral responses of diamondback terrapins to recreational boat noise

Samir Patel 2013- **co-major professor with Stephen Morreale**-Ph.D. Movements, behaviors and threats to loggerhead turtles (*Caretta caretta*) in the Mediterranean Sea

Ronald Smith 2013- **co major professor with Walter Bien**- PhD Home range and movement of pine snakes and rattlesnakes in New Jersey Pinelands

Carlos Mario Orrego V.: December 2014- Ph.D. Biology and Management of Olive Ridley Turtles (*Lepidochelys olivacea*) in Central America.

Abby Dominy 2015- **co major professor with Harold Avery**- PhD Light ecology of diamondback terrapins

Aliki Panagopoulou 2015- Ph.D. Sea turtles and small scale fisheries: Designing conservation policies for a Marine Area on Crete, Greece.

Benjamin Kilham 2015- Ph.D. The social behavior of the American black bear (*Ursus americanus*).

Yuxiang Fei 2015- Ph.D. The metabolic rates of giant panda and red panda.

Ashley Lavender 2015- Ph.D. Hearing in diamondback terrapins.

Kristyn Voegelé 2016- Osteological, mycological, and biochemical investigations of the sauropod dinosaur *Dreadnoughtus schrani* and molecular paleontological investigation of the marine crocodile *Thoracosaurus neocesariensis*.

Anna Jaworski 2016- Sea level change in the Delaware Bay and its impacts on fetch limited barrier islands.

Zachary Boles 2016 Vertebrate taphonomy and paleoecology of a Cretaceous/Paleogene marine bonebed.

### **Other Universities**

Ryan, K.M. 1990. Effects of egg incubation condition on the post-hatching growth and performance of the snapping turtle, *Chelydra serpentina*. MA State University College at Buffalo.

Thompson, R.D. 1990. Movement and vertical positioning of post-spawning walleye, *Stizostedion vitreum vitreum*, in the eastern basin of Lake Erie as affected by light. MA State University College at Buffalo. committee member

Ratajczak, R.E. Jr. 1991. Growth rates and food partitioning between smallmouth bass (*Micropterus dolomieu*) and rock bass (*Ambloplites rupestris*) in eastern Lake Erie. MA State University College at Buffalo.

Penick, D.N. 1992. Energetics of free-living box turtles (*Terrapene carolina*) near Aiken, South Carolina. MA State University College at Buffalo.

Bauer, D.A. 1993. Impact of a freshwater artificial reef on the fish community in Lake Erie near Buffalo, New York. MA State University College at Buffalo.

Mayor, P. A. 1998. Nesting of the leatherback turtle (*Dermochelys coriacea*) at the Las Baulas and Santa Rosa National Park and population estimates for the entire Pacific coast of Costa Rica. Swiss Federal Institute of Technology (ETH), Zurich. Diploma Thesis

#### **External Reviewer or Committee Member:**

Drane, C. R. 1980. Mathematical modeling of transient heat transfer in animals. Environmental Physics Department, University of Sydney, Australia.

Standora, E. A. 1982. A telemetric study of the thermoregulatory behavior and climate-space of free-ranging yellow-bellied turtles, *Pseudemys scripta*, University of Georgia.

Rao, K. K. 1984. Ecology and management of some wild ungulates in Marripakalu forests of eastern Ghats. Department of Environmental Science, Andhra University, Visakhapatnam, India.

Price, D. T. 1989. 3-Acylisoxazolines as synthetic intermediates: Studies directed toward the synthesis of amino sugars. Department of Chemistry, Drexel University.

Devi, S. S. L. 1990. Studies on the habitat, food composition and helminth infestations of selected herptiles of Vizianagaram District, Andhra Pradesh. Department of Environmental Science, Andhra University, Visakhapatnam, India.

Keinath, J.A. 1993. Movements and behavior of wild and head-started sea turtles. Ph.D. The College of William and Mary.

Bates, G. 1994. Sweat rate and the loss of electrolytes in sweat in conditions of heat stress. Department of Environmental Science, Murdoch University, Murdoch, Western Australia.

Saba, V. 2007. Bottom –up and climatic forcing on the nesting and foraging ecology of leatherback turtles (*Dermochelys coriacea*), Virginia Institute of Marine Science

#### **Current Graduate Students (with thesis)**

#### **Undergraduate Research Students Since 1992**

Ray Allen, Drexel University  
Chris Barlow, Indiana Purdue University  
Jocelyn Boehm, Drexel University  
Sara Bouchard, Kalamazoo College  
Rona Butera, Drexel University  
Caitlin Curtis, Ohio State University  
Kari Czajkowski, Drexel University  
Andrew Donaldson, Drexel University  
Douglas Eckert, Kalamazoo College  
David Gawlick, Drexel University  
Andrea Gingerich, Drexel University

Seth Goldenberger, Drexel University  
Aaron Hutchins, Drexel University  
Catherine Hurd, UC Santa Barbara  
Jonathon Keiser, Drexel University  
Hung La, Drexel University  
Heather MacDonough, Drexel University  
Stacia Martin, University of Wisconsin  
Philippe Mayor, Technical University Zurich, SW  
Anika McKessey, Drexel University  
Jacqueline Olson, Drexel University  
Jason Ranson, Auburn University  
Keith Reynolds, Drexel University  
Michelle Rogow, Civil Engineering, Drexel University  
Edwin Rosales, National University, Costa Rica  
Christopher Salice, Drexel University  
Jesse Scheck, Drexel University  
Andrea Schwandt, Kalamazoo College  
Carolyn Slater, Drexel University  
Trisha Glaze, Civil Engineering, Drexel University  
Jennifer Walsh, Civil Engineering, Drexel University  
Kathryne Wilson, Drexel University

#### 2001-2002

Raven Baldinger, Environmental Science, Drexel University  
Lydia Bardsley, Environmental Science, Drexel University  
Jocelyn Behm, Environmental Science, Drexel University  
Challey Comer, Environmental Science, Drexel University  
April Connors, Environmental Science, Drexel University  
Laurie Cotroneo, Environmental Science, Drexel University  
Jasmine Dermawan, Environmental Science, Drexel University  
Frank Falkenstein, Environmental Science, Drexel University  
Melissa Gibson, Environmental Science, Drexel University  
Megan Griffin, Environmental Science, Drexel University  
Danielle Hummell, Environmental Science, Drexel University  
Jamie Jasina, Environmental Science, Drexel University  
Kate Jenks (Kalamazoo College)  
Rodney Piedra, Environmental Science, Drexel University  
Vanessa Scully, Bioscience and Biotechnology  
Holly Smoker, Environmental Science, Drexel University  
Katherine Sulkowski, Environmental Science, Drexel University  
Jack Suss, Environmental Science, Drexel University  
Megan Thyng, Environmental Science, Drexel University  
Rebecca Trejo, Environmental Science, Drexel University  
Simon Verderame, Environmental Science, Drexel University  
Neil Wade, Environmental Science, Drexel University  
Christy Ann Wojculewski, Environmental Science, Drexel University

Since 2002- 30

#### **Other Students Since 1992**

Susan Bulova, University of Wisconsin, MS  
Sonia Zamora Cruz, Ministry of Natural Resources, Costa Rica  
Meghan Hagerty, Stanford University, BS  
Paul Kloc, State University College at Buffalo, MS  
Sergio Obando, Ministry of Natural Resources, Costa Rica  
Clara Padilla, Ministry of Natural Resources, Costa Rica  
Julie Rieder, Ohio State University, MS  
Amanda Southward, University of British Columbia, Ph.D.  
Raul Solorzano, Ministry of Natural Resources, Costa Rica  
Kristina Williams, State University College at Buffalo, MS

### **Student Awards**

David Penick. 1995. Ist Annual Archie Carr Award for best student poster, 15<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Julie Rieder. 1996. Archie Carr Award for best student poster, second place, 16<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Amanda Southward. 1997. Archie Carr Award for best student paper, 17<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Caitlin Curtis. 1998. Archie Carr Award for best student poster, second place, 18<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Dana Drake. 2000. Archie Carr Award for best student poster, second place, 20<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Barbara Bell. 2000. Archie Carr Award for best student paper, second place, 20<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Susana Clusella Trullas. 2001. Archie Carr Award for best student paper, second place, 21<sup>st</sup> Annual Symposium on Sea Turtle Biology and Conservation.

Amanda Curtin. 2001. Panaphil Foundation fellowship, \$25,000, for PhD studies

Todd Jones, 2002. Archie Carr Award for best student poster, First Place, 22<sup>nd</sup> Annual Symposium on Sea Turtle Biology and Conservation

Bryan Wallace 2002. NSF Predoctoral Fellowship, \$38,000/yr , 2002-2005

Amanda Curtin, 2003. Panaphil Foundation, \$25,000- Graduate Fellowship

Bryan Franks, 2003 Graiff Fellowship, \$10,000- Graduate Fellowship

Amanda Curtin, 2004. Panaphil Foundation, \$25,000- Graduate Fellowship



Cameron Ralph, 2004. Archie Carr Award for best student poster, Third Place, 24<sup>th</sup> Annual International Sea Turtle Symposium

Bryan Wallace 2004. Columbus Zoo, Movement migrations and marine habitat use of endangered leatherback turtles. PI Bryan Wallace- \$ 5,000- check to Wallace

Shaya Honarvar 2007. Archie Carr Award for best student paper, First Place, 27<sup>th</sup> Annual International Sea Turtle Symposium

Anthony Rafferty 2011. Archie Carr Award for best student paper, First Place, 31<sup>th</sup> Annual International Sea Turtle Symposium

### **Postdoctoral Fellows and Research Associates**

E. A. Standora, Ph.D., University of Georgia- currently Professor, State University College at Buffalo

M. P. O'Connor, MD., Ph.D., Colorado State University- currently Associate Professor, Drexel University

L. C. Zimmerman, Ph.D., Colorado State University- currently Assistant Research Professor U Nevada, Reno

D. C. Rostal, Ph.D., Texas A&M University- currently Professor, Georgia Southern University

J. C. Grumbles, D. V. M., Texas A&M University -currently in private practice, Statesboro Georgia

B. A. Kingsbury, Ph.D., University of California, Riverside- currently Professor Indiana-Purdue University at Fort Wayne

P. Plotkin, Ph.D., Texas A&M University- currently Director of Texas Sea Grant, Texas A&M University

Richard Reina, Ph.D., National University, Canberra, Australia- currently Professor, Murdoch University

Walter Bien, Ph.D., Drexel University- currently Research Professor, Drexel University

Harold W. Avery, Ph.D., UCLA- currently Vice President, The Leatherback Trust

Paul Sotherland, Ph.D. Kalamazoo College- currently Full Professor (emeritus)

Steven A. McCollum, Ph.D., Cornell College- currently Associate Professor

Pilar Santidrian, Ph.D., Drexel University- Research Associate- currently Scientific Director, The Leatherback Trust

Aliki Panagopolou, Ph.D., Drexel University- Research Associate

Jacob Owens, Ph.D., Drexel University- Research Associate

Ramana Callan, Ph.D., University of Georgia- Research Associate

## **INVITED SEMINARS:**

### **1992**

Rutgers University, New Brunswick, NJ  
Department of Bioscience, Indiana State University, Terre Haute, IN  
Limnological Research Institute, Lake Balaton, Hungary  
Department of Biology, University of Pennsylvania

### **1993**

Zoology Institute, University of Zurich, Zurich, Switzerland  
Institute fur Zoologie, University of Innsbruck, Innsbruck, Austria  
Congressional Briefing- Endangered Species Act

### **1994**

Savannah River Ecology Laboratory, Aiken SC  
Department of Biology, Stockton College, New Jersey  
Zoological Society of South Africa, Annual Symposium, Pietermaritzburg, South Africa  
U.S. AID Briefing- Status of leatherback turtles and economic development  
Academy of Natural Sciences, Philadelphia, PA  
Lower Merion High School, Lower Merion, PA  
EYE Openers, Drexel University, Philadelphia, PA  
Earthwatch Expeditions, Philadelphia Zoo, Philadelphia, PA

### **1995**

Philadelphia Herpetological Society, Philadelphia, PA  
Haddonfield High School, Haddonfield, NJ  
Keynote Address, Annual Meeting, Zoological Society of South Africa, June  
Public Lecture, Annual Meeting, Zoological Society of South Africa, June  
Department of Zoology, Ohio State University, Columbus, OH  
Department of Biology, University of Dayton, Dayton, OH

### **1996**

Department of Biology, Lehigh University, Bethlehem, PA  
65 Club, Haddonfield, NJ  
Rhodes University, Grahamstown, South Africa  
University of Stellenbosch, Stellenbosch, South Africa  
South African Museum, Capetown, South Africa  
Department of Paleontology, University of the Witwatersrand, Johannesburg, South Africa

### **1997**

Institute of Environmental Studies, University of Pennsylvania  
Department of Biology, University of Maryland Eastern Shore, Princess Anne, MD  
Division of Biological Sciences, University of Missouri, Columbia, MO  
Earthwatch Lecture, Harvard University

### **1998**

Department of Biology, Diebold Lecture, Kalamazoo College, Kalamazoo, MI  
Earthwatch Lecture Series, American Museum of Natural History

Churchill Road School, McLean, VA

**1999**

USGS, Mojave Desert Science Symposium  
University of California at Riverside, Conservation Biology Seminar  
School of Natural and Environmental Science, Dusquesne University, Pittsburgh, PA  
Savannah River Ecology Laboratory, Aiken, SC

**2000**

U.S. Military Academy, West Point, New York  
Department of Biology, Rider University, New Jersey  
School of Environmental Science, Engineering and Policy, Drexel University  
Department of Biology, Bucknell University, Lewisburg, PA  
John Heinz National Wildlife Refuge, Philadelphia  
Montgomery County Science Teachers Association, Keynote Address at Annual Meeting

**2001**

Institute of Environmental Science, University of Pennsylvania  
John Heinz National Wildlife Refuge, Philadelphia, PA  
Delaware Valley Paleontological Society, Academy of Natural sciences, Philadelphia, PA  
Savannah River Ecology Laboratory, 50<sup>th</sup> Anniversary Symposium, Aiken, SC  
Center for Talented Youth, John Hopkins University, Philadelphia, PA

**2002**

Delaware County Camera Club  
Hopkins Marine Laboratory, Stanford University, Monterrey, CA  
International Sea Turtle Survival Conference, Monterrey, CA  
EARTHWATCH National Meeting, Boston, MA

**2003**

US Army Environmental Quality Technology Program, Washington, DC, March  
Conservation International Annual Meeting, Washington, DC May  
Department of Zoology, University of Stellenbosch, South Africa, June  
Department of Biology, Indiana Purdue University at Fort Wayne, June  
Department of Biology, University of Saint Thomas, St. Paul MN- Biology and Conservation of leatherback sea turtles  
Department of Biology, Sienna College, Albany, NY- Biology and Extinction of the leatherback turtle  
Wildlife Habitat Council, 15<sup>th</sup> Anniversary Symposium, Baltimore, MD, November

**2004**

New Jersey Marine Education Association Teach at the Beach Symposium, Keynote Speaker- Sea Turtles of New Jersey  
National Aquarium in Baltimore, November- Distinguished Lecture- Sea Turtles: Their Biology, Behavior and Conservation

**2005**

Drexel University Alumni meeting, Boca Raton, FL, February- with Dr. Papadakis, Sea Turtles at Drexel University

Binghamton University, Binghamton, NY, March- Biotechnology approaches to assess watershed health  
United Nations, New York- Law of the Sea Informal Consultation Meeting, June- The Extinction of Pacific  
Leatherback Turtles  
Savannah River ecology Laboratory, July- Keynote Address- Graduate Student Symposium- The Ecology and  
Conservation of the leatherback turtle  
Connections Natural History Lecture Series, Cedar Rapids Iowa, October- 6 lectures  
Cornell College, Mt. Vernon, IA- Sea Turtles, Ecology, Behavior and Conservation  
Kennedy High School- Sea Turtles- 2 AP Environmental Science classes  
Washington High School- Sea Turtles- 3 AP Environmental Science classes  
San Francisco Zoo, November- Sea Turtles - 100 Million Years And Counting...Will They Survive?  
Sea Turtle Restoration Project, Marin Co, CA, November- Sea Turtles - 100 Million Years And  
Counting...Will They Survive?  
Nueva School, Hillsborough, CA, November- Third grade- Sea Turtles  
Bullis Charter School, Los Altos, CA, November.- Grades 1-6- Sea Turtles  
Haddonfield High School, NJ- Leatherback Turtle Conservation- AP Environmental Science class

## **2006-2007**

Olin Partnership, Philadelphia, PA, January- Sea Turtles  
Earthwatch, Barnegat Bay, NJ, June – Sea Turtles  
Franklin Institute, Philadelphia, October- Galapagos Islands- why they still matter  
Audubon Wildlife Society, Audubon, NJ, November- Sea Turtles  
Drexel University, January 2007- Effects of global warming on biodiversity  
Virginia Aquarium, Gloucester Pt, VA, March, 2007- Sea Turtles, Biology, Behavior and Conservation  
Anne Arundel Community College, Annapolis, MD, March 2007- Sea Turtle Biology  
Charlottesville Women's Club, Charlottesville, VA, April, 2007- Sea Turtles  
Chinese Academy of Sciences, Beijing, China, October 2007- Effects of global warming on biodiversity  
Institute of Zoology, Beijing, China, October 2007- Effects of global warming on biodiversity  
Panda Research and Breeding Center, Chendu, China, October 2007- Effects of global warming on biodiversity  
Institute of Biology, Chendu, China, October 2007- Effects of global warming on biodiversity  
Institute of Sciences of the Sciences, Shanghai, China, October, 2007- Effects of global warming on biodiversity  
East China Normal University, Shanghai, China, October 2007- Effects of global warming on biodiversity

## **2008**

Guest Presenter for Sustainability movie at Drexel- Jan 28, 2008  
Guest on radio show in Baltimore April 12, 2008  
Guest Speaker for Earth Day- Sierra Club, Drexel University, April 22, 2008  
Invited Speaker- Drexel Alumni Association, Oct. 1, 2009- Global Warming- A Personal History

## **2009- Present**

**An average of 4 invited seminars a year**

## **CONSULTANCIES AND BOARDS:**

Board of Governors- Environmental Technology Academy, Philadelphia High School Academies, 1992-1996  
Consultant- National Biological Survey, Riverside, CA, 1993-1997  
Environmental Advisor- U.S. Small Business Administration, Washington, DC, 1993-1998

Environmental Advisor- Office of Information and Regulatory Affairs, OMB, the White House, Washington, DC, 1999- 2000

Advisory Board- National Sea Turtle Program, Costa Rica, 1991- present

Visiting Scientist- Savannah River Ecology Laboratory, Aiken, SC, 1974-1992

Member- Environmental Task Force- 1995 White House Conference on Small Business, 1994

Member- BLM Blue Ribbon Panel on desert tortoise, 2000

Member- Ph.D. Program Review Panel Pennsylvania Department of Education, Duquesne University, Pittsburgh, PA 2001

Atlantic leatherback Workshop, St. Catherine's Island, GA, January, 2005

## **PRESENTATIONS:**

Since 1976 my students and I have presented over 100 research papers at national scientific meetings. In addition, I have presented many research seminars at other universities by invitation, presented two papers at the International Congress of Physiology in Paris in 1977, two seminars in Poland in 1987, and one at the University of Costa Rica in 1989, Lake Balaton Research Institute, Hungary in 1992, University of Zurich in 1993, University of Innsbruck in 1993, and Zoological Society of South Africa in 1994, and 1995. In 1996 I presented 4 seminars while on Sabbatical in South Africa. More recent listings are above.

## **PROFESSIONAL SOCIETIES:**

American Association for the Advancement of Science, American Fisheries Society, American Institute of Biological Sciences, American Society of Ichthyologists and Herpetologists, Animal Behavior Society, Ecological Society of America, Herpetologists League, National Center for Science Education, Society for Conservation Biology, Society for Integrative and Comparative Biology, Society for the Study of Amphibians and Reptiles, Society for the Study of Evolution, Society of Environmental Toxicology and Chemistry.

## **CONSERVATION ORGANIZATION:**

Co-Founder and Chair of the Board of The Leatherback Trust. We founded organization in 2001 to save leatherback and other sea turtles from extinction. The Trust has an extensive program of conservation in Costa Rica and around the world. I provide leadership for the organization. Foundation raised \$5,000,000 since 2005 for consolidation of Las Baulas National Park in Costa Rica, for education projects there and land purchases.

Vice President and member of the Board of the Global Cause Foundation. Global Cause has developed an extensive program of giant panda conservation in China in relation to the dangers of global warming to giant pandas. Work is allied with research and conservation activities at Drexel.

International Center for Giant Panda Conservation Biology- member of the Board and Science Committee Co-Chair- provide leadership in science and conservation to this organization formed by Global Cause Foundation and The Chengdu Research Base of Giant Panda Breeding in Chengdu, China.

Chengdu Research Base of Giant Panda Breeding- Senior Science Advisor on Endangered Species Conservation - provide advice, assist in program development, assist in development of research projects, review research projects, review manuscripts, help in writing of manuscripts and presentations, present seminars, help to develop international projects- That is: Assist in the development and improvement of research plans.

## **PUBLIC RELATIONS ACTIVITIES SINCE 1990:**

Public relations efforts that reflect positively on the University are often considered to be an important part of the role of an Endowed Professor. Through a combination of first quality scientific research and publication, public education articles, Op-Ed pieces, national media programs, public lectures, and messages on the Internet I have reported new knowledge on the biology of endangered species, educated the public about these discoveries, focused attention on efforts to save these species and in the process publicized Drexel University and its programs locally, nationally and internationally.

Since 1990 I have had considerable success in placing Drexel University in the news in local, national and international media. My research on the leatherback turtle in Costa Rica was featured in an episode “Flesh on the Bones” of “The Dinosaurs” on PBS. This continues to run periodically on PBS and was last seen in Philadelphia in 1998. This research was also featured on a National Geographic Explorer program in 1994. The CNN network carried a story worldwide on our efforts to hatch leatherback turtle eggs in 1993. I received comments on the program from people in the US, Europe, India and Australia. Local media (Channel 6 and 10) aired a story on our fish research on the Schuylkill River in 1991. Radio interviews on our leatherback research went out over the BBC in 1993 and the Netherlands Radio Network in 1992. The leatherback research was featured in a 1 hour special on Crosscurrents with Diana Nyad on the Outdoor Life Network in 1996. In 1996 I was a featured guest on an environmental talk show called “Down to Earth” on a radio station in Somerset West, near Cape Town, South Africa.

In the print media Discover Magazine covered the leatherback turtle research in 1990, as did the London Times, Toronto Globe and Mail, Chicago Sun Times, Illinoian Star Daily, Philadelphia Inquirer, Science News, Las Vegas Review-Journal, and the Kentucky Enquirer among others. Britannica Book of the Year highlighted our research in 1991. The Providence Journal ran a story and photo on a leatherback study we did in Rhode Island in 1992, as did CNBC, NBC, the Philadelphia Inquirer, and Science News. The Chronicle of Higher Education highlighted the hatchling experiment in 1993, as did a nice article in the Philadelphia Inquirer, which had run another story about our satellite tracking of leatherbacks in 1992. In June, 1992 Discover Magazine featured our temperature dependent sex determination research and its implications for dinosaur extinction in an issue on SEX and included a two page color cartoon about our research paper. In 1994 the National Geographic Magazine had a major article on sea turtles and highlighted our research on leatherbacks while the New Scientist carried a story on our leatherback turtle migration research. Drexel publications have featured our research and the University of Dayton Alumni Magazine ran a feature article on our research in 1995. The most recent article was in Technology Review in 1997. Our leatherback turtle project was the subject of a series of expedition reports on Discovery.com in 1999.

A series of Op Ed pieces in the Philadelphia Inquirer in 1992, Daily News in 1995, and Courier Post (NJ) in 1995 and 1996 have established the reputation of Drexel as the Environmental University in this region. Two Op-Ed pieces in the TICO Times in Costa Rica in 1991 and 1995 played a key role in saving Las Baulas de Guanacaste National Park for the leatherback turtles. An article in the Cornell Environmental Forum focused national attention on the plight of the endangered leatherback turtle.

In 2000, publication of our leatherback turtle research in NATURE resulted in coverage in articles in the New York Times, USA Today, Newsweek, Philadelphia Inquirer, and other print media. The Voice of America, Quirks and Quarks on CBC, BBC, and other radio media covered the story as well. ABC national news and local news ran stories. Local ABC, NBC, CBS, FOX, Philly 17 and 51 KYW and WWCD radio, and the Philadelphia Inquirer covered our research and conservation project at the John Heinz National Wildlife Refuge in Philadelphia. Since then we continue to receive favorable media coverage in print and on screen for our research and conservation efforts on freshwater and sea turtles.

Publication of “Sea Turtles, A Complete Guide to Their Biology and Conservation” in 2004 resulted in numerous print stories in local and national media. Publication of “Saving Sea Turtles” in 2008 had a similar impact. Research publications on giant pandas has generated international interest in print and other media.

**OTHER:**

Amnesty International -Co-Coordinator, Buffalo Adoption Group (Chapter) 1977-1981, Member 1977- 2010  
Nature Conservancy  
Sea Turtle Conservancy  
Turtle Island Restoration Network  
Union of Concerned Scientists  
World Wildlife Fund  
Sierra Club

**PERSONAL INFORMATION:**

Date of Birth: December 21, 1944      Marital Status: Married, two children