

## *CURRICULUM VITAE*

### **PERSONAL:**

Name: Alexander D. Hernandez

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### **EDUCATION:**

2008-2012 Post-Doctoral, Center for Infectious Disease Dynamics, Penn State University  
Effects of environmental change on the long term dynamics of parasites in an age structured host population.  
(Supervisor: Dr. Isabella M. Cattadori)

2006-2008 Post-Doctoral, Primate Research Institute, Kyoto University  
Structure and energetics of the Yakushima Island food web sustaining Japanese macaques (*Macaca fuscata*) and their helminth parasites.  
(Supervisor: Dr. Michael A. Huffman)

2006 Ph.D., Graduate Program in Ecology & Evolution, Rutgers University  
Thesis: Parasitism, food webs and biomass patterns in stream ecosystems.  
(Supervisor: Prof. Michael V.K. Sukhdeo)

1997 M.S., Department of Zoology, Michigan State University  
Thesis: Seasonal patterns in the biology of *Eubothrium salvelini* infecting brook trout and slimy sculpin from Sweetwater Creek, Michigan.  
(Supervisor: Prof. Patrick M. Muzzall)

1994 B.A., Biological Sciences, Rutgers University  
Thesis: Host grooming and the transmission strategy of *Heligmosomoides polygyrus*.  
(Supervisor: Prof. Michael V.K. Sukhdeo)

**RESEARCH INTERESTS:**

I am interested in understanding the ecology and evolution of parasite transmission strategies. I focus mostly on helminth parasites that infect wildlife populations from both aquatic and terrestrial ecosystems, including invertebrates, fishes, mice, rabbits and monkeys.

**REFEREED ARTICLES:**

- MacIntosh AJJ, Jacobs A, Huffman MA, **Hernandez AD (In revision)** Monkeys in the middle: parasite transmission through the social network of wild Japanese macaques.
- Bose BGV, **Hernandez AD**, Huffman MA, Moore, J **2011**. Parasites and dung beetles as ecosystem engineers in a forest ecosystem. *Journal of Insect Behavior* DOI 10.1007/s10905-011-9305-5
- Hayakawa S, **Hernandez AD**, Suzuki M, Sugaya K, Koda H, Hasegawa H, Endo H **2011**. Necropsy case report for an old wild Japanese macaque (*Macaca fusucata yakui*) from Yakushima. *Reityouruikenkyu (Primate Research)* **27**: 3-10
- MacIntosh AJJ, **Hernandez AD**, Huffman MA **2010** Host age, sex and reproductive seasonality affect nematode parasitism in wild Japanese macaques. *Primates* **51**: 353-364
- Hernandez AD**, Sukhdeo MVK **2008** Parasites alter the topology of a stream food web across seasons. *Oecologia* **156**: 613-624
- Hernandez AD**, Sukhdeo MVK **2008** Parasite effects on isopod feeding rates can alter the host's functional role in a natural stream ecosystem. *International Journal for Parasitology* **38**: 683-690
- Hernandez AD**, Bunnell JF, Sukhdeo MVK **2007** Composition and diversity patterns in metazoan parasite communities and anthropogenic disturbance in stream ecosystems. *Parasitology* **134**: 91-102
- Engh AL, Nelson KG, Peebles R, **Hernandez AD**, Hubbard KK, Holekamp KE **2003** A coprological survey of the parasites of spotted hyenas (*Crocuta crocuta*) in the Masai Mara National Reserve, Kenya. *Journal of Wildlife Diseases* **39**:224-227
- Schmalz WF, **Hernandez AD**, Weis P **2002** Hepatic histopathology in two populations of the mummichog, *Fundulus heteroclitus*. *Marine Environmental Research* **54**: 539-542
- Hernandez AD**, Muzzall PM **1998** Seasonal patterns in the biology of *Eubothrium salvelini* infecting brook trout in a creek in lower Michigan. *Journal of Parasitology* **84**:1119-1123
- Muzzall PM, Peebles R, DeJong RJ, **Hernandez AD** **1997** Parasites of the deepwater sculpin *Myoxocephalus thompsoni* (Cottidae) from Lakes Michigan and Huron. *Journal of Parasitology* **83**: 160-162
- Hernandez AD**, Sukhdeo MVK **1995** Host grooming and the transmission strategy of *Heligmosomoides polygyrus*. *Journal of Parasitology* **81**: 864-869

**BOOK CHAPTERS:**

- Hernandez AD**, Huffman MA **(In press)** Plants, parasites, primate behavior and conservation  
**In: Primates and Cetaceans: Field Studies and Conservation of Complex Mammalian Societies** (Eds. J. Yamagiwa & L. Karczmarski). Springer Publisher

**Hernandez AD**, MacIntosh AJ, Huffman MA **2009** Primate parasite ecology: patterns and predictions from an on-going study of Japanese macaques **In: Primate Parasite Ecology – The dynamics and study of host-parasite relationships** (Eds. MA Huffman & CA Chapman). *Cambridge Studies in Biological and Evolutionary Anthropology* **57**, pp. 387-401. Cambridge University Press

Sukhdeo MVK, **Hernandez AD 2005** Food web patterns and the parasite's perspective **In: Parasitism and Ecosystems** (Eds. F Thomas, JF Guegan & F Renaud), pp. 54-67. Oxford University Press

#### ARTICLES IN PREPARATION:

**Hernandez AD**, Boag B, Poole A, Cattadori IM. Forecast changes in climate influence the transmission of wildlife parasites

Boag, B, **Hernandez AD**, Cattadori IM. Observations on the epidemiology of coccidiosis in a wild rabbit population in Scotland and the interaction with myxomatosis

**Hernandez AD**, MacIntosh, AJ, Huffman, MA. Transmission strategies of metazoan parasites infecting Japanese macaques on Yakushima Island

**Hernandez AD**, Sukhdeo MVK. Do parasites fit into Lindeman's classic biomass pyramid pattern of food webs?

#### AWARDS & HONORS:

|           |   |                            |
|-----------|---|----------------------------|
| 2006-2008 | JSPS Fellowship for Foreign Researchers                                 | Kyoto University           |
| 1998-2000 | Graduate School MAP Fellowship  | Rutgers University         |
| 1994      | Stauber Award, NJ Society of Parasitologist - Best Student Presentation | University of Pennsylvania |
| 1992-1994 | Ronald E. McNair Post-Baccalaureate Achievement Program Scholar         | Rutgers University         |

#### COMPETITIVE GRANTS:

|           |  |
|-----------|--|
| 2006-2008 | Japan Society for the Promotion of Science Grant-In-Aid<br>"Structure and energetics of the Yakushima Island food web sustaining Japanese macaques ( <i>Macaca fuscata</i> ) and their helminth parasites" |
| 2000-2001 | New Jersey Water Resources Research Institute<br>"NJ Pinelands Native Fish Biology: Parasites as Biological Tags"  |
| 1999-2000 | New Jersey Water Resources Research Institute<br>"Watershed disturbance in the New Jersey Pinelands: Fish parasites as indicators"   |

**TEACHING EXPERIENCE:**

- 2000-2003 Rutgers University, Division of Life Sciences, Teaching Assistant
- Cell & Dev. Bio. (BIO 329) “Human Parasitology Lab”  
I was the instructor for the laboratory portion of the “Human Parasitology” course during 8 consecutive semesters (Fall 2000, Spring 2001, Summer 2001, Fall 2001, Spring 2002, Summer 2002, Fall 2002, Spring 2003). Each semester I taught 2 sections of this class, and each was limited to ~22 3<sup>rd</sup> and 4<sup>th</sup> year Biology majors that convened once per week for 3 hours. My responsibilities included the organization and delivery of 30-45 minute lectures at the beginning of each class, and the demonstration of specimens and other materials relevant to each topic for the remaining time.
- 1994-1997 Michigan State University, Department of Zoology, Teaching Assistant
- Biological Sciences (BS 110) “Organisms and Populations Lab”  
I was an instructor for the laboratory portion of the “Organisms and Populations” course during 3 semesters (Fall 1994, Spring 1995, Fall 1995). Each semester I taught 2 sections of this introductory biology class, and each was limited to ~30 1<sup>st</sup> year students that convened once per week for 3 hours. My responsibilities included the delivery of 20-minute lectures at the beginning of each class, and the demonstration of specimens and other materials relevant to each topic for the remaining time.
  - Zoology (ZOL 316L) “General Parasitology Lab”  
I was the instructor for the laboratory portion of the “General Parasitology” course during 2 semesters (Spring 1996 and 1997). Each semester I taught two 3-hour sections of this class per week, and each section was limited to ~20 3<sup>rd</sup> and 4<sup>th</sup> year students majoring in Zoology or training for the Veterinary Technician program. My responsibilities included the delivery of 20-minute lectures at the beginning of each class, and the demonstration of specimens and other materials relevant to each topic for the remaining time.
  - Zoology (ZOL 355L) “General Ecology Lab”  
I was an instructor for the laboratory portion of the “General Ecology” course during the Fall-1996 semester. Each semester I taught two 3-hour sections of this class per week, and each section was limited to ~25 3<sup>rd</sup> year students majoring in Zoology. My responsibilities included the delivery of 20-minute lectures at the beginning of each class, and the demonstration of specimens and other materials relevant to each topic for the remaining time.

**GRADUATE STUDENTS MENTORED:**

- 2007-2010 Mr. Andrew J.J. MacIntosh, PhD, Kyoto University, Primate Research Institute  
Now Postdoctoral Researcher at Center for International Collaboration and  
Advanced Studies in Primatology, Kyoto University
- 2008 Ms. Broox Boze, PhD, Colorado State University, JSPS Summer Program

**UNDERGRADUATE STUDENTS MENTORED:**

- 2009 Mr. Aaron Block, Penn State University,  
NSF-Research Experience for Undergraduates
- 2011 Ms Kristin Lambert, Penn State University,  
NSF-Research Experience for Undergraduates
- 1999-2000 Mr. Alexander Gershenson, Rutgers University,  
New Jersey Water Resources Research Institute Summer Grant  
Received his PhD from UC-Santa Cruz, now lecturer at San Jose State University

**MEMBERSHIP IN PROFESSIONAL SOCIETIES:**

Ecological Society of America  
American Society of Parasitologists

**INVITED SEMINARS:**

- 2012 Biology Department  
Dickinson College, PA
- 2006 Parasitism, food webs and biomass patterns in natural ecosystems  
Primate Research Institute, Kyoto University
- 2006 Parasitism, food webs, and biomass patterns in stream ecosystems  
College of Veterinary Medicine, University of Florida
- 2006 Parasitism, food webs, and biomass patterns in stream ecosystems  
Department of Wildlife and Conservation, University of Florida
- 2000 Parasites in food webs  
Dept. of Entomology - Lunch Bunch, Cornell University

**CONFERENCE PRESENTATIONS: (\*student presenter)**

- Hernandez AD, Boag B, Cattadori IM 2011.** Experimental climate warming affects the emergence of free-living stages in wildlife parasites. Ecological Society of America, Austin, Texas.
- MacIntosh AJJ, Jacobs A, Huffman MA, **Hernandez AD 2011.** Parasite transmission through social networks of Japanese macaques: a cost of grooming? The 26<sup>th</sup> Congress of the Primate Society of Japan
- Hernandez AD, Sukhdeo MVK 2010.** Do parasites fit into Lindeman's classic biomass pyramid pattern of food webs? British Society for Parasitology, Cardiff, Wales, UK.
- \*MacIntosh AJ, **Hernandez AD, Huffman MA 2008.** The importance of host age and sex to the distribution of helminth parasites infecting free-ranging Yaku-Island macaques (*Macaca fuscata yakui*). American Society of Primatologists, West Palm Beach

- Hernandez AD, Huffman MA 2007.** Social rank and parasitism in Japanese macaques. American Society of Parasitologists, Merida, Mexico.
- Hernandez AD, Trexler JC, Huxham M, Sukhdeo MVK 2006.** Parasitism, food webs and biomass patterns in natural ecosystems. 4<sup>th</sup> International Congress on the Ecology and Evolution of Infectious Diseases, Penn State University.
- Hernandez AD, Sukhdeo MVK 2005.** Food webs and parasites: biomass patterns in a freshwater community. Ecological Society of America, Montreal, Canada.
- Hernandez AD, Sukhdeo MVK 2004.** Parasite alteration of biomass and ecosystem function of hosts. American Society of Parasitologists, Philadelphia.
- Hernandez AD, Sukhdeo MVK 2003.** Eltonian pyramids and parasitism in food webs. American Society of Parasitologists, Halifax, Nova Scotia, Canada.
- Hernandez AD, Sukhdeo MVK 2002.** Isopod detritus processing is decreased in infected individuals. North American Benthological Society Annual Meeting, Pittsburgh.
- Hernandez AD, Sukhdeo MVK 2001.** Environmental disturbance and the incidence of parasitism in local and invasive fish species. 4th International Symposium on Monogenea. Brisbane, Australia.
- Hernandez AD, Sukhdeo MVK 2001.** Environmental disturbance and the incidence of parasitism in local and invasive fish species. American Society of Parasitologists, Albuquerque.
- Hernandez AD, Medica DL, Sukhdeo MVK 1998.** Ecological adaptations for successful transmission of parasitic nematodes. Ecological Society of America, Baltimore.
- Hernandez AD, Muzzall PM 1997.** Seasonal patterns in the biology of *Eubothrium salvelini* from a first order stream in central lower Michigan. American Society of Parasitologists, Nashville.
- Hernandez AD, Sukhdeo MVK 1994.** Host grooming behavior and transmission of *Heligmosomoides polygyrus*. American Society of Parasitologists, Fort Collins.
- Hernandez AD, Sukhdeo MVK 1994.** Host grooming behavior and transmission of *Heligmosomoides polygyrus*. NJ Society of Parasitologists, Philadelphia.

#### POSTER PRESENTATIONS:

- Hernandez AD, Boag B, Cattadori IM 2011.** Effects of experimental climate warming on the emergence of free-living infective larvae of *Trichostrongylus retortaeformis* and *Graphidium strigosum*. British Society for Parasitology, Nottingham University, England, UK.
- Boag B, Cattadori I, **Hernandez A**, Murphy L, Lello J **2010.** Factors influencing rabbit parasite communities. British Society for Parasitology, Cardiff, Wales, UK.
- Hayakawa S, **Hernandez AD**, Suzuki M, Sugaya K, Koda H, Hasegawa H, Endo H **2010.** A necropsy report on a wild and very old Japanese macaque (*M. fuscata yakui*). International Primatological Society Congress XXIII, Kyoto, Japan.
- Hernandez AD, Sukhdeo MVK 2003.** Isopod detritus processing is decreased in infected individuals. Northeast Ecology and Evolution Conference, New Brunswick, NJ

**PROFESSIONAL SERVICE & OUTREACH ACTIVITIES:**

- JSPS Science Dialogue Program, 2008, Ikeda High School, Kagoshima, Japan
- 1<sup>st</sup> Annual Northeast Ecology and Evolution Conference (NEEC), 2003, Organizing Chair, Rutgers, The State University, New Brunswick, NJ
- Manuscript referee: American Journal of Primatology, Biological Conservation, Ecology, Journal of Animal Ecology, Oecologia, Parasitology
- Grant referee: National Science Foundation (USA)

**OTHER RESEARCH EXPERIENCE:**

2005-2006 Visiting Research Scientist, Florida International University  
Southeast Environmental Research Center (Supervisor: Prof. Joel C. Trexler)

**REFERENCES:**

Prof. Michael V.K. Sukhdeo  
Department of Ecology, Evolution & Natural Resources  
Rutgers, The State University of New Jersey  
New Brunswick, New Jersey 08904, USA  
Tel: +1 848 932 9406  
Email: [sukhdeo@aesop.rutgers.edu](mailto:sukhdeo@aesop.rutgers.edu)

Dr. Michael A. Huffman  
Section of Social Systems Evolution  
Department of Ecology and Social Behavior  
Kyoto University Primate Research Institute  
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