

Jeremy D. Long

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Research Interests

I investigate the interactions between herbivores and algae, how these interactions shape communities and ecosystems, and the evolution of defensive strategies. To address these topics, I conduct laboratory and field experiments that bridge the fields of ecology, evolution, and chemistry.

Education

2004 - Ph.D. Biology, with a Statistics minor, Georgia Tech, Advisor: Dr. Mark Hay
1998 - B.A. Marine Science, with a Biology emphasis, USD (Magna Cum Laude)

Grants and Awards

2007 **Development of an Intertidal Monitoring Program** Department of the Interior (\$160,000)
2007 **International Collaboration for FONDECYT** Chilean Government (\$4500, co-PI)
2006 **National Park Research Fellow Renewal** Ecological Society of America (\$14,000)
2006 **Visiting Investigator Award** Baruch Marine Field Laboratory (\$3000)
2005-2007 **National Park Research Fellow** Ecological Society of America (\$120,000)
2005 **Maren Fellow** MDIBL New Investigator Award (\$4500)
2004 **Outstanding Student Poster Award** American Society of Limnology and Oceanography
2004 **Student Travel Stipend** American Society of Limnology and Oceanography (\$250)
2001-2004 **STAR Pre-Doctoral Fellow** Environmental Protection Agency (\$105,000)
2001 **Honorarium** Western Society of Naturalists (\$150)
2001 **Graduate Research Conference Fund** Georgia Tech (\$900)
2000 **Focused Research Program Grant** Georgia Tech (\$3,900)
1999-2003 **President's Fellow** Georgia Tech (\$16,500)
1999 **Graduate Research Fellowship Honorable Mention** National Science Foundation

Publications

10) Long, J.D., G.W. Smalley, T.A. Barsby, J.T. Anderson, and M.E. Hay (2007). Chemical cues induce consumer-specific defenses in a bloom-forming marine phytoplankton. *Proceedings of the National Academy of Sciences* 104: 10512-10517.

9) Long, J.D., R.S. Hamilton, and J.L. Mitchell (2007). Asymmetric competition via induced resistance: specialist herbivores indirectly suppress generalist preference and populations. *Ecology* 88(5): 1232-1240.

8) Long, J.D. and G.C. Trussell (2007). Geographic variation in seaweed induced responses to herbivory. *Marine Ecology Progress Series* 333:75-80.

- 7) Nejstgaard, J.C., K.W. Tang, M. Steinke, J. Dutz, M. Koski, E. Antajan, and J.D. Long (2007). Zooplankton grazing on *Phaeocystis*: quantitative status and novel approaches. *Biogeochemistry* 83: 147-172.
- 6) Whipple, S.J., B.C. Patten, P.G. Verity, J.C. Nejstgaard, J.D. Long, J.T. Anderson, A. Jacobsen, A. Larsen, J. Martinez-Martinez, and S.R. Borrett (2007). Gaining integrated understanding of *Phaeocystis* spp. (Prymnesiophyceae) through model-driven laboratory and mesocosm studies. *Biogeochemistry* 83: 293-309.
- 5) Nejstgaard, J.C., M.E. Frischer, P.G. Verity, J.T. Anderson, A. Jacobsen, M.J. Zirbel, A. Larsen, J. Martinez-Martinez, A.F. Sazhin, T. Walters, D.A. Bronk, S.J. Whipple, S.R. Borrett, B.C. Patten, and J.D. Long (2006). Plankton development and trophic transfer in sea water enclosures with nutrients and *Phaeocystis pouchetii* added. *Marine Ecology Progress Series* 321: 90-121.
- 4) Long, J.D. and M.E. Hay (2006). When intraspecific exceeds interspecific variance: effects of phytoplankton morphology and growth phase on copepod feeding and fitness. *Limnology and Oceanography* 51(2): 988-996.
- 3) Long, J.D. and M.E. Hay (2006). Fishes learn aversions to a nudibranch's chemical defense. *Marine Ecology Progress Series* 307: 199-208.
- 2) Weiss, M.R., E.M. Lind, M.T. Jones, J.D. Long, and J.L. Maupin (2003). Uniformity of leaf shelter construction by larvae of *Epargyreus clarus* (Hesperiidae), the silver spotted skipper. *Journal of Insect Behavior* 16(4): 465-480.
- 1) Lind, E.M., M.T. Jones, J.D. Long, and M.R. Weiss (2001). Ontogenetic changes in leaf shelter construction by larvae of the silver-spotted skipper, *Epargyreus clarus*. *Journal of the Lepidopterists' Society* 54: 77-82.

Manuscripts (in press)

Long, J.D., M.E. Frischer, and C.Y. Robertson (in press). A *Phaeocystis globosa* bloom associated with upwelling in the subtropical South Atlantic Bight. *Journal of Plankton Research*.

Teaching and Educational Experiences

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| 2007(Fall) | Instructor Invertebrate Zoology Lecture and Lab, 3 Seas Program |
| 2007 | Science Fair Judge Boston Public Schools. |
| 2005 | Intertidal CSI MDIBL Children's Science Night. |
| 2005 | Invited Talk Clark Elementary School. |
| 2004 | Guest Lecturer Undergraduate Biology Seminar Course. USD. |
| 2004 | Invited Talk Hancock Elementary School. |
| 2003, 2005 | Plankton Sink-Off Encouraged learning about planktonic organisms through a craft project for young children. Open House at SkIO (2003) and MSC (2005). |
| 2003 | Science Fair Project Consultant Provided guidance and laboratory resources to students examining allelopathy in salt marsh plants. Savannah, GA |
| 2002-2004 | Science Fair Judge , three years, Savannah Ogeechee Regional Science and Engineering Fair. |
| 2001-2002 | Science Fair Judge , two years, Savannah Christian Preparatory Middle School. |

- 2001 **Mentor** Erica Kinard (recently graduated research technician). Directed and advised her research on chemical defenses of oyster reef organisms.
- 2000 **Mentor** Deborah Henry (minority middle school teacher). Provided scientific guidance on a program to educate middle school students about brittle stars.
- 2000 **Teaching Assistant** Introduction to Organismal Biology. Georgia Tech.
- 1999 **Teaching Assistant** Biological Principles. Georgia Tech.

Professional Positions

- 2004 **Advertising Coordinator and Committee Member** 1st Annual Southeastern Ecology and Evolution Conference, Georgia Tech
- 2003 **Student Representative to Faculty Search Committee** SkIO
- 2002-2004 **Student Committee Member** Education Sub-Committee, ASLO
- 2000-2001 **Vice President** School of Biology Graduate Student Association, Georgia Tech

Invited Seminars

- 2007 **Tjärnö Marine Biological Laboratory** Seminar Series (Tjärnö, Sweden)
- 2007 **Chapman University** Seminar Series (Orange, CA)
- 2006 **Baruch Marine Field Laboratory** Seminar Series (Georgetown, SC)
- 2006 **Bigelow Laboratory for Ocean Sciences** Seminar Series (Boothbay Harbor, ME)
- 2006 **Cal State Long Beach** Seminar Series (Long Beach, CA)
- 2006 **University of Maine** Seminar Series (Orono, ME)
- 2005 **NPERF** Committee Meeting (Chico, MT)
- 2005 **Acadia National Park** Ranger Resource Session (ME)
- 2005 **Mount Desert Island Biological Laboratory** Seminar Series (MDIBL, ME)
- 2004 **ASLO** Meeting Field Trip (Savannah, GA)
- 2003 **Scientific Committee on Oceanic Research (SCOR) Working Group Meeting (WG120)** Marine Phytoplankton and Global Climate Regulation: The *Phaeocystis* spp. Cluster as a Model (Savannah, GA)
- 2003 **Skidaway Institute of Oceanography** Seminar Series (Savannah, GA)
- 2002 **University of Bergen** Seminar Series (Bergen, Norway)

Professional Presentations

- 2007 Asymmetric competition via induced resistance. Benthic Ecology Meeting (Atlanta, GA).
- 2006 Consumer-specific inducible defenses: when size matters and bigger isn't necessarily better. Western Society of Naturalists Annual Meeting (Redmond, WA).
- 2006 Inducible responses in seaweeds and the relevance of laboratory experiments. Ecological Society of America Annual Meeting (Memphis, TN).
- 2006 Trait-Mediated Indirect Effects of Seaweed Herbivory. Benthic Ecology Meeting (Quebec City, Quebec).
- 2005 Seaweeds Tell No Lies: Testing for a Chemically-Mediated Cascade. Benthic Ecology Meeting (Williamsburg, VA).
- 2004 Effects of grazer cues on algal colony formation: Eavesdropping Elms of the Ocean. Ecological Society of America Annual Meeting (Portland, OR).
- 2004 Variable Fecal Pellet Production of Three Calanoid Copepods: The Importance of Algal Morphology, Culture Age, and Grazer Species. ASLO Summer Meeting (Savannah, GA-poster).

- 2004 Chemical Cues from Grazing Copepods Suppress Colony Formation in *Phaeocystis*: When Bigger isn't Better. ASLO Ocean Sciences Meeting (HI).
- 2004 Grazing, Eavesdropping, and the Motion of the Ocean. 1st Annual Southeastern Ecology and Evolution Conference (Atlanta, GA).
- 2003 Learned Aversion and Retention: How Marine Fishes Avoid New Aversive Foods. Ecological Society of America Annual Meeting (Savannah, GA).
- 2002 Moving Beyond First Impressions: Isolation and Identification of a Chemical Associated with Learned Food Aversions. Western Society of Naturalists Annual Meeting (Monterey Bay, CA).
- 1998 Good Housekeeping: Frass Ejection and Removal Behavior in *Epargyreus clarus*, the silver spotted skipper. Weiss, M., M. Jones, and J. Long. Entomological Society of America Annual Meeting (Las Vegas, NV).

Phytoplankton Culture Isolation

Coscinodiscus wailesii (CCMP2513) and *Phaeocystis globosa* (CCMP2754) deposited in CCMP's algal collection

Reviewer

Aquatic Biology, Journal of Ecology, Journal of Phycology, Marine Biology, Marine Ecology, Marine Ecology Progress Series, Physiological and Biochemical Zoology

Professional Organizations

ASLO (American Society of Limnology and Oceanography), ESA (Ecological Society of America), WSN (Western Society of Naturalists)

Press

"Asymmetric competition in marine snails." ESA Bulletin 88(1): 33.

"Grant allows postdoc researcher to study aquatic plant life at Maine National Park." Northeastern University Magazine, May 2005, p. 50.

Zoellick, Bill. "Researcher offers opportunity to participate in work on plant-animal interactions." Acadia Partners for Science and Learning.

www.acadiapartners.org/index.php?name=News&file=article&sid=18 (accessed 8-16-06).

McKenna, Jim. "Project SASHA: Surveying Acadia's Seaweed and Herbivore Abundances." Acadia National Park Schoodic Education and Research Center.

www.nps.gov/acad/serc/education/resourceacadia.htm (accessed on 8-16-06).

References

Dr. Mark E. Hay (graduate advisor)
Professor and Linda and Harry Teasely Chair in Environmental Biology
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Dr. Erik Sotka (collaborator)
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