

Curriculum Vitae
Byron Evans Pedler

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EDUCATION

2005 **Bachelor of Science in Biology; Marine and Freshwater Biology (Honors)**

University of New Hampshire, Durham, NH
Honors in Major
Cumulative GPA 3.46/4.0 *Cum Laude*
Final 60 cr. GPA: 3.81/4.0

AWARDS AND RECOGNITIONS

2005 (Spring) **“Best Poster Award,”** American Academy for Underwater Science (AAUS) 2005 National Symposium, Hosted by the University of Connecticut, Marine Science and Technology Center, Avery Point, CT

PUBLICATIONS AND PRESENTATIONS

2005 (July) **“New and Possibly Natural Halogenated Organic Compounds in Marine Mammals,”** Emma L. Teuten, Byron E. Pedler, Alexandra Hangsterfer and Christopher M. Reddy
• Environmental Pollution, 2005; in press

2005 (April) **Undergraduate Research Conference,** University of New Hampshire, Durham, NH
• Oral presentation: 30 April 2005

2005 (April) **National Conference on Undergraduate Research (NCUR),** Hosted by the Virginia Military Institute and Washington and Lee University, Lexington, VA
• Oral presentation: 21-23 April 2005

2005 (March) **American Academy for Underwater Science (AAUS) 2005 National Symposium,** Hosted by University of Connecticut, Marine Science and Technology Center, Avery Point, CT
• Poster presentation: 10-12 March 2005

RESEARCH AWARDS/EXPERIENCE

2005 (Summer) **Summer Student Fellowship, Woods Hole Oceanographic Institution,** Woods Hole, MA
• “Investigating the Bioaccumulation of Halogenated Organic Compounds in Marine Mammals”
• Isolation and quantification of organic halogenated compounds from marine mammals and their dietary sources via both high-resolution gas chromatography mass spectrometry (HR-GCMS) and gas chromatography flame ionization detection (GC-FID).
• Large scale isolation of lipids from marine mammal blubber for characterization and description of previously unidentified halogenated organic compounds.

2004 (Fall) **Undergraduate Research Award,** Undergraduate Research Opportunities Program (UROP), University of New Hampshire, Durham, NH and Portobello Marine Laboratory, University of Otago, Dunedin, New Zealand.
• “Construction of a Biological Weighting Function for DNA Damage in Sea Urchin Embryos Exposed to Ultraviolet Radiation”

2004 (Summer) **Undergraduate Research Award,** International Research Opportunities Program (IROP), University of New Hampshire, Durham, NH and Portobello Marine Laboratory, University of Otago, Dunedin, New Zealand.
• “The Effects of Ultraviolet Radiation on Embryos of the New Zealand Sea Urchin, *Pseudechinus huttoni* and the Role of Mycosporine-Like Amino Acids”

PROFESSIONAL EXPERIENCE

- 2005 (Current) **Research Assistant II**, Dr. Chris Reddy, Marine Chemistry and Geochemistry Department, Woods Hole Oceanographic Institution, Woods Hole, MA
- Purification and analysis of a new family of halogenated organic compounds bioaccumulating in marine mammals; an investigation of toxicity, chemical structure and source (industrial or natural)
- 2005 (spring) **Research Technician**, Dr. Charles Walker and Dr. Michael Lesser, Department of Zoology, University of New Hampshire, Durham, NH
- “Molecular Genetics and Evolution of p53 in Marine Invertebrates”
 - Isolated invertebrate genomic DNA
 - Utilized polymerase chain reaction (PCR) and cloning techniques
 - Developed p53 gene (tumor-suppression) genetic markers.
- 2003-2004 **Research Technician**, Dr. Michael Lesser, Department of Zoology and Center for Marine Biology, University of New Hampshire, Durham, NH
- Extracted genomic DNA from Antarctic and New Zealand sea urchin embryos and larvae.
 - Conducted ELISAs (enzyme linked immunoabsorbent assay) on extracted DNA to quantify DNA damage via accumulation of cyclobutane pyrimidine dimers (CPDs).
- 2004 (Summer) **Field Assistant**, Portobello Marine Laboratory, Dunedin, New Zealand
- Fiordland Ecosystem Study: Assisted in capturing, weighing, measuring, collecting blood and fin samples, tagging and releasing Blue Cod in Doubtful Sound, Fiordland, New Zealand.
 - Assisted in the collection of *in situ* experimental algae tissue samples and recording underwater PAM (photosynthetic activity measure) readings via SCUBA.
- 2002 (Fall) **Field Technician**, Marine Research Inc., Falmouth, MA
- Assessed the environmental impact of the Newington, NH Power Station.
 - Identified, measured, and enumerated marine flora and fauna impinged on intake screens of the power facility
 - Transferred data to spreadsheets to be included in official Marine Research Inc. report.
- 2002 (Summer) **Guest Student**, Dr. Larry Madin, Woods Hole Oceanographic Institution, Woods Hole, MA
- Identified, measured, and enumerated gelatinous microzooplankton
 - Transferred field data to computer spreadsheets for analysis
 - Assisted in two (2) open ocean research cruises.
- 2002 (Spring) **Laboratory Assistant**, Dr. Stacia Sower, Department of Biochemistry and Molecular Biology, University of New Hampshire, Durham, NH
- Prepared histological microscope slides of hagfish gonad tissues to assist in mapping the stages of hagfish gonad development.
 - Assisted in monthly hagfish collections (Gulf of Maine, *R/V Challenger*)

OPEN OCEAN FIELD EXPERIENCE

- 2006 (scheduled) **R/V Laurence M. Gould**, Dr. Larry Madin (Co-PI), Woods Hole Oceanographic Institution, Woods Hole, MA (research assistant for Antarctic research cruise scheduled: 13 Feb-14 March 2006)
- “Salpa thompsoni in the Southern Ocean: Bioenergetics, population dynamics, and Biogeochemical impacts”
 - Will assist shipboard scientific operations including: biological collections via net deployments and SCUBA diving
- 2003 (10 Feb-20 Mar) **SSV Corwith Cramer**, *SEA Semester*, Sea Education Association, Woods Hole, MA
- Responsible for deployment of oceanographic equipment and collection of scientific data for a series of shipboard research projects
 - Responsible for successful operation and navigation of the ship by means of celestial navigation, dead reckoning, plotting courses, setting and striking sails as well as utilizing GPS and RADAR

- 2002 (1-14 June) **R/V Oceanus**, Dr. Larry Madin, Woods Hole Oceanographic Institution, Woods Hole, MA
- Facilitated nightly zooplankton net deployments (20:00-06:00)
 - Identified and enumerated biological net trawl collections
 - Recorded and compiled hourly ship event and data logs
- 2002 (15 -27 Sept) **R/V Oceanus**, Dr. Larry Madin, Woods Hole Oceanographic Institution, Woods Hole, MA
- Collected gelatinous zooplankton for lab experimentation via Blue Water SCUBA diving
 - Same as above
- 2000 (6-25 August) **SSV Corwith Cramer. Oceanography of the Gulf of Maine**, Shoals Marine Laboratory, Cornell University, Appledore Island, NH

TEACHING EXPERIENCE

- 2005 (spring) **Biochemistry Lab**, Undergraduate Teaching Assistant, Department of Biochemistry, University of New Hampshire, Durham, NH.
- Prepared materials needed for laboratory experiments, assisted students with laboratory exercises, and contributed to writing mid-term and final examinations.
- 2004 (spring) **Marine Microbiology Lab**, Undergraduate Teaching Assistant, Department of Microbiology, University of New Hampshire, Durham, NH.
- Prepared materials needed for laboratory experiments and assisted students with laboratory exercises and presentations.
- 2003 (fall) **Biology Lab**, Undergraduate Teaching Assistant, Department of Biology, University of New Hampshire, Durham, NH.
- Taught sections of the lab and assisted students with laboratory exercises.

LABORATORY SKILLS

- Invertebrate larval culture
- Phytoplankton culture
- GC-MS (gas chromatography mass spectrometry)
- GC-FID (gas chromatography-flame ionization detection)
- GPC (gel permeation chromatography)
- HPLC (high performance liquid chromatography)
- ELISA (enzyme linked immunoabsorbent assay)
- DNA isolation and quantification
- RNA isolation and quantification
- cDNA synthesis
- PCR (polymerase chain reaction)
- Genetic cloning
- Polymerase gel electrophoresis

CERTIFICATIONS (current)

- AAUS (American Academy of Underwater Science) Research Diver
- Enriched Air Nitrox (International Association of Nitrox and Technical Divers)
- Open Water SCUBA (P.D.I.C. International)
- Oxygen Administration (Divers Alert Network)
- CPR and AED for healthcare providers (American Heart Association)
- Standard First Aid (American Red Cross)
- Qualified pilot/operator of the Phantom 300 Remotely Operated Vehicle (National Underwater Research Center, NURC)

REFERENCES

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