

Curriculum Vitae *(updated June 2007)*

Marlene A. Jeffries

Oceanographic Research Specialist
Marine Biogeochemistry Laboratory
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Research Interests

My current research interests include scientific programming and meso-scale to large-scale physical oceanography applied to biogeochemical cycles.

Education and Relevant Courses

- M.Sc. 2004
Physical Oceanography, University of Washington, Seattle, USA
Supervisor: Dr. Craig Lee
Topic: *A Mode-based Climatology of the Adriatic Sea*
- B.Sc. 2001
Honours Physics, minor in Nuclear Science, Simon Fraser University,
Burnaby, Canada
- Geophysical and Environmental Fluid Dynamics Summer School, Cambridge, UK

Relevant Research Experience

- September 2005 – December 2006, Research Technician
- January 2007 – Current, Research Specialist
Marine Biogeochemistry Laboratory
Bermuda Institute of Ocean Sciences, Bermuda
 - Currently investigating neural network models (SOM, MLP) and their applications to biogeochemical cycles in the Northern Atlantic Ocean.
 - Estimated global Net Community Production using regional multi-linear regression models of DIC and TA.
 - Creation and maintenance of BATS MATLAB® webserver as well as maintenance of the Marine Biogeochemistry Lab's website.
 - Ongoing data maintenance and visualization.
- July 2001 – April 2005, Graduate Research Assistant
Integrative Observational Platforms Group
Applied Physics Laboratory, Seattle, USA
 - Created an alternate method for devising a climatology in a highly variable littoral environment.

Other Research Experience

- April 2000 – January 2001, Undergraduate Research Assistant
Semiconductor Interface Characterization Laboratory, Burnaby, Canada
- April – August 1999, Defence Research Assistant
Defence Research Establishment Valcartier, Quebec, Canada

Field Experience

- R/V Atlantic Explorer, CarboMode, June 2007 – 12 days.
To study the recently formed Sub-tropical mode waters in the North Atlantic
Dissolved oxygen sampling and analysis.
- R/V Knorr, CLIMODE, February 2007 – 20 days.
To study the carbon uptake of Sub-tropical mode water in the North Atlantic.
DIC sampling from rosette.
- R/V Knorr, DOLCE VITA II, May/June 2003 - 25 days.
Response of the Adriatic Sea to strong river forcing.
Trisoarus pilot and watchstander.
- R/V Knorr, DOLCE VITA I, Jan/Feb 2003 - 24 days.
Response of the Adriatic Sea to strong atmospheric forcing.
Trisoarus pilot and watchstander.
- USCGC Polar Star, Chukchi-Borderlands, West Arctic, Aug/Sept 2002 - 35 days.
CTD water sampling and LADCP deployment.
- R/V Thompson, March 2001 – 8 days.
Mixing in Puget Sound, Puget Sound and Admiralty Inlet.
Assisted with microstructure profiling and mooring deployment.
- R/V Barnes Student Cruises in Elliot Bay, Puget Sound
My duties included teaching an introduction to water sampling using a CTD rosette, nutrient/dissolved oxygen analysis and general safety aboard vessels.

Teaching Experience

- Graduate Teaching Assistant, Ocean 101: A Survey of Oceanography
University of Washington, School of Oceanography, Seattle, USA
- Educational Volunteer, Seachange Marine Conservation Society – EcoRowing Program and Stream Studies. Victoria, B.C., Canada

Awards and Scholarships

- 2004 Aboriginal Academic Achievement Award
- 2004 NERC grant to attend GEFD Summer School
- 2001 Aboriginal Academic Achievement Award
- 2001 Best Undergraduate Poster, 2001 Annual Student Conference on Materials Science, UBC, Vancouver, Canada
- 1999 Aboriginal Academic Achievement Award
- 1997 Royal Canadian Legion Bursary

Professional Memberships

- American Geophysical Union (member)

Publications

- **Jeffries, M. A.**, and C. M. Lee (2007), *A climatology of the northern Adriatic Sea's response to bora and river forcing*, J. Geophys. Res., 112, C03S02, doi:10.1029/2006JC003664.
- Adamcyk, M., Tixier, S., Ruck, B.J., Schmid, J.H., Tiedje, T., Fink, V., **Jeffries, M.A.**, Karaiskaj, D., Kavanagh, K.L., Thewalt, M., *Faceting Transition in Epitaxial Growth of Dilute GaNAs Films on GaAs*, J. Vac. Sci. Technol. B, **19**, 4 (Jul/Aug 2001)

Conference Proceedings

- Bates, N.R., Purinton, B., **Jeffries, M.A.**, *Air-sea Carbon Dioxide Exchange and Fate of Carbon in Eighteen Degree Water (EDW) of the North Atlantic Ocean: Initial Results from the 2006 CLimate MOde water Dynamics Experiment (CLIMODE)*, AGU Meeting 2006, San Francisco, CA, USA
- **Jeffries, M.A.**, Lee, C.M., *A Dynamic Climatology of the Northern Adriatic Sea*, AGU Ocean Sciences Meeting 2003, Portland, OR, USA
- **Jeffries, M.A.**, Adamcyk, M., Fink, V., Hardy, W.N., Karaiskaj, D., Kavanagh, K.L., Ruck, B.J., Schmidt, J.H., Thewalt, M., Tiedje, T., *Strain Relaxation of GaNAS/GaAs using High Resolution X-Ray Diffraction Techniques*, 2001 Annual Student Conference on Materials Science, UBC, Vancouver, Canada
- Farinaccio, R., **Jeffries, M.A.**, Stowe, R., *Air/Fuel Mixing in a Ducted Rocket Combustor*, 9th Annual Conference CFD Society of Canada, 2001

Technical Reports

- **Jeffries, M.A.**, Stowe, R., *Improved Image Correction Technique for Visualization of the Air/Fuel Mixing in a Ducted Rocket Combustor*, DREV TM, 1999-2000, March 2000