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RESEARCH INTERESTS

Variability, forcing, and dynamics of shelfbreak currents and fronts; dynamic coupling between shelf and slope circulation; dynamics of frontal eddies and their influence on biological communities.

EDUCATION

- 1998** Ph.D., Physical Oceanography, RSMAS, University of Miami, Miami, Florida.
The formation and evolution of Tortugas Eddies in the southern Straits of Florida and Gulf of Mexico. Thesis Advisor: Thomas N. Lee
- 1992** B.S., Physics, Mary Washington College, Fredericksburg, Virginia.

EXPERIENCE

- Present** Research Associate III
Department of Physical Oceanography, Woods Hole Oceanographic Institution
- 1998-2001** Postdoctoral Investigator
Department of Physical Oceanography, Woods Hole Oceanographic Institution
Postdoctoral Advisor: Robert S. Pickart
- 1992-1998** Graduate Research Assistant
Department of Meteorology and Physical Oceanography
RSMAS, University of Miami
- 1991** Undergraduate Research Assistant
Virginia Institute of Marine Science, College of William and Mary

AWARDS

- 1998** Departmental nominee, F. G. Walton Smith Prize – most original piece of research in marine and atmospheric science. Department of Meteorology and Physical Oceanography, RSMAS, University of Miami.
- 1991** NSF sponsored undergraduate Research Assistantship
Department of Physics, College of William and Mary.

REFEREED PUBLICATIONS

- Gilbert**, P. S., T. N. Lee, and G. P. Podesta, 1996. Transport of anomalous low-salinity waters from the Mississippi River flood of 1993 to the Straits of Florida. *Continental Shelf Research*, **16**, 1065-1085.
- Fratantoni**, P. S., T. N. Lee, G. P. Podesta, and F. Müller-Karger, 1998. The influence of Loop Current perturbations on the formation and evolution of Tortugas eddies in the southern Straits of Florida. *Journal of Geophysical Research*, **103**, 24,759-24,779.
- Fratantoni**, P. S., R. S. Pickart, D. J. Torres, and A. Scotti, 2001. Mean structure and dynamics of the shelfbreak jet in the Middle Atlantic Bight during fall and winter. *Journal of Physical Oceanography*, **31**, 2135-2156.
- Fratantoni**, P. S., and R. S. Pickart, 2003. Variability of the shelfbreak jet in the Middle Atlantic Bight: Internally or externally forced? *Journal of Geophysical Research*, **108**, 3166, doi: 10.1029/2002JC001326.
- Pickart, R. S. D. Torres, and P. **Fratantoni**, 2005: The East Greenland Spill Jet, *Journal of Physical Oceanography*, **35**, 1037-1053.
- Fratantoni**, P. S., and R. S. Pickart. The western North Atlantic Shelfbreak Current System in Summer. *Journal of Physical Oceanography*, **37**, 2509-2533.
- Spall, M.A., R. S. Pickart, P. S. **Fratantoni**, A. J. Plueddemann, 2008. Western Arctic Shelfbreak Eddies: Formation and transport, *Journal of Physical Oceanography*, **38**, 1644-1668.
- Pickart, R. S., G. W. K. Moore, D.J. Torres, P.S. **Fratantoni**, R.A. Goldsmith, and J. Yang, 2009: Upwelling on the continental slope of the Alaskan Beaufort Sea: Storms, ice, and oceanographic response. *Journal of Geophysical Research*, **114**, C00A13, doi:10.1029/2008JC005009.
- Nikolopoulos, A., R.S. Pickart, P.S. **Fratantoni**, D.J. Torres, and E.P. Jones, 2009. The western arctic boundary current at 152W: Structure, variability, and transport, *Deep Sea Research II*, **56**(17),1164-1181.
- Fratantoni**, P. S. and M. S. McCartney, 2009: Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland. *Deep Sea Research Part I: Oceanographic Research Papers*, submitted.

ABSTRACTS AND CONFERENCE PROCEEDINGS

- Gilbert**, P. S., T. N. Lee, G. P. Podesta, and P. Ortner, 1994. Mississippi River water in the Florida Straits, Florida Coastal Ocean Sciences Symposium, Miami, Florida, April 21-22.
- Gilbert**, P.S., T. N. Lee, G. P. Podesta, and P. Ortner, 1994. Mississippi River water in the Florida Straits, *EOS Transactions*, AGU, **75**, 209.
- Gilbert**, P.S., and T. N. Lee, 1995. Coastal gyres in the Florida Straits and their effects on recruitment, Fourth Scientific Meeting of The Oceanography Society, Newport, Rhode Island, April 18-21.

- Gilbert**, P. S., T. N. Lee, and G. P. Podesta, 1995. Modes of Current variability in the southern Straits of Florida, *EOS Transactions*, AGU, **76**, 140.
- Garzoli, S. L., P. Richardson, C. Duncombe Rae, D. Fratantoni, G. Goni, J. Mantel, A. Roubicek, P. **Fratantoni**, and C. Whittle, 1998. Benguela Current experiment, *EOS Transactions*, AGU, **79**, 131.
- Fratantoni, D. M., P. Richardson, C.M. Duncombe-Rae, S. L. Garzoli, and P. S. **Fratantoni**, 1998. Three warm-core rings in the eastern South Atlantic, *EOS Transactions*, AGU, **79**(1), 131.
- Fratantoni**, P. S., T. N. Lee, G. P. Podesta, and F. Muller-Karger, 1998. The influence of Loop Current variability on the formation and evolution of cyclonic eddies in the southern Straits of Florida, *EOS Transactions*, AGU, **79**, 132.
- Fratantoni**, P. S., R. S. Pickart, D. J. Torres, and A. Scotti, 2000. Structure and variability of the shelfbreak jet in the Middle Atlantic Bight, *EOS Transactions*, AGU, **81**, 677.
- Fratantoni**, P. S., R. S. Pickart, 2000. Slopewater forcing of the shelfbreak jet in the Middle Atlantic Bight, *EOS Transactions*, AGU, **81**, 677.
- Fratantoni**, P. S., and R. S. Pickart, 2004. The western North Atlantic shelfbreak current system, *EOS Transactions*, AGU, **85**(47).
- Pickart, R. S., P. S. **Fratantoni**, R. A. Goldsmith, G. Moore, T. Agnew, and J. Vandeweghe, 2006. Upwelling in the western Arctic boundary current north of Alaska, *EOS Transactions*, AGU, **87**(36).
- Fratantoni**, P. S., 2008. The North Atlantic shelfbreak current: An advective link for climate variability, , Ocean Sciences Meeting Suppl., Session 074.
- McCartney, M S, and **Fratantoni**, P. S., 2008. Branches, bifurcations, and retroreflections over the Tail of the Grand Banks of Newfoundland, Ocean Sciences Meeting Suppl., Session 010.
- Lund, J M, P S **Fratantoni**, B A Hodges, and D M Fratantoni, 2008. Exploring the feasibility of glider-based transport, stratification, and ecology measurements on the New England Shelf between MVCO and Line W, Ocean Sciences Meeting Suppl., Session 024.
- Fratantoni**, P. S., M. S. McCartney, and K. A. Donohue, 2008. Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland, US GLOBEC Regional Synthesis workshop, Portsmouth, NH, October, 2008.
- Fratantoni**, P. S., M. S. McCartney, and K. A. Donohue, 2008. Tale of two currents: The collision of the Gulf Stream and Deep Western Boundary Current at the Tail of the Grand Banks of Newfoundland, *Eos Trans.* AGU, 89(53), Fall Meet. Suppl., Abstract OS33B-1344.
- Fratantoni**, P. S., M. S. McCartney, and K. A. Donohue, 2009. Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland, European Geophysical Union Meeting, Vienna, Austria, April 2009.
- Fratantoni**, P. S., M. S. McCartney, and K. A. Donohue, 2009. Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland, US Atlantic Meridional Overturning Circulation (AMOC) Annual Meeting, Annapolis, Maryland, May 2009.

Fratantoni, P. S., M. S. McCartney, and K. A. Donohue, 2009. Tale of two currents: The collision of the Gulf Stream and Deep Western Boundary Current at the Tail of the Grand Banks of Newfoundland, US Atlantic Meridional Overturning Circulation (AMOC) Annual Meeting, Annapolis, Maryland, May 2009.

TECHNICAL REPORTS

Podesta, G. P., J. Splain, and P. S. **Gilbert**, 1995. Satellite-derived sea surface temperature fields off South Florida, July 1993-June 1994: Project II – Task 4: Oceanic and Atmospheric Observing systems collection and processing of AVHRR data, South Florida Oil Spill Research Center Technical Report, Miami, Florida.

Fratantoni, P. S., S. Zimmermann, M. Swartz, and R. S. Pickart, 2006. Western Arctic Shelf-Basin Interactions Experiment: Processing of moored profiler data from the Beaufort Shelf Edge mooring array, Woods Hole Oceanographic Institution Technical Report, WHOI-06-15, 34pp.

PROPOSALS FUNDED

Evolution of the Shelfbreak Current from Denmark Strait to the Gulf Stream.
P. S. Fratantoni and R. S. Pickart, Co-Principal Investigators.
National Science Foundation, 2001-2004.

Branches, bifurcations and retroreflections at the Tail of the Grand Banks.
M. S. McCartney, and P. S. Fratantoni, Co-Principal Investigators.
National Science Foundation, 2006-2009.

The North Atlantic shelfbreak current: an advective link for climate variability.
P. S. Fratantoni, Principal Investigator.
Ocean and Climate Change Institute, Woods Hole Oceanographic Institution, 2006-2008.

The absorption of arctic export waters into the North Atlantic Current.
M. S. McCartney, and P. S. Fratantoni, Co-Principal Investigators.
Ocean and Climate Change Institute, Woods Hole Oceanographic Institution, 2009-2011.

PROFESSIONAL TALKS AND PRESENTATIONS

2009 Atlantic Meridional Overturning Circulation (AMOC) Annual Meeting, Annapolis, MD, May 2009. “*Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland*” and “*Tale of two currents: The collision of the Gulf Stream and Deep Western Boundary Current at the Tail of the Grand Banks of Newfoundland.*” (posters)

2009 European Geophysical Union Meeting, Vienna, Austria, April, 2009.
Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland. (poster).

2008 American Geophysical Meeting, San Francisco, CA, December, 2008.
Tale of two currents: The collision of the Gulf Stream and Deep Western Boundary Current at the Tail of the Grand Banks of Newfoundland. (poster).

- 2008** U.S. GLOBEC Regional Synthesis workshop, Portsmouth, NH, October, 2008.
Freshwater export from the Labrador Current to the North Atlantic Current at the Tail of the Grand Banks of Newfoundland.
- 2008** ASLO/ERF/TOS/AGU Ocean Sciences Meeting, Orlando, FL, March, 2008.
The North Atlantic shelfbreak current: An advective link for climate variability. (poster).
- 2006** 10th HYCOM Consortium Meeting, Florida State University, Tallahassee, FL, November, 2006.
Two Gyres revisited: Branches, bifurcations, and retroreflections over the Tail of the Grand Banks. (poster).
- 2005** Gordon Research Conference on Coastal Ocean Circulation, Colby-Sawyer College, New London, NH, June, 2005.
The western North Atlantic shelfbreak current system (poster).
- 2005** Department of Physical Oceanography, WHOI, Woods Hole, MA, May 2005.
The western North Atlantic shelfbreak current system.
- 2004** American Geophysical Union Fall Meeting, San Francisco, CA, December 2004.
The western North Atlantic shelfbreak current system.
- 2002** Department of Physical Oceanography, WHOI, Woods Hole, MA, December, 2002.
Variability of the shelfbreak jet in the Middle Atlantic Bight: internally or externally forced?
- 2002** Middle Atlantic Bight Physical Oceanography and Meteorology Meeting, Old Dominion University, Norfolk, VA, October 2002.
Variability of the shelfbreak jet in the Middle Atlantic Bight: internally or externally forced?
- 2001** Gordon Research Conference on Coastal Ocean Circulation, Colby-Sawyer College, New London, NH, June, 2001.
Coupled variability of the shelfbreak jet and slopewater circulation in the Middle Atlantic Bight (poster)
- 2000** Fall American Geophysical Union Meeting, San Francisco, California, December, 2000.
Slopewater forcing of the shelfbreak jet in the Middle Atlantic Bight.
- 2000** AGU/ASLO Ocean Sciences Meeting, San Antonio, Texas, January, 2000.
Structure and variability of the shelfbreak jet in the Middle Atlantic Bight.
- 2000** Graduate School of Oceanography, University of Rhode Island, Narragansett, January 2000
Mean synoptic structure and variability of the shelfbreak jet in the Middle Atlantic Bight.
- 1999** Department of Physical Oceanography, WHOI, Woods Hole, MA, September, 1999.
Mean synoptic structure and variability of the shelfbreak jet in the Middle Atlantic Bight.
- 1999** ONR Shelfbreak PRIMER Workshop, WHOI, Woods Hole, MA, March, 1999
Mean synoptic structure of the shelfbreak jet during PRIMER.
- 1998** Department of Physical Oceanography, WHOI, Woods Hole, MA, March 1998
Satellite Observations of circulation patterns in the southern Straits of Florida.

- 1997** Department of Physics, Mary Washington College, Fredericksburg, VA, April, 1997.
Graduate studies in physical oceanography: Using physics to study the sea.

SHIPBOARD EXPERIENCE

- 1997** Benguela Current study, Trans-Atlantic cruise, R/V Seward Johnson, 28 days.
Watch stander responsible for the collection and interpretation of CTD and XBT data.
Assisted in the deployment of 32 RAFOS floats and 12 subsurface drifters.
- 1995** WOCE repeat line – I8, Trans-Indian Ocean cruise, R/V Malcolm Baldrige, 35 days.
Watch stander responsible for the collection and interpretation of CTD data.
- 1994** ACCP/Windward Island Passages Monitoring Program, R/V Malcolm Baldrige, 14 days.
Watch stander responsible for the collection and interpretation of CTD data.
- 1993** Straits of Florida Circulation study, R/ V Columbus Iselin, 10 days.
Responsible for real-time retrieval, display and interpretation of remotely sensed SST fields in support of tactical planning of sampling activities and interpretation of observations.

SYNERGISTIC ACTIVITIES

Provided real-time support in the initial development of an educational outreach website (www.whoi.edu/arcticedge) detailing the activities of the scientific party on an Arctic expedition aboard USCG Polar Star. Invited to give lectures at the University of Mary Washington to introduce undergraduate physics majors to the field of physical oceanography. Guest speaker at Sea Education Association, speaking to undergraduates about the physical oceanography of the Straits of Florida in preparation for the field portion of their semester at sea.

PROFESSIONAL MEMBERSHIPS

American Geophysical Union; American Institute of Physics