

CURRICULUM VITAE

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I. EDUCATION

1991	B.S., University of California at San Diego.	Physics (Earth Sciences).
1998	Ph.D., University of Miami.	Physical Oceanography.

II. PROFESSIONAL BACKGROUND

1991-1997, Graduate Research Assistant, Division of Meteorology and Physical Oceanography, Rosenstiel School of Marine and Atmospheric Science, University of Miami.

1997 - 2000, Postdoctoral Fellow, Universities Space Research Association, Goddard Space Flight Center, NASA.

2000 - 2001, Research Associate, University of Maryland, Baltimore County, Goddard Earth Science and Technology Center.

1999 – July 2001, Visiting Scientist, Horn Point Laboratory, University of Maryland Center for Environmental Science.

July 2001 – Present, Assistant Research Professor, Horn Point Laboratory, University of Maryland Center for Environmental Science.

III. RESEARCH

A. Areas of professional expertise

Observation and modeling of ocean circulation variability and climate.

Watermass ventilation and tracer transport.

Biogeochemical and ecosystem modeling

B. Peer-Reviewed Publications

1. Papers in Refereed Journals

- Griffa, A., E. P. Chassignet, **V. J. Coles**, and D. B. Olson (1996) Inertial gyre solutions from a primitive equation ocean model. *Journal of Marine Research*, **54**: 653—677.
- Coles, V. J.**, M. S. McCartney, D. B. Olson, and W. M. Smethie, Jr. (1996) Changes in Antarctic Bottom Water properties in the western South Atlantic in the late 1980's. *Journal of Geophysical Research*, **101**: 8957—8970.
- Coles, V.J.** and M. M. Rienecker (2001) North Pacific subtropical-tropical gyre exchanges in the thermocline: Simulations with two isopycnal OGCM's. *Journal of Physical Oceanography*, **31**: 2590-2611.
- Coles, V.J.**, C. Wilson, R. R. Hood (2004) Remote sensing of new production fuelled by nitrogen fixation. *Geophysical Research Letters*, **31**, L06301, doi: 10.1029/2003GL019018.
- Coles, V.J.**, R. R. Hood, M. Pascual and D. G. Capone (2004) Modeling the impact of *Trichodesmium* and nitrogen fixation in the Atlantic Ocean. *Journal of Geophysical Research*. 109, C06006, doi:10.1029/2002JC001753.
- Hood, R.R., **V. J. Coles**, and D. G. Capone (2004) Modeling the distribution of *Trichodesmium* and nitrogen fixation in the Atlantic Ocean. *Journal of Geophysical Research*. **109**, C06007, doi:10.1029/2002JC001754.
- Wilson, C., **V. J. Coles** (2005) Global climatological relationships between satellite biological and physical observations and upper ocean properties. *Journal of Geophysical Research*, revised.

2. Books or Chapters in Books and Other Publications

- Hood, R.R., **V. J. Coles**, M. Pascual, and D. G. Capone (2001) Modeling *Trichodesmium* and Nitrogen Fixation in the Atlantic: JGOFS meets Biocomplexity. *US. JGOFS News*, **11**: 3pp.

C. Contracts and Grants

1. Awarded (Current)

- “Factors affecting, and impact of, diazotrophic microorganisms in the western equatorial Atlantic Ocean”, NSF Biocomplexity Phase I, 1/1/2000 – 1/1/2005, \$282,000, HPL Component. (Co-Investigator, 50% time).
- “Understanding bio-physical coupling in the Atlantic using combined satellite observations and ocean modeling”, NASA 1/1/2003-1/1/2006, \$58,855 HPL component. (With Cara Wilson of NOAA)

“Assessing the Impact and Variability of Coccolithophorid Blooms in the Ocean Carbon Cycle”, NOAA 2/1/2005 – 1/31/2008, \$258,530, HPL Component. (With R. R. Hood, C. Brown (NOAA), R. Murtugudde (UMCP/ESSIC))

2. Submitted

“Biocomplexity: Measuring and Modeling African Microbial Biocomplexity in the Ocean (MMAMBO)”. NSF. \$234,898. (with E. J. Carpenter (lead PI), D. G. Capone USC, Coles (HPL PI), S. Sanudo-Wilhelmy SUNY, A. Subramaniam LDEO, R. Shipe UCLA, Ron Seifert UMCES, R. Hood UMCES) Jan 2004, Aug 2004 (not pending)

“Quantifying OMZ and denitrification variability in the Eastern Tropical North Pacific”, NSF, HPL component \$481,687. (with Lou Codispoti, Al Devol U Wash, Raleigh Hood, Ben Van Mooy WHOI, Jerry Wiggert ESSIC/UMCP) (not pending)

“Detecting the Effects of Nitrogen Fixation from Satellite Remote Sensing”, NASA, HPL component \$584,223. (with Coles (PI), Hood UMCES, Wilson NOAA/PFEL) (pending)

D. Recent Seminars, Presentations, Posters and Websites

1. Invited Seminars and Papers

Coles, V.J. (2000) Pathways, transports, and interannual variability in Pacific subtropical cells. FSU.

Coles, V. J. (2001) Tracer advection in the tropics. HPL.

Coles, V.J. and R. R. Hood (2001) Simulating hydrothermal vent larval transport in ocean general circulation transport models. LARVE 2000. Ogden, Utah. (R. Hood presented).

Coles, V. J. (March 2004) Nitrogen Fixation in the Atlantic: Who Cares?. ESSIC, University of Maryland.

Coles, V. J. (April 2004) Modeling nitrogen fixation in the Atlantic, CBL.

Coles, V. J. (December 2004) Modeling nitrogen fixation in the Atlantic, NOAA/PFEL.

2. Contributed Papers and Posters

Coles, V. J. and M. M. Rienecker (2002) Salinity variability in the South Pacific subtropics. AGU Ocean Sciences Meeting, Honolulu.

Wilson C. and V. J. Coles (2002) Interpreting Satellite views of biophysical coupling with subsurface TAO data in the tropical Pacific, Fall AGU Meeting, San Francisco.

Coles, V.J., C. Wilson, R. Hood (2004) New Production Fuelled by Nitrogen Fixation, AGU Ocean Sciences Meeting, Portland.

Wilson, C., V.J. Coles (2004) Seasonal relationships between global subsurface oceanic structure (MLD and thermocline) and satellite observations, AGU Ocean Science s Meeting, Portland.

Coles, V.J., C. Wilson, R. Hood (2004) Nitrogen Fixation in the tropical North Atlantic, Layered Ocean Model Meeting, Miami.

Hood, R. R., V. J. Coles, D. G. Capone (2004) Modeling the Impact of Iron and Phosphorus Limitation on Trichodesmium Growth and Nitrogen Fixation in the Atlantic Ocean, ASLO/TOS, Honolulu.

Coles, V. J., C. Wilson (2004) Tropical Atlantic Ecosystem Variability associated with Nitrogen Fixation, CLIVAR Baltimore.

3. Web sites

Coles, V. J.: HPL faculty website, <http://www.hpl.umces.edu> (see research interests).

Biocomplexity: <http://ivan.hpl.umces.edu/~vcoles/Biocomplexity/>

HPL Physical Oceanography website.

F. Active Memberships in Professional Societies

American Meteorological Society
American Geophysical Union
Oceanography Society

IV. TEACHING AND TRAINING

2002 - Regular Member, UMCES Graduate Faculty, Horn Point Laboratory

A. University System of Maryland Courses Taught

Course No. No Lectures	Title	Institution	Semester	Enrolment	Credit Hrs.	Co-Instructors
MEES 661	Physics of Marine and Estuarine Environments	UM/MEES	Fall 2001	3		Coles/Boicourt 14 weeks
MEES 608K	<i>Climate Impacts on Estuaries and Ecosystems.</i>	UM/MEES	Fall 2002	1		Coles, Li
MEES 661	Physics of Marine and Estuarine Environments	UM/MEES	Spring 2004	3		Coles/Boicourt 14 weeks

B. Graduate Students Supervised as Major Advisor

1. Students Currently Supervised (co-chair and lead advisor)
None.
2. Current Graduate Student Committee Memberships
Sarah Cooley University of Georgia

v. OUTREACH AND SERVICE

A. Journal Reviews

2004 Journal of Geophysical Research, Journal of Physical Oceanography, Geophysical Research Letters.

B. Public Service

2004 League of Women Voters

2004 HPL Open House

2004 Sandy Hill Elementary school

2002 Anne Arundel high school science teachers (ENSO cycles)

2001 Sandy Hill Elementary school

C. UMCES and Horn Point Laboratory

2002 UMCES convocation committee

2002 HPL Open House committee chair

2002-3 HPL Education Committee

2003 Physical Oceanography Facilitator for faculty retreat.

2004 Draft Physical Oceanography-Student recruiting website

2004 Spearheading with B. Boicourt integration of MEES 661 with METO 670 (Jim Carton)

2004 Physical Oceanography presenter for External Review committee

2004 Chair Colloquium climate initiative workgroup and co-author of strategic plan section

2004 Open House committee

2004 Education Committee

2004 Oceanography AOS student application reviewer

D. Local/National/International

2000 RIDGE 2000 workshop, Newport, OR.

2004 NASA MODIS proposal review panel

2004 Reviewer Layered Ocean Model white paper draft.

2004 MPOWIR mentoring physical oceanography women to increase retention.