

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 and estuarine climate and circulation variability

Climate forcing on regional and global scales

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*, doi:10.1029/2004JC002724.
- Coles, V. J.** and R. R. Hood (2007) Modeling the impact of iron and phosphorus limitations on nitrogen fixation in the Atlantic Ocean. *Biogeosciences* **4**, 455-479.
- Cooley, S., **V. J. Coles**, A. Subramaniam and P. Yager (2007) Seasonal variations in the Amazon plume-related atmospheric carbon sink. *Global Biogeochemical Cycles* (in press).

2. Other Peer Reviewed Publications

- Boesch, D. F., **V. J. Coles**, D. G. Kimmel, and W. D. Miller (2007), Ramifications of climate change to Chesapeake Bay hypoxia, Pew Environmental series.
- Hood, R. R., **V. J. Coles** (2008) Marine ecosystem models. *Encyclopedia of Ecology*. (in press).
- Coles, V. J.**, R. R. Hood, T. F. Gross (2008), Hydrodynamic models. *Encyclopedia of Ecology* (in press).

3. Other Non Peer Reviewed 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)

- “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))
- “Relating microbial biodiversity to biological oceanographic processes”, NSF 1/1/2006 – 12/31/2008, \$121,450 (HPL component) (With D. G. Capone, and J. D. Fuhrman)
- “Implementation of a mentoring program for junior women in physical oceanography”, NSF 5/1/2007-4/30/2010, \$129,041 (With S. Lozier (Duke)).
- “An adaptive food web model for the epipelagic and mesopelagic”, NSF subcontract through LSU, \$95,614 (with R. Hood, E. Laws (LSU), Kelvin Richards (UH))
- “Linking ASI to regional Science and solutions for Chesapeake Bay”, NOAA subcontract through ESSIC, \$35,850.

2. Submitted

- “Pacific Oxygen Minimum Zones”, NSF February 2008 (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.
- Coles, V. J. (November 2005) Climate change and nitrogen fixation driven export in the Atlantic, Duke University.
- Coles, V. J. (February 2008) Climate change and Chesapeake Bay, ODU.

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 Science s 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.
- Coles, V. J. (2005) Modeling nitrogen fixation in the Atlantic : model physics, Layered Ocean Model workshop, Miami FL.
- Coles, V. J. (2005) The influence of E-P and Amazon Inflow on western tropical North Atlantic Variability, CLIVAR Atlantic workshop, Miami, FL.
- Coles, V. J. and R. R. Hood (2005) Atmospheric dust deposition variability and Atlantic nitrogen fixation, ASLO Santiago.
- Coles, V. J. (2005) A tangled web: Deconstructing STC pathways in space and time, Venice.
- Coles, V. J. (2005) Modeling nitrogen fixation in the Atlantic: Biogeochemistry and climate, HPL.
- Coles, V. J., R. R. Hood (2006) Atmospheric dust deposition variability and Atlantic nitrogen fixation, Ocean Sciences, Honolulu.
- Coles, V. J., (2006) Passive and active tracers in HYCOM, Layered Ocean Model Meeting, Tallahassee, FL.
- Coles, V. J., C. Brown, R. R. Hood (2008) Modeling Calcification in the North Atlantic, Ocean Sciences, Orlando, FL.

3. Web sites

Coles, V. J.: HPL faculty website, <http://www.hpl.umces.edu/vcoles/>

HPL Physical Oceanography website.

USM Oceanography website, <http://ocean.umd.edu/>

Mentoring Physical Oceanography Women to Increase Retention website, <http://www.mpowir.org/>

F. Active Memberships in Professional Societies

American Geophysical Union

IV. TEACHING AND TRAINING

2002 - 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 weeks	Physics of Marine and Estuarine Environments	UM/MEES		Fall 2001	3	Coles/Boicourt 14
MEES 608K 14 weeks	<i>Climate Impacts on Estuaries and Ecosystems.</i>	UM/MEES		Fall 2002	1	Coles, Li
MEES 661 weeks	Physics of Marine and Estuarine Environments	UM/MEES		Spring 2004	3	Coles/Boicourt 14
MEES 661 weeks	Physics of Marine and Estuarine Environments	UM/MEES		Spring 2006	3	Coles/Boicourt 14
MEES 661 weeks	Physics of Marine and Estuarine Environments	UM/MEES		Spring 2008	3	Coles/Boicourt 14

B. Graduate Students Supervised as Major Advisor

1. Students Supervised (co-chair and lead advisor)
None.
2. Graduate Student Committee Memberships
Sarah Cooley, University of Georgia (Graduated)
Margaret Sexton, UMCES
Apurva Dave, Duke University

V. OUTREACH AND SERVICE

A. Journal Reviews

Journal of Geophysical Research, Journal of Physical Oceanography, Geophysical Research Letters, Biogeosciences

B. Public Service

2007 Adult Education Lecturer, Chesapeake College
2007 The Country School
2007 Open House
2006 Open House
2005 Open House
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
2005 Oceanography AOS student application reviewer
2005 Open House committee
2005 Education Committee
2005 Oceanography AOS student application reviewer
2006 Education Committee
2006 Oceanography AOS student application reviewer
2006 USM Oceanography website
2006 USM Oceanography colloquium (with R. Hood and M. Roman)
2007 HPL Seminar co-Chair

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.
2005 NASA Earth System Science Fellowship reviewer
2005 NOAA CLIVAR Review Panel
2006 MPOWIR steering committee – proposal submission – website.
2007 NASA Biogeochemistry Review Panel.
2007 MPOWIR steering committee – website.
2007 Member Science and Technical Working Group Maryland Commission on Climate Change.

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