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Center for Coastal Physical Oceanography, Old Dominion University

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# CCPO Circulation

Publication of the Center for Coastal Physical Oceanography

Spring 2012

## CCPO CELEBRATES 20 YEARS

*a retrospective by A.D. Kirwan Jr.  
former CCPO faculty member*

VOL.17, No.2

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*A.D. "Denny" Kirwan Jr.*

CCPO has been a fixture at ODU since 1991, so to many it may seem that it was there at the Big Bang. Actually, its birth was a fortuitous convergence of several seemingly unrelated events; the first, the Slover endowment to Old Dominion University. Bill Dunstan, the chairman of the Department of Oceanography, convinced the ODU administration to use these funds to expand the physical oceanography program.

The announcement of several senior positions at ODU attracted international attention and the result was that Gabe Csanady and I were the first two external faculty hires. Larry Atkinson was responsible for the recruitment. His two hiring criteria have served me well since: applicants must be leaders in physical oceanography and they must be collegial.

Gabe's decision to move from Woods Hole in 1987 was particularly serendipitous. He added considerable gravitas and an impeccable international reputation to the ODU program. He and I had known each other since the famous IUGG-TAM (International Union of Geodesists and Geophysicists and Theoretical and Applied Mechanics) 1966 Conference in Kyoto. Gabe certainly was a major factor in my decision to join the faculty. His reputation was also instrumental in attracting outstanding graduate students.

The second unforeseen event occurred in 1988 when former U.S. Senator William Spong was selected as president of ODU. For the first few weeks, President Spong met privately with outside advisors. His appointment caused considerable faculty angst and fueled rumors of major changes in the direction of the University.

One late Friday afternoon in early December, President Spong emerged from his meetings and started a whirlwind tour of the campus. This happened to be the Friday before the fall AGU meeting. When he

came to the old rug warehouse on 47<sup>th</sup> Street, the entire Department of Oceanography was working frantically on presentations for the meeting. The activity convinced President Spong that Oceanography was the most active academic unit on the campus. (continued on pg. 2)



*Gabe Csanady (center) with students, clockwise from left: G.V.R.K. Vittal, Sang-ki Lee, Ajoy Kumar and Glen Wheless*

## CCPO 20TH ANNIVERSARY *(continued from page 1)*

Earlier that fall, Larry and I made a fateful decision to hire Carole Blett (McPhillips) as an administrative assistant for our grants. This proved to be another fortuitous decision, because early in 1989 the Virginia legislature issued a call for proposals to establish centers of excellence at the state universities. Larry first picked up on this and so he, Gabe, and I responded with a proposal for CCPO, the first center in the world



*Carole Blett (McPhillips), Karal Gregory, and Julie Rea (Morgan)*

devoted primarily to coastal physical oceanography. Carole, with part-time student help from Julie Rea (Morgan) and Karal Gregory, was instrumental in putting the proposal together. Larry easily convinced President Spong to go forward with the proposal. I will always believe the chance Friday afternoon encounter was the crucial factor in President Spong's support.

Developing the proposal was one of the most intensive and rewarding periods of my life. Getting the proposal funded was another matter. After the proposal call went out, the legislature discovered a huge budget shortfall. Consequently there was little hope that any center of excellence proposal would be funded. Nevertheless, President Spong was committed. He rented a room in Richmond during the legislative session and called in every political chip he had to get CCPO funded.

This was not the end of our lucky streak. ODU now had to come up with suitable space. Larry, Gabe, and I scouted out several locations including Crittenton Hall but nothing was suitable. Crittenton was the best option but it needed major renovations and the administration was trying to sell it to real estate developers. By late spring of 1990 it looked like we had run out of options and would be stuck in the rug warehouse forever. Then, out of the blue, Larry got a call from President Spong saying that the Norfolk Foundation had agreed to underwrite the renovation for Crittenton Hall. We moved there in July of 1991. Crittenton Hall was the perfect setting for the startup phase of CCPO.



*Crittenton Hall*

At Crittenton Hall, the faculty, staff, and student population quickly grew. Beverly Mitchell was hired in the front office. Chet Grosch, a distinguished ODU faculty member with joint appointments in Oceanography and Computer Science was an original faculty member, as were John Klinck and Eileen Hofmann, who had moved earlier from Texas A&M University.



*View from Crittenton Hall*

Later, Tom Royer from the University of Alaska, Ann Gargett from the Institute of Ocean Sciences, Canada, Brian Ward from Woods Hole Oceanographic Institution, and Tal Ezer from the Geophysical Fluid Dynamics Laboratory, Princeton, also joined the CCPO faculty. The success of CCPO encouraged Lou Codispoti and Glenn Cota to relocate their well-funded research programs to CCPO as well.



*Arnolando Valle-Levinson*

The center of excellence grant allowed us to hire exceptionally talented post-docs, such as Arnolando Valle-Levinson and Jerry Miller. And all of this attracted top-notch graduate students from around the world. I realized CCPO had arrived when I noticed that by the mid-1990s, the number of CCPO presentations at Ocean Sciences exceeded those from Woods Hole.



*Glenn Cota*



*Jerry Miller*



## ROSS SEA CRUISE



*John Klinck, Pierre St-Laurent, Marco Pedulli (UMass, Dartmouth) and Suriyan Saramul*

**John Klinck, Pierre St-Laurent, and Suriyan Saramul** are traveling on a scientific research cruise aboard the R/V *Nathaniel B. Palmer*. They are working on the PRISM (Process **R**egulating **I**ron **S**upply at the **M**esoscale) project in the Ross Sea region of Antarctica. This two-month cruise is a collaborative effort with a team of over 70 researchers, support staff, and crew. Understanding sources of iron supply, especially due to features on the order of tens of kilometers (mesoscale), is the goal of the study.

An unexpected detour occurred on this trip when the ship received a distress call from a fishing vessel that was on fire, also traveling in the Ross Sea. Once the call was received, they suspended research and then headed

to the burning ship. It took about 16 hours at 13+ kt (best speed with all four engines running) to reach the site. Seven of the crew from the damaged ship had minor to serious burns. They were transferred to the R/V *Palmer* by Zodiac for treatment and transported to McMurdo Station. Air transport was available there to move these patients to better medical facilities. Once the injured parties were safely transferred to McMurdo Station, the researchers were able to get back to the task at hand, research and data collection.



*RV/Nathaniel B. Palmer in McMurdo Sound.*

### A FOND FAREWELL TO TOSCA BALLERINI



*Tosca Ballerini and Andrea Piñones, Ph.D. graduate, CCPO*

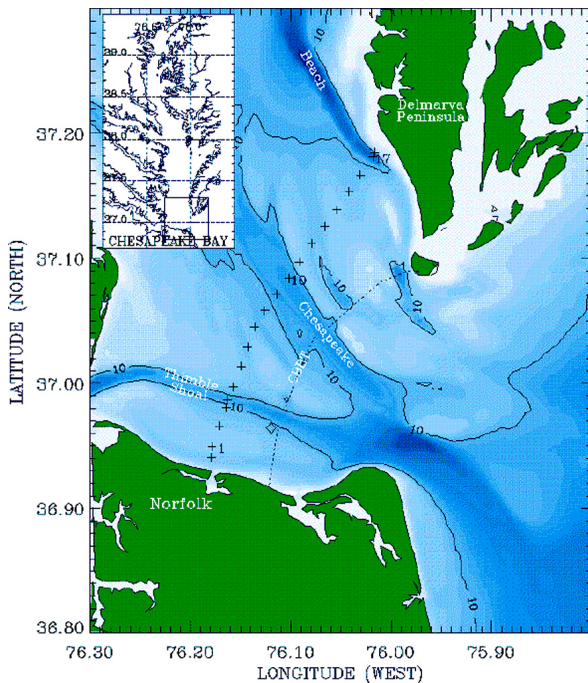
CCPO wishes postdoctoral researcher Tosca Ballerini a fond farewell as she moves on to the Oceanographic Center of Marseille, France, to work on Mediterranean food webs.

Tosca received a M.S. degree in natural sciences at the University of Florence and a Ph.D. in polar biology at the University of Siena in Italy. For her Ph.D., Tosca developed demographic models to describe the population dynamics of the Adélie penguin population of Edmonson Point, in central Ross Sea, Antarctica.

In 2008 she came to CCPO as a postdoctoral researcher with Professor Eileen Hofmann. She's worked in the synthesis phases of the US-GLOBEC program, developing mathematical models for Southern Ocean food webs. While she is happy to relocate closer to home (Italy), she is quite sad to leave CCPO and all the great people she met and worked with for three years. Tosca will continue to collaborate with her mentor, Professor Hofmann, on Southern Ocean marine food webs. Her stories, sense of humor, and spirit will be greatly missed by all at CCPO.

## CHESAPEAKE BAY MOUTH CRUISES

The Chesapeake Bay is the largest estuary in the United States, with a watershed of 166,534 km<sup>2</sup> (64,299 mi<sup>2</sup>), covering six states and the District of Columbia. To better understand the many important processes that affect the Bay's health, CCPO initiated monthly cruises across the Bay mouth in April 1992. The aim was to determine monthly and interannual variability of temperature, salinity, and stratification. As climate and human impacts change, it is important to understand what is happening, and these cruises were one way to detect these changes.



*Station location for Chesapeake Bay Mouth tracking*

The Chesapeake Bay mouth (CBM) is 25 km wide and features three main channels: The Beach channel located to the north; the Chesapeake channel; and the Thimble Shoal channel to the south. The CBM is of particular interest since these channels allow the two-way exchange of fresh water and salt water between the Bay and coastal ocean.

The maiden voyage of the first Chesapeake Bay mouth cruise was aboard the Research Vessel Linwood Holton. The R/V *Holton* was used in the monthly Bay mouth cruises until 2002. In September 2002, the newly acquired R/V *Fay Slover* took over as the survey vessel.

By analyzing the Chesapeake Bay mouth data, the changes in the inflow, outflow, heating, cooling and the salinity variations could be studied to understand the interannual changes within the Bay. These observations have led to a better understanding of future changes in the Bay with climate change as documented in several papers.

Like many time-series sampling efforts, the Chesapeake Bay mouth cruises became a challenge to maintain. The last cruise was in 2008.

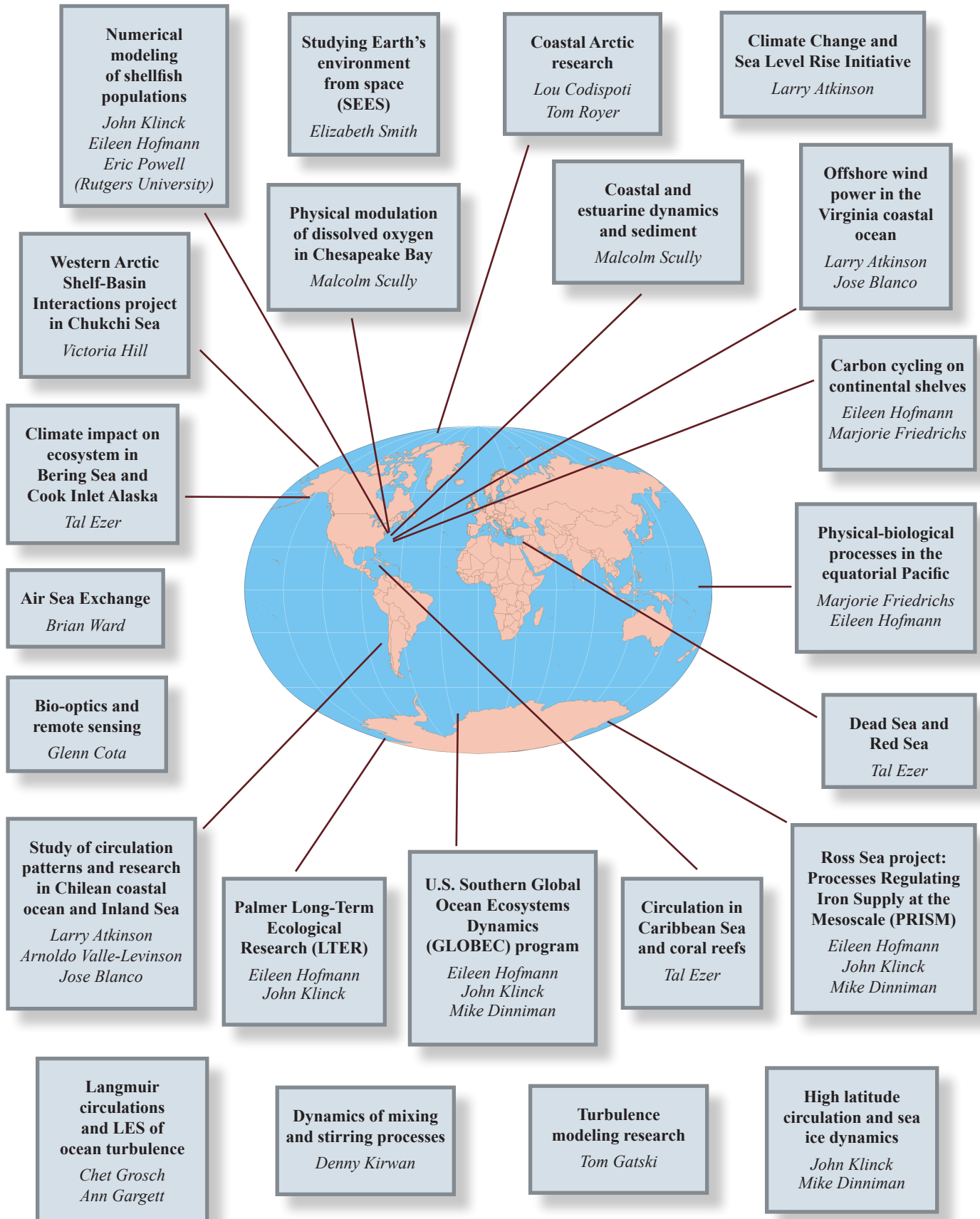
### People involved with the Chesapeake Bay mouth research cruises:

Larry Atkinson	Michelle Paraso
Jay Austin	Cristobal Reyes
Jose Blanco	Thomas Royer
Ricardo Locarnini	Samantha Sackett
Jerry Miller	Arnoldo Valle-Levinson
Michael Ott	



*CTD off the stern of the R/V Fay Slover*

# MAP OF CCPO PROJECTS 1991-PRESENT





**Appointments/Awards**

**Ballerini, T.**, APECS Council Representative, SOOS (Southern Ocean Observing System), Scientific Steering Committee.

**Graduates**

**Piñones, Andrea**, Ph.D. Defense: Circulation on the Western Antarctic Peninsula: Implications for Biological Production, December 2011, Advisor: E.E. Hofmann.

**Publications**

- Chapman, E.W., W.R. Fraser, **E.E. Hofmann**, C.A. Ribic, and D. Patterson, Climate associated factors affecting Adélie penguin (*Pygoscelis adeliae*) chick growth and recruitment off the Western Antarctic Peninsula, *Marine Ecology Progress Series*, 436: 273-289, 2011.
- Ezer, T.**, L.Y. Oey, H. Xue, and X. H. Wang (Editors), Topical Collection: 2nd International Workshop on Modeling the Ocean, May 24-26, 2010, Norfolk, VA, Special Issue of *Ocean Dynamics*, Springer-Verlag, Berlin, 222, 2011.
- Ezer, T.**, W. D. Heyman, C. Houser, and B. Kjerfve, Modeling and observations of high-frequency flow variability and internal waves at a Caribbean reef spawning aggregation site, *Ocean Dynamics*, doi:10.1007/s10236-010-0367-2, 61(5), 581-598, 2011.
- Piñones, A.**, **E.E. Hofmann**, **M.S. Dinniman**, and **J.M. Klinck**, Lagrangian simulation of transport pathways and residence times along the Western Antarctic Peninsula, *Deep-Sea Research II*, 58, 1524-1539, 2011.
- St-Laurent, P.**, F. Straneo, and D.G. Barber, A conceptual model of an Arctic Sea, *Journal of Geophysical Research*, 2011, submitted.
- Wiebe, P.H., C. Ashjian, G. L. Lawson, **A. Piñones**, and N. Copley, Horizontal and vertical distribution of euphausiid species on the Western Antarctic Peninsula Southern Ocean GLOBEC study site, *Deep-Sea Research II*, 58, 1630-1652, 2011.

**Presentations**

- Akan, C., A.E. Tejada-Martinez, and **C.E. Grosch**, LES of scalar transport in wave and wind-driven flows with large-scale structures, American Physical Society, Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011.
- Asper, V., W. Smith, C. Lee, K. Heywood, **M. Dinniman**, B. Queste, and J. Gobat, Using gliders to study a phytoplankton bloom in the Ross Sea, Antarctica, MTS/IEEE Oceans' 11, Kona, HI, September 19-22, 2011.
- Hofmann, E.E.**, US GLOBEC: Before and After, invited presentation, US GLOBEC Final Symposium, Washington, DC, October 4-5, 2011.
- Hofmann, E.E.**, Understanding Disease Resistance in Estuarine Oyster Populations and Response to Climate Change, Seminar presentation, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh, NC, October 10, 2011.
- Martinat, G.**, A.E. Tejada-Martinez, and **C.E. Grosch**, Influence of a crossed tidal current on wind shear driven flow in shallow water with and without wave forcing by means of LES, American Physical Society, Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011.
- Piñones, A.**, Circulation on the Western Antarctic Peninsula: Implications for Biological Production, Invited Seminar, Atmosphere/Ocean/Climate Dynamics Seminar Series, Department of Geology and Geophysics, Yale University, New Haven, CT, November 10, 2011.
- Sinha, N., A.E. Tejada-Martinez, **C.E. Grosch**, and **G. Martinat**, Disruption of bottom log-layer in LES of Langmuir circulation in shallow seas, American Physical Society, Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011.
- Tejada-Martinez, A.E., **G. Martinat**, R. Walker, and **C.E. Grosch**, Large-eddy simulation of large-scale convection cells in unstably stratified open channel flow, American Physical Society, Division of Fluid Dynamics, Baltimore, MD, November 20-22, 2011.
- Tuleya, R.E.**, Issues in Transitioning HWRF Upgrades into Operations at EMC, 65th Interdepartmental Hurricane Conference, Miami, FL, March 1, 2011.
- Tuleya, R.E.**, The Development of HWRF: The National Weather Service's Operational Hurricane Regional Forecast System, CCPO Spring 2011 Seminar Series, Norfolk, VA, March 21, 2011.

NEWS BRIEFS

**Antarctica Day, December 1, 2011:** This young tradition, inaugurated in 2010, celebrates the signature of the Antarctic Treaty on December 1, 1959 and the worldwide significance of this landmark agreement ([www.apecs.is/antarctica-day](http://www.apecs.is/antarctica-day)). This year, the Association of Polar Early Career Scientists (APECS), the International Arctic Science Committee (IASC) and the Scientific Committee on Antarctic Research (SCAR) contributed to the celebrations with an Antarctica Day webinar. The online session addressed both the Antarctic and Arctic science community and reflected on the past, present and future of polar science.



Tosca Ballerini, CCPO, spoke on “Southern Ocean marine food webs: engaging early carrier scientists in an international collaborative modeling community.” Antarctica Day was initiated by the Foundation for the Good Governance of International Spaces as an annual event to build global awareness of this important institution and celebrate this milestone of peace in our civilization with hope and inspiration for future generations. The Antarctic Treaty was adopted “with the interests of science and the progress of all mankind” so that today there is a variety of activities around Antarctica Day such as the Virtual “Peace” Balloon Launch, classroom activities, life events, and much more.



**APECS Council Co-chair:** Tosca Ballerini was asked to serve as APECS Council co-chair, 2011/2012. APECS (Association of Polar Early Career Scientists) is an international and interdisciplinary organization for undergraduate and graduate students, postdoctoral researchers, early faculty members, educators and others with interests in polar regions and the wider cryosphere. The goals of the APECS are to stimulate interdisciplinary and international research collaborations, and develop effective future leaders in polar research, education and outreach. APECS was developed in concert with the 4<sup>th</sup> International Polar Year (IPY 2007-2008) and has been recognized by the IPY sponsors, the International Council of Science

(ICSU) and the World Meteorological Organization (WMO), as the organization that, together with other partners (e.g., IASC and SCAR), will carry forward the momentum of polar research, education and outreach in the years to come (ICSU & WMO 2010). APECS provides opportunities for early career scientists to gain additional skills needed for successful careers through diverse activities including: panel discussions; career development workshops; online seminars; Virtual Poster sessions; job listing and travel support to meetings. For more info visit: <http://www.apecs.is>

# CCPO

*Celebrating 20 years of  
promoting research on the physical  
oceanography of the coastal ocean.*



# Center for Coastal Physical Oceanography

## Spring 2012 Seminar Series

During the academic year, CCPO invites distinguished scientists to present seminars, which take place in Room 3200, Innovation Research Building 1, Old Dominion University. Lectures begin at 3:30 p.m., with a reception prior at 3 p.m. Eileen Hofmann, professor of oceanography, coordinates the seminar series. Specific topics are announced one week prior to each seminar; abstracts can be found at [www.ccpo.odu.edu/seminars\\_spring2012.html](http://www.ccpo.odu.edu/seminars_spring2012.html).

### DATE

January 23

January 30

February 6

February 13

February 27

March 12

March 19

March 26

April 2

April 9

### SPEAKERS

Andrew Larkin, NOAA Chesapeake Bay Office

Katherine Filippino, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University

Jerry Miller, Office of Science and Technology Policy

Jian Shen, Virginia Institute of Marine Science

Jeff Shields, Virginia Institute of Marine Science

Emanuele Di Lorenzo, Georgia Institute of Technology

Josh Kohut, Rutgers University

Arnoldo Valle-Levinson, University of Florida

Dana Savidge, Skidaway Institute of Oceanography

Eileen Hofmann, CCPO

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