

VIMS Industry Partnership Meeting Notes – February 29, 2008
Director's Conference Room, Watermen's Hall, VIMS, 10 a.m. until noon

Present

VIMS: John Wells (Dean and Director), John Brubaker (Physical Sciences), David Forrest (Physical Sciences), Carl Hershner (Center for Coastal Resources Management), Jane Lopez (Sponsored Programs), Mark Patterson (Biological Sciences), Mike Unger (Environmental and Aquatic Animal Health), Lyle Varnell (Advisory Services), Harry Wang (Physical Sciences – Modeling).

W&M Main Campus: Bill Bean (Technology and Business Center), Tina Bunai (Applied Research Center), Jim Golden (Economic Development), Leonard Sledge (Economic Development).

Industry: Gregory Stringfield (A.G. Edwards & Sons), Jay Diedzic (Blackrock Energy), Susan Patterson (Fern Group), Paul Panetta (Luna Innovations), Howard Spiegel (MesoScale Discovery), Dave Marsell (Pressure Systems), Neil Rondorf (SAIC), Greg Hodges (SAIC/ODU), Tucker Pierce (Tellus Applied Science), Eric Weisel (Werner Anderson).

Government/other: Alleyn Harned (Assistant Secretary of Commerce and Trade), Warren Deal (Gloucester County EDA), Doug Meredith (Gloucester County), Lee Beach (Hampton Roads Research Partnership), Mike McGinnis (VMASC).

Note

The VIMS-Industry Partnership website, including notes and some presentations, is at: <http://www.wm.edu/economicdevelopment/VIMS-Industry%20Partnership.php>

Discussion

1. Funding Initiatives (John Wells)
 - a. John reviewed the status of VIMS projects being considered by the General Assembly Conference Committee on the Budget. These include a project for the Eastern Shore Laboratory at Wachapreague, a beach erosion and beautification project at VIMS, and a consolidated science research building. John asked business representatives to contact members of the conference committee by March 4 in support of the projects. (Jim Golden sent out an e-mail after the meeting with that request. Thanks to those of you who contacted committee members.)
 - b. The projects are as follows:

- i. Replace Eastern Shore Sea Water Laboratory -- \$4,239,000 (Virginia College Bond Authority – House Version). Supports construction of a new laboratory building with running sea water for research on coastal marine ecology and aquaculture in a high salinity environment. Currently, the research is conducted in former oyster shucking houses from the late 1800s. The Eastern Shore Lab is used by many VIMS and visiting researchers.
- ii. Control Shoreline Erosion -- \$1,200,000 (Virginia College Bond Authority – House Version). Supports erosion control of the entire shoreline of the Gloucester Point campus. The project includes the construction of eleven new stone breakwaters, the extension of several pipe outfalls further into the York River, replenishment of sand along the entire shoreline, creation of small dunes along the west shoreline, and planting of riparian vegetation on the east shoreline.
- iii. Consolidated Scientific Research Building -- \$7,203,000 (Virginia College Bond Authority – Senate version). Provides research, study, and technology space for Marine Advisory Services, the Center for Coastal Resources, and the publication and computer centers in a single facility. These programs are currently housed in inadequate single family dwellings, temporary modular buildings, and un-renovated office space throughout the campus.

2. Inundation Modeling and Emergency Planning for the Elderly (Harry Wang)

- a. Harry reviewed VIMS work in the development of unstructured, high-resolution, hydrodynamic models.
- b. The high resolution they are achieving has permitted analysis of more detailed phenomena such as eddies. He cited independent evidence substantiating the existence of eddies predicted by the models.
- c. He noted that the model had performed well in simulating wave heights in two very different storms – Isabel and Floyd. The model also provided accurate simulations of the extent and location of inundation in Alexandria, demonstrating the model’s value in estuaries as well as in the open bay.
- d. Harry and his team have now been able to extend their grid for the southern part of the Bay onto the land in Hampton Roads. They have used LIDAR elevation data, but they are looking for even better elevation data.
- e. Harry showed an animation of simulated hurricane inundation in Hampton Roads during Hurricane Isabel. Anecdotal evidence suggests that the model worked well, except in the area of the Virginia Beach seawall, where the wall blocked the inundation that could have occurred. The model will be adjusted for that.
- f. Lou Rossiter has been working with Harry and others to apply the inundation models to assist in decision making by long-term facilities managers.

- g. Bill Bean reported that the Rossiter/Wang \$125K grant proposal to HRPDC (Hampton Roads Planning District Commission) for a study of storm flood-surge vs. nursing home/assisted living evacuation needs has been accepted and has been incorporated into HRPDC's project requests that will be forwarded soon to DHS for approval. It was received with overwhelming enthusiasm by all members of the HRPDC emergency planning committee.
 - h. Bill Bean noted that Rossiter/Wang have also collaborated on a \$600K proposal to NIH for storm surge – health services response to the needs of nursing homes, the elderly and infirm, assisted living, and others.
 - i. Bill also met Michael Kline, the VDEM (Virginia Department of Emergency Management) State Coordinator, at an OCP (Office of Commonwealth Preparedness) meeting on Thursday, 28 February. Bill explained a bit about H. Wang's storm surge model and its capability. Kline became extremely interested in it and, with Stuart Baker, the state's hurricane coordinator, wants to meet with us for a presentation ASAP.
 - j. Jim Golden noted that VIMS, W&M main campus and the Virginia Modeling Analysis and Simulation Center (VMASC) were developing a strong partnership. Mike McGinnis, Executive Director of VMASC, reinforced that and noted that the collaboration was building on initial efforts to compete for the Department of Homeland Security Natural Disasters Center. That effort was unsuccessful, but we continue to explore alternative funding areas. VMASC has been active in critical infrastructure modeling including a project with UVA and Virginia Tech. Mike suggested that the inundation modeling might be applied to other vulnerable populations and infrastructure in addition to long-term care facilities. He suggested exploring funding possibilities in the areas of impacts on inundation on pregnant women, vulnerable children and Dominion power distribution.
3. Wind Power Initiatives (Neil Rondorf, SAIC)
- a. Neil reviewed the status of funding for VCERC (Virginia Coastal Energy Research Consortium) in the General Assembly.
 - b. He has been doing considerable research on offshore wind farms. More work is needed on the economics of the wind farms, the development of a GIS database of actual (versus hypothetical) issues, and an economic impact analysis.
 - c. Foreign investors have shown interest in the wind farm market in the Northeast U.S.
 - d. He has been working with various environmental groups to identify potential impacts. He is interested in making contact with the fishing industry to get their views.
 - e. He and his colleagues have results from 200 individuals who have taken their survey, and the results are running strongly in support of the wind farm initiative.
4. Chesapeake Bay Interpretive Buoy System Expansion Plans (Tucker Pierce, Tellus Applied Science)

- a. Tucker showed a map with the three existing buoys (Jamestown Point, Point Lookout, Patapsco) and three additional buoys to be deployed this fiscal year (Harvre de Grace, Stingray Point, Norfolk/Portsmouth). The buoy in the Elizabeth River will be operated by Nauticus.
 - b. The existing buoys have sensors for meteorology, waves, and water quality. They are adding sensors for currents and GPS. John Brubaker provided some comments about the currents sensors.
 - c. If funding is available, there are plans for placing 14 more buoys, bringing the total to 20. Tucker thought VIMS might have suggestions about the placement of future buoys. For example, the buoys could be useful to Harry Wang and his group in helping with model validation.
 - d. CBOS in conjunction with NOAA plans workshops for the fall of 2008 and the summer of 2009 to promote new sensors for Chesapeake Bay monitoring. Bill Bean noted that Doug Wilson of NOAA is facilitating the conferences has asked us to help him with it. This is an outgrowth of his involvement with our SS&TF seminar last June and the recent Sensors World Conference.
 - e. Tucker described an incident with a runaway buoy in the Potomac in early February. Fortunately the sensors continued to function, so they were able to track it down through the GPS output.
 - f. Tucker emphasized the need for easy access to data through the NOAA web services framework. He noted that letters of support for additional funding would be welcome. If you are interested, please contact Tucker at pierce@tellusappliedsciences.com.
5. Follow Up from December Meeting
- a. Discussions with Alion. Ben Francisco met with folks on main campus to review potential collaborations. Bill Bean is arranging a visit for him at VIMS to do the same thing there.
 - b. Biodiesel discussions. Jay Diedzic report that he and Tina Bunai have looked into the possibilities at Craney Island with the Corps of Engineers, but the land there is probably not stable enough to support a biodiesel operation. They have worked with Pat Hatcher to explore other sites. They are looking into funding sources, including DARPA.
 - c. Seawater Research Lab. Paul Panetta, Luna Innovations, reported that he has submitted a BAA proposal to ONR for \$1.5M over 3 years to study the flow of various bio-particulates. He has included Carl Friedrichs for sediment study and Jim Brister for the sea water test facility in the grant request. Paul reported that he continues to find others at VIMS with relevant research skills and interest.
6. General Discussion
- a. Bill Bean gave an update on the following:
 - i. Luna Hampton Roads. Bill and Joe Heyman met with W. Reay and J. Brubaker about an aquifer measurement technology that Luna HR has been working on. The technology supports projects of interest to VIMS and so they are searching for approximately

- \$125K. J. Heyman has presented the idea to the Army Corps of Engineers, who may be able to support the project.
- ii. Oceana Sensor has submitted a SBIR with S. Kaattarri and H. Kator for an effluent measure project.
 - iii. Via CIT, M. Patterson was put in touch with Lockheed Martin, which is interested in an artificial fish project. Mark described some of the fish characteristics they are interest in.
 - iv. The Virginia Economic Development Association is holding their annual meeting in Williamsburg. A contingent of 24 or so will visit VIMS on 13 March for a presentation and tour of the Seawater Test Facility. Dave Malmquist is coordinating the visit.
- b. Jim Golden introduced Howard Spiegel, MesoScale Discovery, who was attending his first VIMS-Industry meeting. Howard had met earlier in the day with Mike Unger and toured his laboratory. Howard noted that MesoScale has done work in cancer biology, infectious diseases, and biodefense. He will continue discussions with Mike and his colleagues.
7. Closing Comments. John Wells thanked the participants for exceptionally productive discussions, and he thanked Jim Golden for facilitating the meetings. John adjourned the meeting at noon.