

## VIMS Industry Partnership Meeting Notes – July 20, 2007

Director's Conference Room, Watermen's Hall, VIMS, 10 a.m. until noon

### Present:

VIMS: John Wells (Dean and Director), Grace Cartwright (Physical Sciences), David Forrest (Physical Sciences), Courtney Harris (Physical Sciences), Carl Hershner (Center for Coastal Resources Management), Steve Kaattari (Environment and Aquatic Animal Health), Jane Lopez (Sponsored Programs), Ann Marshall (Development), Mark Patterson (Biological Sciences), Mike Unger (Environment and Aquatic Animal Health).

W&M Main Campus: Bill Bean (Technology and Business Center), Jim Golden (Economic Development), Jason McDevitt (Technology Transfer), Leonard Sledge (Economic Development), John van Rosendale (Computational Science).

Industry: Jay Diedzic (Blackrock Energy Corporation), Tony Rennier (Blacksmith), Mark Huggard (Luna Innovation), Susan Patterson (Fern Group), Maciek Sasinowski (INCOGEN), Rex Pelto (Innovative Wireless Technology), Marty Wilcox (Marine Sonic Technology), Dave Marsell (Pressure Systems), Sean Brasch (SAIC), Tucker Pierce (Tellus Applied Science), Scott Stewart (Tellus Applied Science), Gregory Springfield, John Boon (World Tide and Currents)

Government/Education/Non-Profit: David Smith (Deputy Secretary of Commerce and Trade), Doug Meredith (Gloucester Economic Development), Lee Beach (Hampton Roads Research Partnership), Doug Dwoyer (Hampton Roads Research Partnership)

1. Welcome and Introductions (Jim Golden, John Wells)
2. Status of Funding Initiatives (John Wells)
  - Chesapeake Bay Cleanup Initiative. VIMS has a \$1.45 million contract with the Department of Environmental Quality that runs through June of 2008. Continued funding is important. The state fiscal situation appears to be tight for the coming two years.
  - VCERC. The Virginia Coastal Energy Research Consortium (<http://www.vcerc.org/>) has been given \$1.5 million in funding by the state to pursue two areas – conversion of algae into biodiesel and offshore wind power. VIMS will be working on 1) assessing and culturing algae for biodiesel production, and 2) creation of a digital database of bio-resources to serve as a baseline for future environmental assessments that will be required

should wind turbines be constructed. The group discussed the potential for surveys of the ocean floor and potential contacts with the National Petroleum Council.

- Federal initiatives. Some of these are requests for continued funding in areas that have been supported in the past, such as the VIMS trawl survey and oyster restoration. VIMS has a proposal in conjunction with Wm and Mary for the modeling of storm surge with a wave component under review in Washington.

### 3. Data Management, Visualization and Integration – Overview of ongoing work

- Marine Sonic Technology (<http://www.marinesonic.com>)– Mark Patterson introduced Marty Wilcox, the founder and CEO of Marine Sonic, who has been a pioneer in the application of ultrasound in medical and marine areas. The company offers a range of sonar systems and related equipment, including a portable side-scan sonar, a splash proof computer, AUV/ROV sonar systems, and a variety of custom systems including one that can operate in the deepest areas of the ocean. One application has been in hull inspection, identifying areas on ships that warrant closer inspection by AUVs. They have now introduced a Sharps II underwater positioning system with high accuracy levels. In discussion, Marty explained the trade-offs between range and resolution depending on the frequency used.
- Tellus Applied Sciences (<http://tellusappliedsciences.com>) – Tucker Pierce provided an update to the presentation he gave last fall concerning the CBIBS data acquisition, storage, and product delivery system and plans for the NOAA funded placement of buoys in support of the Captain John Smith Trail. Two buoys have been deployed off Jamestown and Point Lookout, and one more will go in soon in the northern Chesapeake. Three more may be deployed over the next six months. The sensors on the buoys provide met, wave, and water quality data. Keeping the water quality sensors clean has been a challenge, but the dissolved oxygen sensors are self-cleaning and are working well. Tucker and Scott Stewart discussed some of the lessons learned so far, including the importance of remote access to the data loggers and the requirement to balance the communications data rate versus network coverage. They stressed the need for including system support in data logger firmware contracts in order to adjust to firmware updates, and the need for remote read and write capabilities to simplify adjustments. They have had to adjust communication data rates in some places because of unexpected changes in tower signal strengths. The system has been averaging 15 phone calls a day to the buoy system, with a peak of 200 a day, depending on surges in publicity. The group felt that usage would expand as the school systems discovered the potential for accessing the data.
- INCOGEN (<http://www.incogen.com>) -- Maciek Sasinowski explained how one of the company's data management platforms, GENEPOR, which was

designed for applications in bioinformatics, could easily be applied in other domains. The system they developed for VIMS has an internal site to manage deployed buoys and an external site for public access to the data. He demonstrated the use of the public system at <http://chsd.vims.edu/realtime> , and showed how users can click on a buoy image to access the latest data at that site. Their adjustments of the software for use with ocean observing data took about six months, primarily because of the need to learn the new domain.

- Innovative Wireless Technology – Rex Pelto discussed the company’s capabilities in the management of mesh networks. Some of the industry standards do not scale to a large number of nodes, but their technology has been very effective in managing large networks. He showed the group some of the sensors that are in use in their utility management networks. They are able to map locations in which electric power levels are weak or have failed. Similar sensors are being deployed on VIMS buoys to monitor performance. Grace Cartwright from the Physical Sciences Department at VIMS explained the use of the sensors on the buoys.
- Webware Software Pros – Tony Rennie explained the goals and capabilities of his start-up company that is now located at the James City County Technology Incubator. The company’s major project is a data visualization engine that permits rapid charting of data found on a website. To illustrate the system, Tony demonstrated the development of charts from data on the VIMS website for Byrd Hall. (The company recently changed its name from Blacksmith – <http://www.blacksmith.com> .)

#### 4. General Discussion

- Connectivity to Main Campus – We deferred John van Rosendale’s discussion of this topic to the next meeting.
- VCERC – Sean Brasch, an intern with SAIC, attended the meeting to address any questions about VCERC. We plan to discuss VCERC in more detail at the next meeting.
- Hampton Roads Research Partnership <http://www.hamptonroadsrp.org/index.html> -- Doug Dwoyer discussed the Partnership’s focus on the sensors cluster (led by William and Mary – Bill Bean), the modeling and simulation cluster (led by VMASC – Mike McGinnis), and a new biosciences cluster (led by EVMS – Bill Wasilenko). Each cluster attempts to link industry with research underway in all of the HRRP partner organizations. The cluster work is supported by funding from the Department of Commerce. Doug hoped that VIMS would become an active participant in the biosciences cluster. He will discuss the cluster in more detail at a future VIMS-Industry Partnership meeting.
- Budget -- Deputy Secretary of Commerce David Smith noted that this would be a tight fiscal year and that VIMS should get any requests in early. The group discussed the importance of the Chesapeake Bay monitoring work.

5. Closing Comments. John Wells adjourned the meeting at noon.
  
6. Next Meeting: The next meeting will be held on October 5, 10 a.m. until noon, in the Director's Conference Room in Watermen's Hall. The tentative agenda includes VIMS-Main Campus broadband and data management connectivity (John van Rosendale), VCERC (Neil Rondorf), more details on the HRRP regional biosciences cluster (Lee Beach and Doug Dwayer), discussion of a water level observing VIMS is deploying on the north shore of the James River near Historic Jamestowne (John Boon, John Brubaker), and other topics participants may propose.