

**VIMS Industry Partnership Meeting Notes – December 14, 2007**  
**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 Friedrichs (Physical Sciences), Marjorie Friedrichs (Biological Sciences), Courtney Harris (Physical Sciences), Jane Lopez (Sponsored Programs), Ann Marshall (Development), Lyle Varnell (Advisory Services).

W&M Main Campus: Bill Bean (Technology and Business Center), Tina Bunai (Applied Research Center), Jim Golden (Economic Development), Dennis Manos (Vice Provost), John van Rosendale (Computational Science), Gene Tracy (Physics).

Industry: Ben Francisco (Alion Science), John Kolbeck (Alion Science), Jay Diedzic (Blackrock Energy), Greg Hodges (SAIC/ODU/VCERC), Maciek Sasinowski (INCOGEN), Paul Panetta (Luna Innovations), Eric Weisel (Werner Anderson).

Government/other: Alleyn Harned (Assistant Secretary of Commerce and Trade), Bobby Crewe (Gloucester County Board of Supervisors), Warren Deal (Gloucester County EDA), Lee Beach (Hampton Roads Research Partnership), Jim Schultz (HRRP), Pat Hatcher (ODU/VCERC), Aron Stubbins (ODU/VCERC).

**Note**

Thanks to Leonard Sledge, we now have a web page for the VIMS-Industry Partnership:  
<http://www.wm.edu/economicdevelopment/VIMS-Industry%20Partnership.php>

We will be posting minutes and some presentations on the site.

If you have any recommendations for changes or additions to the site, please contact Leonard at [lsledge@wm.edu](mailto:lsledge@wm.edu).

**Discussion**

1. Funding Initiatives
  - a. Commonwealth Research Initiative (CRI) – Overview and bio-imaging – Dennis Manos.
    - i. Last year the Governor's Commonwealth Research Initiative (CRI) included a small amount of money for bio-imaging research at W&M.

- ii. This year the Virginia Research and Technology Council (VRTAC) white paper on research highlighted lifespan biology, microelectronic, and energy, and recommended funding for VRTAC and continuation of the CRI in the next biennium.
  - iii. W&M put in a request for continuation of the bio-imaging funding and a piece for modeling and simulation in collaboration with ODU/VMASC and the Hampton Roads Partnership.
  - iv. Dennis briefly covered a number of projects at W&M in the general area of bio-imaging.
  - v. He noted that the paper said the Governor's budget may fund \$45 million for VRTAC. Funding for the CRI is not yet clear.
- b. CRI and Regional Modeling and Simulation Request -- John Van Rosendale
  - i. The PowerPoint slides for this presentation have been posted on the website (See Note above).
  - ii. Although immediate state funding may be unlikely in the current fiscal climate, our submissions attempt to lay a foundation for future funding.
  - iii. Modeling and simulation is having an expanding business impact in the region, and there are important application areas including port expansion and the vulnerability of the region to hurricane and terrorist threats.
  - iv. M&S expertise at W&M includes the human side of military simulation, traffic and supply chain modeling, hurricane probabilities and storm surge, and highly non-linear processes such as rogue waves.
  - v. In particular, there is an evolving collaboration between main campus and VIMS concerning wave-kinetic models that include nonlinear effects, better treatment of the passage of waves from deep to shallow water, the effects of bottom topography and obstacles on surface waves, and nonlinear wind-wave forcing.

2. Campus Broadband and Data Management Connectivity (John Van Rosendale)

- a. The PowerPoint slides for this presentation have been posted on the website (See Note above).
- b. The network connection between VIMS and main campus has been dramatically improved through the lease of a gigabit Ethernet line in the new buried fiber cable Verizon buried under the York River earlier this year.
- c. Benefits of the new connectivity include televideo seminars and tele-taught courses between VIMS and main campus (numerical methods, biology, computer graphics, etc.)
- d. The SciClone computational science cluster on main campus includes a new 72-node dual Opteron, dual-core cluster.
- e. SciClone, the College's open HPC cluster, now has a peak performance of 2 terraflops.

- f. Part of the cost of the upgrade was paid for by Professor Harry Wang and the physical oceanography group at VIMS. With UPS and generator backup, storm surge and run-off simulation can now be done while hurricanes and Nor'easters are in progress.
  - g. SciClone, which is moving to a larger space in Jones Hall, is open to all researchers associated with William and Mary.
3. Virginia Coastal Energy Research Consortium (VCERC) structure and marine biomass research – Patrick Hatcher (Batten Endowed Chair in Physical Sciences and director of ODU's College of Sciences Major Instrument Cluster [COSMIC] laboratory), and Aron Stubbins (Assistant Director)
- a. VCERC's website is at <http://www.vcerc.org/> .
  - b. VCERC was created “to serve as an interdisciplinary study, research, and information resource for the Commonwealth on coastal energy issues” with an initial focus on offshore winds, waves, and marine biomass.
  - c. VCERC partners are 8 Virginia universities (including W&M/VIMS), 5 government organizations and 3 industrial partners (including VIMS-Industry member SAIC).
  - d. VIMS roles are to assist ODU with biodiesel research, to assist with offshore mapping and resource location, and to provide supporting environmental detail and knowledge for the offshore seafood industry. VIMS was initially slated to receive \$75K in FY08, but that was reduced to \$67K by this year's budget cuts. VIMS would receive \$833K in FY09 and FY10 if the budget request were fully funded.
  - e. Research underway by Pat Hatcher's team at ODU is described at: <http://www.odu.edu/ao/research2/vcerc/research/biodieselmembers.shtml> .
  - f. ODU is exploring the potential oil content and growth patterns of various microalgae species. Production requires large areas of land (but not agricultural land), shallow ponds, and nutrient sources (e.g., waste treatment plants). There could be advantages in pumping algae out of Virginia waterways and making them cleaner.
  - g. ODU's strategy is to design bench-scale and pilot-scale facilities, test fuel efficiency, and then scale up with appropriate partner support.
  - h. One key step is to get lipids (biological molecules that are insoluble in aqueous solutions and soluble in organic solvents) out of the biomass. Professor Liz Canuel at VIMS is an expert at lipid analysis. She will also provide ODU analytical support for computing biodiesel yields from various algae fed with different nutrients.
  - i. VIMS will also support the wind research by helping create a digital database in support of the GIS work at James Madison University.
  - j. At the end of the morning, participants in the meeting completed a survey concerning attitudes about alternative energy sources in support of VCERC research.

4. Alion Science and Technology – Overview and potential links with VIMS -- Ben Francisco, Vice President, DSG Business Development, and John Kolbeck, Senior Scientist, Corporate Development
  - a. Alion's website is at: <http://www.alionscience.com/>
  - b. Alion is an employee-owned technology solutions company based in McLean, VA. It has about 3,500 employee-owners.
  - c. There are over 1,400 employees in VA, with offices in McLean, Alexandria, Arlington, Fairfax, Newport News and Norfolk. Ben is in the Newport News office in the City Center.
  - d. The company has over 30 laboratory facilities with about 120,000 SF of space. They are distributed around the country in the areas of modeling and simulation, electromagnetics, chemical/biological/environmental testing, information technology, acoustics, materials and manufacturing, sensors, fluid sciences, and ship design. About 2/3 of the employees hold degrees in computers, engineering or science.
  - e. The company's core business areas are in naval architecture, defense operations, systems engineering, modeling and simulation, information management and technology, chemical-biological-nuclear-environmental sciences, wireless spectrum engineering and industrial technology.
  - f. Potential links with VIMS research include modeling and simulation (ocean modeling), port security (AUVs), and sensors (Kaattari-Unger et al.).
  - g. The next step will be to continue discussions facilitated by Bill Bean.
  
5. The meeting ended with an optional tour of the new seawater facility led by Jim Brister, Seawater Research Lab Director.
  - a. The Seawater Research Lab provides treated seawater for a variety of research projects set up in rooms of various sizes and bio-safety levels, including one level-3 area. Compartmented drains capture effluent from the experiments for appropriate treatment or disposition.
  - b. The facility, which is essentially ready to open pending final inspections, will be available to VIMS researchers and VIMS partners.
  - c. Paul Panetta, Luna Innovations, reported that after his initial tour of the facility a week earlier he and Jim Brister were collaborating in a funding request to ONR for experiments in the lab.
  - d. Jim said he would have a website up describing the lab and its capabilities as soon as the final punch list for the facility is completed and the lab is available for use.