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## 1. INTRODUCTION

The State University of New York (SUNY) College at Old Westbury was chartered in 1965 and is the only public comprehensive liberal arts college on Long Island. Old Westbury was originally envisioned as an experimental institution, innovative in curricula, procedures and academic policies. Later, the institution added to its mission the goal of educating a diverse, multicultural student population through a curriculum that addressed fundamental issues in American society. The initial curriculum was entirely interdisciplinary in structure and remains largely so today. Current enrollment is approximately 3,340 students, largely from local Long Island communities and the metropolitan New York area. Over 50% of its students are racial or ethnic minorities, approximately 60% are female, and many are the first in their families to attend college. Old Westbury is the model of ethnic, gender, and cultural diversity within the SUNY system.

Old Westbury is located on Long Island, which is in the southeastern portion of New York State. This geographic area encompasses over 1300 square miles and has a population of over 7.5 million. Its four counties (Kings, Queens, Nassau, and Suffolk) are highly diverse racially, socially, and economically. The island's southern coastline extends for nearly 150 miles along the Atlantic Ocean, and its northern coastline forms a boundary for the Long Island Sound. Given the proximity of oceanic and estuarine environments, Online Ocean Studies should provide the opportunity to introduce general scientific concepts with immediate and obvious relevance for students.

## 2. GENERAL EDUCATION

The General Education program at Old Westbury requires that all students take at least one laboratory science; those majoring in Elementary Education must take two lab sciences. For many students, this has proven to be a difficult requirement. Two problems predominate: 1) many hate the very thought of science and get a brain freeze at the word; and 2) many have a great deal of difficulty accommodating the time requirement. The two core non-major courses in our department are Chemistry for Non-majors and Physical Science. Students seem to equate chemistry with such things as plagues and pestilence; while we have tried various alternative names (e.g., Chemistry for Consumers), students have not been fooled. Thus we

have always had better enrollment in Physical Science. These trends can be seen in Figure 1. (The spike in Fall 2005 represents 2 sections.) Enrollments in Chemistry for Non-majors is requirement driven, but still students have a tendency to avoid it or to withdraw. In 2004 we learned of the AMS' online programs and diversity initiative. Weather Studies, it was our hope, would be softer sounding and therefore less intimidating. Further, it would have direct applicability to the students' world, a case that was harder to make when teaching electron configurations.

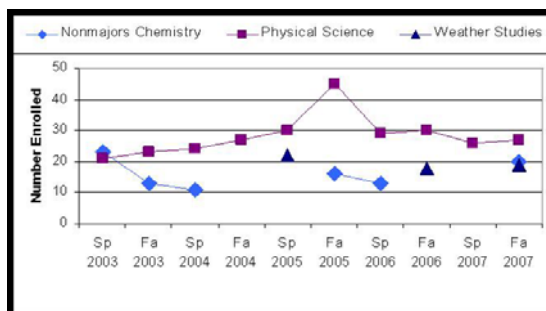


Figure 1. Enrollments in academic year general education lab science courses.

The second major problem for many students was scheduling a lab science. A typical course at Old Westbury is 4 credits and meets for just under 4 hours per week. A lab course consists of a 3 credit lecture, meeting 4 hours per week, and a 1 credit lab, meeting another 3-4 hours per week. Many students at Old Westbury commute, many work, many have families; it can be extremely burdensome for these students to commit the time required for a lab science. Clearly, an online lab science course could help this cohort fulfill the General Education requirement without unduly upsetting their non-academic obligations.

## 3. SCIENCE ONLINE AT OLD WESTBURY

Our interest in offering Online Ocean Studies stems in part from our success with the AMS' Online Weather Studies. Two faculty members from SUNY/Old Westbury, an atmospheric chemist and a physicist, attended the Weather Studies workshop in the summer of 2004. We then offered the course for the first time in the Spring of 2005. For that initial offering, we scheduled the course as a hybrid, with in-class lectures and online laboratories. While our intent had been to cap enrollment at 20, we gave in to demand and allowed overenrollments, with 22 people ultimately completing the course. Enrollment trends are shown in Figure 2. An enrollment of zero indicates the course was not offered;

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our ability to schedule the course is largely limited by availability of faculty to teach it.

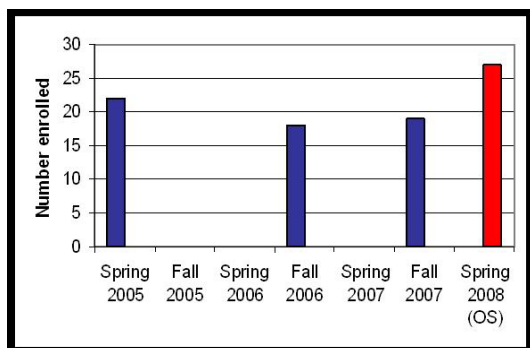


Figure 2. Students enrolled on Online Weather Studies (blue). Online Ocean Studies (red) currently has enrollment of 27, and a waiting list.

Since the spring of 2005 we have offered Online Weather Studies four times. In addition to the academic year offerings, we scheduled the course during the summer of 2007, with 16 students completing the five week session. This was highly significant for us. Since 2004 the department had attempted to meet demand for Old Westbury's required lab science by offering General Education science in the summer. These enrollments are shown in Figure 3. In both 2004 and 2005 we scheduled Chemistry for Non-majors and Physical Science, both as completely in-class courses. We let the courses run with low enrollments in the summer of 2004 with the hope that numbers would increase once students realized the courses would be available routinely in the summer. Alas, our hope was not realized. In 2005 we cancelled Chemistry for Non-majors, though we let Physical Science run. We are currently planning to run Online Weather Studies every summer, and hope to do as well with Online Ocean Studies.

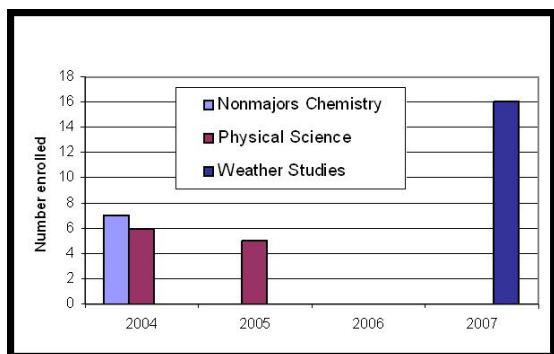


Figure 3. Students enrolled in General Education Science courses during summer sessions.

#### 4. THE VIRTUAL AND THE REAL

Having participated in the June 2007 Online Ocean Studies Implementation Workshop, held at the University of Washington in Seattle, our first offering of this course will be in the spring 2008 semester. Taken

together, the lecture and lab will fulfill Old Westbury's General Education requirement for a laboratory science course. Since the ocean is an integral part of life on Long Island, we are anxious to include a hands-on experience in our Ocean Studies offering. Advertising encourages people to see the beach as a playground, not as a sensitive part of an ecosystem. In an area as crowded as Long Island, people are a huge strain on that system.

To further the academic link between oceanographic theory and the student's own familiar summer playground (the beach), we plan to include several laboratory exercises that will require the student to apply their knowledge to the local environment. Long Island is home to beaches, estuaries, bays, rivers, sound, and ocean; and these are home to many species. To emphasize this, we hope to augment the online laboratory work with one or two field trips. The Riverhead Marine Foundation provides educational boat tours of the Peconic Estuary (see Figure 4), as well as seal walks at Montauk Point. Whales are sometimes sighted off of Jones Beach, which – when not covered by people – has an active bird population.



Figure 4. A view from the boat while touring the Peconic Estuary on LI's east end.

#### 5. CONCLUSION

The AMS online model has worked well for us with Weather Studies; academic year sections have consistently filled and we have added a summer session. By offering a lab course online, we are able to provide for those students whose work and/or family obligations make it difficult for them to accommodate the time commitment of a traditional in-class weekly lab session. By engaging students, both personally and intellectually, in ocean science as part of an earth system, we hope to further not only their future involvement in local environmental issues but also their commitment to a sustainable and global world view.

#### 6. ACKNOWLEDGEMENTS

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