

MassBay Community College research finding is made available to researchers worldwide



July 12, 2009 - Wellesley Hills, MA. Massachusetts Bay Community College (MassBay) announced today that the bacterium *Bacillus samanii*, first discovered and submitted to the Gene Bank at the National Institutes of Health in 2006, by Dr. Saman, Life Sciences Department Chair and Associate Professor of Microbiology, and his then, student, Patty Slattery, was recently deposited with the Biodefense and Emerging Infections Research Resources Repository

(BEI) as catalogue number NR-4056, and will be available for researchers within two to three weeks.

“The fact that the BEI, established by the **National Institute of Allergy and Infectious Diseases (NIAID)**, acquires, authenticates, and produces reagents that scientists need to carry out basic research and develop improved diagnostic tests, vaccines, and therapies makes this honor especially meaningful,” said MassBay President, Dr. Berotte Joseph.

“Although bacteria are discovered every year, the fact that the discovery happened at a community college is important. This achievement was made without benefit of a cadre of graduate research students, which makes this accomplishment all the more amazing,” said Dr. Saman, for whom the new *Bacillus* was named, and who is in the process of publishing a number of papers on *Bacillus samanii* and other discoveries. “At Mass Bay, we are fortunate to offer a superb faculty, state-of-the-art laboratories and cutting-edge equipment that provide research capabilities and a level of instruction usually found only at four-year colleges.”

Further evidence of this high achievement is provided by the fifteen Barry M. Goldwater Scholarships that have been bestowed on MassBay students. “The purpose of these scholarships is to provide a continuing source of highly qualified scientists, mathematicians, and engineers by awarding scholarships to college students who intend to pursue careers in these fields,” said Dr. Saman.

Dr. Saman, who indicated that MassBay students have also identified and sequenced at least fourteen other new bacteria since 2006, said: “These discoveries underscore the excellence of MassBay’s science program, which would not have been possible without the strong support of MassBay’s President Dr. Berotte Joseph. She has provided remarkable support, and has shown an extraordinary depth of understanding, vision and appreciation for what we are trying to accomplish.”



Community colleges offer high quality, affordable education, and are a tremendous bargain for students like Slattery.

“A student can complete an Associate’s degree in two years for approximately \$10,000. If that student maintains a GPA of 2.5 or above, they will have direct acceptance into a state college or university along with an automatic one-third reduction in tuition costs,” said Dr. Saman. “That means that a student can complete four years of college for \$30,000, or what it costs to attend a private school for just one year.”

Slattery, who after receiving her MassBay Associate’s degree, went on to study at UMass Boston in the Environmental, Earth & Ocean Sciences Department and graduates from UMass Boston in December of 2009, has continued to work in the interim with Dr. Saman as his Research Associate.

“MassBay is fortunate to have its own DNA Sequencer, NMR, HPLC and Gas Chromatography in addition to other sophisticated equipments that ordinarily, only large universities like Harvard or Boston University, would have available to them,” said Dr. Saman.

“It was Dr. Berotte Joseph who approved the purchase of our DNA Sequencer, and the decision to upgrade the software or the Gas Chromatography and HPLC and other state-of-the art equipment,” commented Dr. Saman. “The Sequencer’s superb genetic amenability and relatively large size provided the powerful tools required to investigate both a mammalian and bacterium genome from all possible aspects.”

“Use of this equipment is not just for research purposes, but is being incorporated by MassBay’s stellar science faculty into all of our science program curricula; including Chemistry, Microbiology, Biotechnology, and the Environmental Sciences,” said Dr. Saman. “The equipment provides a cutting edge to Mass Bay’s science curricula, but also significantly increases the knowledge, vision and understanding of our students.”

“Another fundamental rule of our program is to have our students study issues not readily found in textbooks. For instance, we have introduced Proteomics (the study of Proteins), Genomics (the study of the genomes of organisms) and Bioinformatics (the application of information technology to the field of molecular biology) to our curriculum to help us advance a critical thinking approach to our teaching,” said Dr. Saman.

“These methods, and others such as the integration of research into our teaching, are helping students expand their horizons, and are elevating them to new heights of understanding and sophistication.”

“In Microbiology, our students study the evolution of micro-organisms (examples include viruses and bacteria) and are asked: “How did they evolve?” “Which came first?” Students are also given unknown cultures, which they are asked to identify and to be prepared to support their findings. “In our Forensic DNA Science program, students hold mock trials where they present and defend the ‘facts’ in a court-like setting,” said Dr. Saman. “This approach is helping students become better at problem-solving and defending their findings, thus giving them more confidence in their abilities.”



In the near future, MassBay has plans to add two new degree programs that are currently going through the approval process. “The courses will offer associate degrees in Laboratory Animal Care and Bioinformatics. Both courses are on track to be introduced in the fall of 2010, pending approval from the Board of Higher Education. We are also hoping to begin non-credit certification preparation courses required by the American Association for Laboratory Animal Science Certification and Registry Board at the three levels of technician competence: the Assistant Laboratory Animal Technician, Laboratory Animal Technician & the Laboratory Animal Technologist,” added Saman.

Dr. Saman is also collaborating with UMass Boston on a Green Boston Harbor Project (GBHP) in partnership with the University of Massachusetts Boston’s Environmental, Earth & Ocean Sciences Department. He anticipates that Mass Bay will monitor and test Boston Harbor water and sediments and, perhaps, be involved in devising a plan for further restoration of the waters.

MassBay students have been working alongside Dr. Saman and Patty Slattery to identify and quantify a variety of microbial life in West Bridgewater’s Hockomock Swamp (“the largest swamp in Massachusetts although the least studied”). “The ten mile square swamp, used as a fortress by the Wampanoag Indian tribe in the seventeenth century, was also revered by them as a ‘place where spirits dwell’”, commented Dr. Saman. “Even today, the swamp is considered as a place of great mystery with many stories concerning unexplained happenings there.”

To bolster the Hockomock project, MassBay has already ordered two Sea Perches, or underwater vehicles, from the Massachusetts Institute of Technology (MIT). One of the vehicles will come complete with camera and video capability that will be used for under water explorations.

When asked whether he thinks the average person would recognize the importance of the *Bacilli samanii* findings, Dr. Saman comments: “Perhaps the findings will be seen as being of most importance to other biologists.” “Each species we study, however, does add more information to our understanding and appreciation of life on earth, and everyone can relate to that.”

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