

**LSU Health Sciences Center at Shreveport (LSUHSC-S) Scientists and Southwood High School  
Biotechnology Magnet Academy Students Team-up for Innovative Internship Program  
*Biomedical Research Foundation coordinated fundraising campaign to support program***

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A new internship program involving scientists from the LSU Health Sciences Center at Shreveport (LSUHSC-S) and seniors from the Biotechnology Magnet Academy at Southwood High School has begun.

The program called BioStart was the brainchild of Southwood High School Biotechnology Magnet Academy faculty, Biomedical Research Foundation administrators and LSUHSC-S faculty and administrators.

The two primary purposes of the BioStart Internship program are (1) to increase the understanding among parents, teachers and students of the link between basic science discoveries and clinical research and (2) address the need to increase the quality and quantity of area graduates in the medical, biotechnology and life science fields with the expectation that many of these students will earn advanced degrees and participate in the regional workforce as medical professionals, research scientists, teachers and technicians. *Forbes Magazine* (July 31, 2008) notes that Louisiana suffers from a weak scientific labor pool, and other sources note the State's lack of technology workers and activity in R&D and technology transfer<sup>1 2</sup>.

The BioStart program will introduce thirteen high school seniors from Southwood High School's Biotechnology Magnet Academy to hands-on, intensive and exciting laboratory research experiences and increase their understanding of science and how basic biomedical findings can translate into clinical research. Students will not be conducting clinical research themselves, but will learn how their studies can apply to medical breakthroughs.

The four key BioStart program areas and activities are as follows.

**1. Research Project**

- a. BioStart students will be mentored for a semester (18 weeks, 3 hours per day) by scientists from LSU Health Sciences Center at Shreveport Experimental Therapeutics Group within the Feist-Weiller Cancer Center. These scientists will introduce them to advanced research and biostatistical methods and provide them training on sophisticated equipment and techniques as they develop a research project that is relevant to the mentor's research field. The Experimental Therapeutics Group's mission is to discover and develop novel therapies for treating cancer. BioStart students will also present their

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<sup>1</sup> *Forbes Magazine* (July 31, 2008), [http://www.forbes.com/2008/07/30/virginia-georgia-utah-biz-cz\\_kb\\_0731beststates\\_table.html](http://www.forbes.com/2008/07/30/virginia-georgia-utah-biz-cz_kb_0731beststates_table.html)

<sup>2</sup> Battelle Memorial Institute, 2008, *State Bioscience Initiatives*, [http://www.bio.org/local/battelle2008/State\\_Bioscience\\_Initiatives\\_2008.pdf](http://www.bio.org/local/battelle2008/State_Bioscience_Initiatives_2008.pdf)

research, including statistical interpretation of their results. Students will participate in at least one poster session to present the results of their research project and will be encouraged to apply for one regional science competition, such as the Junior Science and Humanities Symposium and BioGENEius competitions.

**2. Educational Opportunities for Students**

- a. BioStart students will attend local lectures on specific clinical research topics. Local college and university faculty and graduate students will visit the Biotechnology Academy to give presentations on their basic and clinical research. Also, students will attend lectures and meet with eminent life science entrepreneurs and senior management from biotechnology and pharmaceutical companies from around the United States as part of the BRF-sponsored biotechnology seminar series for LSUHSC-S graduate students.

**3. Professional Development for Biotech Magnet Academy Teachers**

- a. To better prepare the Biotechnology Magnet Academy students for their BioStart internship, Biotechnology Magnet Academy teachers will receive professional development training in such subjects as Biology, Chemistry and Physics at Advanced Placement Summer Institutes such as those offered by Rice University or Texas A & M University.

**4. Community Outreach and Feedback**

- a. Program mentors and student interns will give presentations about basic, translational, and clinical research to groups of middle school students, their parents/caregivers at various outreach venues.
- b. Parents, teachers and students will be encouraged to attend symposia at LSUHSC-S on subjects such as cancer and Parkinson's disease. These groups will also be invited to attend BioStart kick-off and commencement functions, BioStart poster sessions, and other program events.

The Biomedical Research Foundation raised the funding for BioStart's pilot year from over 40 individuals, corporations and foundations in the Shreveport-Bossier community. The eight major underwriters of the program include; The Community Foundation of Shreveport-Bossier --Women's Philanthropy Network, The Poindexter Foundation, Dr. George A. Khoury, Jr., Mrs. Bobbie C. Hicks, Business First Bank, Mrs. Jasmine C. Morelock and George and Jean Baldwin.

In 2006, Southwood High School in Shreveport opened the Biotechnology Magnet Academy, a four-year (freshman to senior) program that challenges students with a 2.5 or better G.P.A. through an intensive, advanced hands-on science curriculum. There are currently 85 students in the program, now in its fourth year, with 25-30 freshman expected to enter the program each year.

In addition to taking Advanced Placement (AP) or Honors level math and sciences courses, the students take specially designed, college level science courses. The first year establishes a solid foundation and introduces students to the ethics and issues of biotechnology. The second year incorporates Dual Credit and AP math and science courses, while the third year focuses on microbiology/genetics and molecular/cellular biology (a dual-credit course taught by a professor from LSU in Shreveport). The senior year culminates with research techniques, including biostatistics, and the development of a research project.

The table below demonstrates the rigor of the Biotechnology Magnet Academy curriculum compared to the State of Louisiana requirements to receive a high school diploma.

<b>Biotech Magnet Academy Graduation Requirements</b>	<b>LA High School Graduation Requirements</b>
5 Advanced Placement Courses (including Physics)*	0 Advanced Placement Courses
9 Dual Enrollment Courses *	0 Dual Enrollment Courses
24 Honors Courses*	0 Honors Courses
5 Science Courses	3-4 Depending on year of entry
4 Science Electives	0 Science Electives
4 Math Courses	3-4 Depending on year of entry

\*There is overlap among AP, Dual Enrollment and Honors courses, since dual enrollment courses are also either honors or AP.

In 2008, the Biomedical Research Foundation was named as a Distinguished Partner in Education by the Louisiana Board of Elementary and Secondary Education for its efforts in developing K-12 science and math programs. The Foundation was the only recipient in north Louisiana to receive this honor. Since 1996, the Foundation has secured over \$1.7 million for area science education programs. The Biomedical Research Foundation is dedicated to knowledge-based economic development through cultivating and attracting life science and related industries to the region.

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