

## **2005 *Base Pair* Summer Teacher Training**

**June 13 – July 22  
9:00 a.m. – 5:00 p.m.**

The University of Mississippi Medical Center (UMC) and the Howard Hughes Medical Institute are sponsoring a 6-week program of laboratory training and curriculum development for high school and middle school science teachers this summer. Each teacher will be “paired” with a UMC research faculty member to mentor and assist the teacher in his/her professional development.

Program objectives include:

- 1) acquainting science teachers with modern skills in biological and chemical laboratory techniques, in a manner that will facilitate utilization in routine science courses;
- 2) familiarizing teachers with the fundamental knowledge required to incorporate www-based inquiry as an essential component of science teaching;
- 3) assisting teachers in the development and funding of specific, inquiry-based exercises that will be incorporated at their home schools.

A maximum of six (6) teachers will be selected to participate in the summer institute. The program is open to high school and middle school teachers throughout the JPSPD, as well as from other districts. Selection criteria include a review of a **current resume**, a **letter that states how an applicant would apply the concepts of biotechnology and information technology within their classroom, and a personal interview** by Dr. Rob Rockhold, the Program Director. Emphasis will be on the selection of individuals who are proven academic leaders and have the initiative and willingness to work for implementation of the activities developed in the summer program.

The program is committed to building the capacity to implement and sustain high-quality curricular and instructional programs for all students. Teachers choosing to participate in this program will be asked to support educational reform initiatives in one or more of the following ways:

- Sharing experiences and materials with colleagues in your school through professional development programs.
- Conducting district level workshops on the implementation of inquiry-based teaching and learning strategies in high school science (unique to JPSPD).
- Serving your school as the biology (science) representative on the School Improvement Team (unique to JPSPD).

An honorarium will be given and substantial supplementary resources will be provided to participants.

If you are interested in participating in the **Base Pair** Summer Teacher Training,

- contact Dr. Rockhold by phone at 984-1634, by pager at 929-4083, or by e-mail at [rockhold@pharmacology.umsmed.edu](mailto:rockhold@pharmacology.umsmed.edu) by March 1, 2005 and
- fax a current resume to 984-1637, attention Dr. Rob Rockhold.

For more information, please contact Dr. Rob Rockhold (UMC).

(Supported by an award from the Howard Hughes Medical Institute)

## Extended Program Description

Summer Research Institute at the UMC SHRP. **Base Pair**, a biomedical research mentorship program, pairs faculty from the University of Mississippi Medical Center (UMC) with students and educators from the largest Mississippi public school system, the Jackson Public School District (JPSD). Initiated in 1992, **Base Pair** seeks to meet an increasing demand for the teacher training that it provides in the area of laboratory-based science instruction in biology and chemistry. The primary objective is to establish a state-of-the-art laboratory science training facility at the UMC-SHRP (the **Summer Research Institute**) to enhance professional development of high school science teachers and stimulate inquiry-based science curriculum formulation. Teachers will be drawn from and programs directed toward the current **Base Pair** target site, Murrah High School, and Student Oriented Academic Research (SOAR) Sites, and potentially, teachers from area private schools. Program impact will be documented by continuation of a record of high school teacher presentation/publication of science research in professional scientific forums, adoption of a **Base Pair**-created science course, *Introduction to Biomedical Research*, at high school sites, and utilization of laboratory activities fostered by **Summer Research Institute** graduates. Use of the inquiry-based course, *Introduction to Biomedical Research* (Mississippi Department of Education Course Code 260502), by teachers will be encouraged. Research ethics, laboratory safety, electronic communications and information retrieval, grant writing and the use of literature about science and scientists as an integral part of science teaching will be promulgated.

The SHRP has provided access to a newly constructed clinical laboratory science training facility for use by **Summer Research Institute** teachers. The space provided (Room SH259) includes approximately 1,840 ft<sup>2</sup> of bifunctional laboratory/classroom area with an additional 820 ft<sup>2</sup> of biotechnology preparatory laboratory space. These state-of-the-art laboratory facilities are designed specifically to teach biotechnology-oriented disciplines to clinical laboratory science professionals-in-training.

Objectives of the expanded **Summer Research Institute** will be to:

- 1) acquaint secondary school science teachers with modern skills in biological and chemical laboratory technique, in a manner that will facilitate utilization in routine high school science courses. The skills will include quantitative measurement and preparatory methods, centrifugation, use of preparatory and analytical chromatography (column and electrophoretic), sterile technique, microbiological culture, and protein analysis.
- 2) familiarize teachers with the fundamental knowledge required to incorporate WWW-based inquiry, by students, as an essential component of science teaching.
- 3) assist teachers in the development, and funding, of specific, inquiry-based, exercises that will be incorporated at their home schools. To the maximum extent possible, exercises will be structured around simple, low-cost, commercially available biotechnology-oriented kits. Training in writing of proposals for funding of such kits for independent classroom use will be provided.
- 4) propose WWW-based mechanisms by which teachers can communicate with one another, and have the ability to readily access biomedical expertise, information and equipment resources during the school year, and
- 5) promulgate adoption of the course, *Biomedical Research*, at each teacher's home school.