

# Human Genome Sequencing Center

## Baylor College of Medicine

### **PRE-GRADUATE TRAINING EDUCATION PROGRAM**

The Human Genome Sequencing Center (HGSC) received funding from the National Human Genome Research Institute to promote the advancement of underrepresented minorities participating in the Genomic research. The goal of the HGSC's program is to provide training and support to gain admission to graduate school with the expectation that they will successfully complete Ph.D. programs in the field of genomics or engineering.

The pre-Graduate Training Education Program will financially support HGSC employees for two years who are interested in applying to Ph.D. programs in the genomic sciences (biology, chemistry, physics, math, engineering, computer science, public health). The program will offer various opportunities to strengthen the participant's background in order to increase their ability to successfully enter a graduate program. Each year a Selection Committee will choose participants for the program.

#### ***PROGRAM REQUIREMENTS***

##### All Participants Must Meet the Following Requirements:

- CURRENT HGSC EMPLOYEE
- MEMBER OF THE FOLLOWING UNDERREPRESENTED MINORITY GROUPS: AFRICAN AMERICAN, HISPANIC AMERICAN, NATIVE AMERICAN, AND PACIFIC ISLANDER
- HAVE A EARNED BACHELOR'S DEGREE

#### ***PROGRAM SUMMARY***

##### The Program Provides The Following:

- Kaplan GRE-PREP COURSE
- FINANCIAL SUPPORT FOR MATH, SCIENCE, OR COMPUTER SCIENCE COURSES AT LOCAL UNIVERSITIES
- PROGRAM MENTOR; EXPOSURE TO MINORITY SCIENTISTS
- MOLECULAR/CELL BIOLOGY COURSE ( BCM GRADUATE SCHOOL PREP PROGRAM)
- ASSISTANCE WITH GRADUTE SCHOOL PREPARATION
- PARTICIPATION IN GENOMIC COURSE OFFERED BY TMC HEALTH DISPARITIES CONSORTIUM
- WEEKLY GROUP MEETINGS/BROWN BAG SERIES

CONTACT: DEBRA MURRAY @ (713) 798-8083/email (ddm@bcm.tmc.edu)



**APPLICATION INSTRUCTIONS  
PRE-GRADUATE EDUCATION TRAINING PROGRAM  
HUMAN GENOME SEQUENCING CENTER  
BAYLOR COLLEGE OF MEDICINE**

General Instructions

Complete all sections and fill in requested information as completely as you can.

Academic Information

Calculate your grade point average for each category. Convert letter grades to numbers using the following system: A = 4, B = 3, C = 2, D = 1, and F = 0. For each letter grade you received, multiply the point value for that letter grade by the number of credit hours for the course; this gives you the grade point for that course. Add up your total grade points. Add up your total number of credits. To get the average GPA, divide the total grade points by the total number of credits. You must include all courses from every college you attended to give an accurate GPA for your college work.

Academic Institutions Attended

List in chronological order all colleges and universities that you attended. Include the date you began and the date of the last semester you attended that institution. If you have not received a degree from that institution please indicate the date you plan to graduate (if you are still attending the institution). If you attended a summer program at the institution please indicate by placing an "S" in the Degree Awarded column. Please have an official transcript mailed to Dr. Murray/Human Genome Sequencing Center/Baylor College of Medicine/One Baylor Plaza N1519/Houston, TX 77030.

Standardized Test

If you have taken the GRE (or MCAT) in the past three years, please provide the scores for this exam. An official copy of your score report is **not** necessary for the application.

Letters of Recommendation

Please give the enclosed form to your current manager and one of your former professors to complete. Letters of recommendation and this form must be in sealed, signed envelopes and included in your application package.

Career Goals

Provide a one-page type written personal statement that would explain your exposure to science, research experience, and future goals.

Deadline

Please submit completed application by **May 15, 2009** to Dr. Debra Murray/Human Genome Sequencing Center/Baylor College of Medicine/One Baylor Plaza N1510/Houston, TX 77030.

**Human Genome Sequencing Center  
Pre-Graduate Education Training Program  
Application Form  
Spring 2009**

Personal Data

Name: \_\_\_\_\_  
Last Name First Middle

Social Security Number: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

Place of Birth: \_\_\_\_\_  
City State/County

Present Address: \_\_\_\_\_  
Number and Street Name Apt or Bldg. No.

\_\_\_\_\_  
City State Zip Code

Permanent Address: \_\_\_\_\_  
Number and Street Name Apt or Bldg. No.

\_\_\_\_\_  
City State Zip Code

Telephone: \_\_\_\_\_  
Permanent Cell Lab No.

Email address: \_\_\_\_\_

Sex:

- Male  
 Female

Citizenship: \_\_\_\_\_ If not U.S, visa type \_\_\_\_\_

Optional: Do you consider yourself a minority?

- Yes If yes, which minority group? \_\_\_\_\_  
 No

**Academic Institutions Attended:** Please submit **official** transcripts from all colleges you attended.

Institution	Location City/State	Dates Attended From-To (Month/Year)	Field of Study	Degree Awarded

**Academic Information:** Please calculate your GPA and provide the following information for all undergraduate and graduate course work.

	<u>Undergraduate</u>		<u>Graduate</u>	
	GPA	Credit Hours	GPA	Credit Hours
Science				
Non-Science				
Overall				

**Standardized Tests:** If you have taken the GRE or MCAT, please provide a copy (unofficial) of those scores along with your application.

**Research and Training Experience:** Please list any medical or research training programs you may have participated in prior to your employment in the Genome center.

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**Human Genome Sequencing Center Employment History:**

How long have you been employed at the HGSC? \_\_\_\_\_

What division do you work in? \_\_\_\_\_

Who is your senior manager? \_\_\_\_\_

**Letters of Recommendation:** Two letters of recommendation will be accepted, one from your current HGSC senior manager and one from a college professor.

Reference 1: \_\_\_\_\_  
Name University

\_\_\_\_\_  
Department Address

City	State	Zip	Telephone
Reference 2:			
Name	University		
Department		Address	
City	State	Zip	Telephone

***Career Goals:*** Please provide a one-page statement that addresses the following questions (include any obstacles you have had to overcome in your preparation for your future plans).

Why are you interested in pursuing an advanced degree?

How has your experience in the HGSC shaped your future plans?

**Certification:**

“I certify that the information submitted in this application is complete and correct to the best of my knowledge.”

Signature	Date
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## Human Genome Sequencing Center Pre-Graduate Education Training Program Application Form Spring 2009

	College Lab Experience	College Courses	Work Experience
<b>COMPUTER SKILLS</b>			
Programming languages:			
4GL			
Basic			
C			
C++			
Fortran			
JAVA			
LISP			
Pascal			
Perl			
PROLOG			
tk/tcl			
X-window			
Motiff			
Builder accessory			
Applications:			
Data bases			
E-Mail			
Graphics			
GUI builders			
Image analysis			
Modeling			
Charmm			
Frodo			
X-plor			
Networking			
Signal processing			
Simulations			
Statistics			
Word Processing			
Other (specify)			
Other (specify)			
Other (specify)			
Machines & Operating Systems:			
Digital			
Dos/Windows			
Macintosh			
Silicon graphics			
Sun			
Unix			

	College Lab Experience	College Courses	Work Experience
<b>ENGINEERING SKILLS</b>			
General:			
Data acquisition			
Data analysis			
Experimental Design			
Experimental Methods			
Machine Shop			
Statistics			
Chemical:			
Diffusion			
Fluid dynamics			
Heat transfer			
Reactions			
Reactors			
Other (specify)			
Electrical:			
Analog simulation			
Circuits			
Circuit modeling			
Electrodes			
Instrument integration			
Signal processing			
Systems integration			
Other (specify)			
Mechanical:			
Biomechanics			
Materials science			
Materials testing			
Stress, strain analysis			
Structural mechanics			
Specialized:			
Image analysis			
Robotics			
Mathematics:			
Analytical geometry			
Differential equations			
Matrix algebra			
Numerical analysis			
Parameter ID			
Statistics			
Vector calculus			

	College Lab Experience	College Courses	Work Experience
<b>A. Field of Work</b>			
Biochemistry			
Biomechanics			
Biomedical Engineering			
Cell Biology			
Genetics			
Immunology			
Materials Science			
Metallurgy			
Microbiology			
Molecular Biology			
Neurobiology			
Pharmacology			
Physical Chemistry			
Physiology			
Virology			
Other (specify)			
Other (specify)			
<b>1. General Laboratory Methods</b>			
Buffer preparation			
pH measurement			
Making solutions			
Sterile technique			
Record keeping			
Other (specify)			
<b>2. Quantitative Methods</b>			
Protein assays			
DNA/RNA assays			
Enzyme assays			
Other (specify)			
Other (specify)			
<b>3. Analytical Methods</b>			
Chromatography:			
Thin-layer			
Column			
HPLC			
Gas/Liquid			
Spectrometry:			
UV/VIS			
IR			
GC/MIS			
NMR			
CD			
Other (specify)			
Ultracentrifugation			

	College Lab Experience	College Courses	Work Experience
<b>Analytical Methods (cont.)</b>			
Electrophoresis:			
PAGE			
2-D Gels			
Agarose			
SSCP			
Western blotting			
Protein expression			
Protein purification			
Other (specify)			
<b>4. Microscopy</b>			
Light microscopy			
Fluorescence			
Transmission EM			
Scanning EM			
Tissue Preparation:			
Light			
EM			
Frozen sections			
Cytogenetics			
Histochemistry			
Other (specify)			
<b>5. Recombinant DNA</b>			
DNA/RNA isolation			
Plasmid preparation			
Restriction mapping			
cDNA synthesis			
Cloning			
Construct preparation			
Library screening			
Southern hybridization			
Northern hybridization			
PCR			
Sequencing			
Translation			
Transfection			
DNA chip analysis			
Other (specify)			
<b>6. Tissue Culture</b>			
Cell culture			
Organ culture			
Cell transformation			
Cell fusion			

## Scientific Background and Skills Assessment (Continued)

	College Lab Experience	College Courses	Work Experience
<b>Tissue Culture (cont.)</b>			
Animal passage			
Media Preparation			
Other (specify)			
<b>7. Microbiology, Immunology &amp; Virology methods</b>			
Antibody production			
Antibody purification			
RIA			
ELISA			
Organism culture			
Handling pathogens			
<b>8. Animal Handling</b>			
Animal care			
Animal surgery			
Do you object to working with rats or mice?		Yes	No
<b>9. Radioisotope Methods</b>			
Radiotracers			
Radiolabelling			
Scintillation counting			
Gamma counting			
Radiation monitoring			
Other (specify)			
<b>10. Computer Technology</b>			
Mainframe			
Micros			
PC			
Excel			
Powerpoint			
html			
Graphics			
Other (specify)			
<b>11. Writing</b>			
Editing manuscripts			
Manuscript writing			

If you have skills or experience that are not indicated on this roster, please include this information in the spaced provided below.

### Microbiology & Virology Methods


### Physiology Methods


### Patient Contact


### Other (specify)



### List Publications (if any):


## Applicant Evaluation Form

Applicant's Full Name: \_\_\_\_\_

Applicant's Social Security Number: \_\_\_\_\_

College / University: \_\_\_\_\_

Evaluator: \_\_\_\_\_ Phone: \_\_\_\_\_

Evaluator's Signature: \_\_\_\_\_

How long have you known the applicant? \_\_\_\_\_

In what capacity? \_\_\_\_\_

Please rate the applicant in all categories. Place an (X) in the field that best describes the applicant's characteristic.

Characteristic	Outstanding	Excellent	Good	Average	Below Average
Desire to learn					
Curiosity					
Creativity					
Hard working					
Perseverance					
Ability to adapt to new situations					
Interpersonal skills					
Analytical problem solving					
Scientific knowledge					
Technical expertise					

Please include a letter of recommendation that provides any information you feel would be helpful in assessing the applicant's placement in the Pre-Graduate Education Program, including obstacles the applicant has overcome. Return this form with the letter of recommendation to:

**Pre-Graduate Education Training Program  
Human Genome Sequencing Center  
Baylor College of Medicine  
One Baylor Plaza, N1519  
Houston, TX 77030**

**Attn: Debra Murray, Ph.D.**