

Dear HGSC-GGREAT Program Applicant:

The Human Genome Sequencing Center (HGSC) invites your application for the HGSC-G/GREAT (Genetics/Genomics Research Education And Training) program. The goal of the HGSC-G/GREAT program is to provide training to encourage diverse individuals to become research scientist. Your interest in this program implies that you recognize the importance of biomedical research in today's world. Our goal is to offer a unique research training opportunity that will help undergraduates explore what a career in this challenging area has to offer, with hands-on experiences. If you have already made this decision, participation in a summer program will allow you to further define your goals and to acquire valuable knowledge and skills needed to attain your career objective. The HGSC summer research program started in 2003, and we have the following success: ***100% of our trainees obtain bachelor's degrees in STEM; 46% of our undergraduate trainees entered PhD programs, while 15.4% enrolled in Master's Programs.*** Program alumni rate this as their best summer research experience.

The Human Genome Sequencing Center wants to increase the number of underrepresented minorities in the genomic sciences (minorities in the genomic sciences are identified as African American, Hispanic American, Native American, and Pacific Islanders). Students with backgrounds in chemistry, biology, math, engineering (electrical, chemical, or computer), and computer science have an excellent opportunity to contribute to the world of genomic sciences because of the Human Genome Project. The program provides underrepresented college students an opportunity to work in genetics/genomics, bioinformatics, or engineering research labs located in the Texas Medical Center and receive a competitive stipend. Other program activities include: overview of the importance of genomics; daily noon-time seminars that enhance students' knowledge of biomedicine and their perception of the role science and scientists play in our society; Bioinformatics BootCamp course; Health Disparities Workshop; Theory and Technique Training course; career choice and professional development activities; a Graduate School Night; and a GREprep course.

The official program dates are **May 29th** through **July 27, 2018**. You must be able to participate for 9 weeks during the summer. Participants will receive a competitive compensation. The deadline for submitting application materials is **March 9th** (postmarked). Applications are not accepted after the deadline, and incomplete applications will not be processed.

During the summer at BCM, we have many summer research students from all over the country that share an interest in biomedicine and an enthusiasm for learning. Participants will come from diverse geographic, socioeconomic and ethnic backgrounds. Planned social activities will help you meet other participants and participants are **expected** to live in housing at Rice University. This living experience is an important part of immersion in the program. Parks, museums and shopping centers are within walking distance.

A complete application consists of: HGSC-G/GREAT Program Application which includes the Scientific Background & Skills Assessment, Computer & Engineering Skills Assessment, Research Description, two letters of recommendation with the Student Evaluation forms attached, and official transcripts with all grades through the 2017 fall term from all colleges or universities you have attended. Please submit a one-page statement regarding obstacles you have overcome to gain an education. Use at least a 12-point font. Please submit all application materials to: Dr. Debra Murray, Human Genome Sequencing Center, Baylor College of Medicine, One Baylor Plaza, N1519; MS 226 /Houston, TX 77030. If you have any questions, please contact me at (713) 798-8083 or e-mail ddm@bcm.edu. We look forward to receiving your application with great interest.

Sincerely,

Debra Murray, Ph.D.
Director-Education & Minority Diversity Programs
Human Genome Sequencing Center
Instructor
Molecular and Human Genetics

Attachments

The HGSC-G/GREAT way to do *great* research
and prepare for the GRE!

HGSC-G/GREAT GRE Prep Course
FREE for participants in the HGSC-G/GREAT Program

*Enhance and increase your reading and analytical skills for test
preparation through this prep course.*

*HGSC-G/GREAT participants are **REQUIRED** to take this course!*

You will receive the following:

Course sessions with Experienced Instructors

Diagnostic Test

GRE Verbal Reasoning

GRE Quantitative Reasoning

POWERSCORE GRE Verbal Reasoning Bible

POWERSCORE GRE Quantitative Reasoning Bible

Access to Course Online up to 6 months after leaving the program

*All participants must register for the GRE **prior** to leaving the program.*

Hints for a Speedier Application Process

Please follow these guidelines to help provide a better review of your application.

- **DO NOT** leave any areas blank on the application unless they do not apply. For example: fields for birth date, social security number, citizenship, visa, letters of recommendation section, and the schools attended must be filled out or the application may be returned, therefore, taking longer to process. Please **do not write “SEE ATTACHED”** on any part of the application. Attached material will not be considered unless it is the one-page description of previous research experience or the optional statement regarding obstacles you have overcome.
- Typed responses are preferred, but not required.
- Information on the application **MUST** be accurate. If you do not take courses or gain skills that you have indicated on the skills rosters in the application, **please notify us immediately**.
- Resumes, extensive lists of activities or additional lists of academic awards and honors should not be sent. Please use the space provided on the application for relevant information.
- **WE DO NOT ACCEPT** faxed applications, transcripts, or letters of recommendation.
- Using nicknames on applications and letters of recommendation may confuse reviewers. Please inform the person that will write a letter of recommendation to include your full name and social security number.
- Transcripts and letters of recommendation can be submitted in one of two ways. They can be submitted with your application IF they are sealed in an envelope with your professors' signature across the seal. Otherwise, they need to be submitted directly from the school or individual. **Copies will not be accepted.**
- **Prior to the March 9th deadline**, you may receive notice of missing information (i.e., transcripts or letters of recommendation) by e-mail. **After this initial notice and date, it is your responsibility to continue to follow-up regarding the status of your application file.**
- **ONLY THE APPLICANT** should inquire regarding the status of their application. Information will not be released to anyone on your behalf. This information can be obtained by emailing ddm@bcm.edu or calling 713-798-8083.
- Please provide your first initial and last name at the bottom of every page of the application.

We have found that following these guidelines will help greatly in processing all applications.

Good Luck!

Please mail application materials to:

Dr. Debra Murray
Human Genome Sequencing Center
Baylor College of Medicine
One Baylor Plaza, MS226
Houston, TX 77030

Calculation of GPA

This calculation must be completed by all applicants whose schools **do not** provide a calculated GPA on the transcript or whose schools use a system that award other than 4 grade points for an "A". The calculated GPA should be recorded on the first page of the application in the designated position.

If your school(s) provide(s) a calculated GPA with a standard 1-4-point system, you do not need to recalculate your GPA, but you do need to record the GPA provided on your transcript in the designated position on the first page of the application.

To calculate GPA:

1. For each college course in which you have received a letter grade assign the following point value to each grade:
A=4 B=3 C=2 D=1 F=0
2. For each course in which you received a letter grade, multiply the point value by the number of credit hours. For example, an A in a 3 credit (hour) course would be worth 12 grade points.
3. Add the total number of grade points = points x credits.
4. Add the total number of credits.
5. To get the average GPA, divide the answer in #3 by the answer in #4.
6. To be qualified to apply to the HGSC-G/GREAT Program the GPA should be between 3.0 and 4.0.
7. Record the calculated GPA on the first page of the program application.



Human Genome Sequencing Center – Genetic/Genomics
Research Education and Training Program (HGSC-G/GREAT)
2018 Application-Deadline March 9th, 2018

Personal Information

Name: _____
Last First Middle
Present Address: _____
Street Apt. No.
City State Zip Code
Permanent Address: _____
Street Apt. No.
City State Zip Code
Telephone: _____
Permanent Cell Temporary
email address: _____ Date of Birth: _____ Social Security No.: _____
Sex: Male Female Citizenship: _____ If not U.S., visa type: _____

Do you consider yourself a member of an underrepresented group? Yes No If yes, which underrepresented group? _____
Are you a first-generation college student? Yes No How did you hear about the HGSC-G/GREAT Program? _____
List any limiting health conditions that should be considered for the purpose of accommodating living or working conditions: _____

Education (You must submit official transcripts from all colleges you have attended including grades for the 2017 semester.)

High School: _____ City: _____ State: _____
College: _____ City: _____ State: _____ Hrs. Completed: _____
College: _____ City: _____ State: _____ Hrs. Completed: _____
Date of college enrollment: _____ Classification (i.e. Soph, Jr.): _____
Major: _____ Minor: _____ Current cumulative GPA: _____ Degree & date expected: _____
List any relevant scholarships, awards & honors (College then High School): _____

List courses in which you are currently enrolled (note any lab courses): _____

Career Goals

Post-baccalaureate interest (PhD, MD, MD/PhD, Other) List in order of preference: _____
Statement of career objectives: _____

Please list 3 research areas, in order of preference, in which you are interested to be considered after all genomics placements are filled.

- Biochemistry Computational Biology Molecular Biophysics Pediatrics
- Biomedical Engineering Developmental Biology Molecular Genetics Pharmacology
- Breast Cancer Gene Therapy Molecular Pathobiology Physiology
- Cancer (General) Immunology Neuroscience Structural Biology
- Cardiovascular Sciences Microbiology Nutrition Virology
- Cell Biology Molecular Biology Pathology

Letters of Recommendation

Note: Two letters of recommendation are required. At least one letter from a faculty member at your school is required. If you have had prior research experience, please list the research mentor as reference 1; **if you have previously worked at BCM a recommendation is required from your BCM research mentor.** These should be submitted to us directly from the school or individuals, **not the applicant.**

Reference 1:

Name _____ University _____
Department _____ Address _____
City _____ State _____ Zip _____ Telephone _____

Reference 2:

Name _____ University _____
Department _____ Address _____
City _____ State _____ Zip _____ Telephone _____

Research and Training Experience

Have you previously participated in a medical or research training program? _____ If yes, list site(s) and name(s) of program(s).

If you have had research experience, list on a separate sheet of paper the names of research mentors, project title(s), dates and location of your experience(s). Describe one research experience including project, techniques which you used, results achieved (if any) and their significance. **DO NOT EXCEED ONE TYPED PAGE.**

If you have not had the opportunity to obtain prior research experience, on a separate sheet of paper, explain how a research experience would benefit you and describe areas of research in which you are interested.

Have you been previously employed by Baylor College of Medicine? _____

Personal History

Please submit a one page essay describing obstacles you have overcome in life; also, include any interest or experience in programming/coding or bioinformatics. List jobs held with place, dates and position title of employment:

Additional Information

Students are required to spend 9 weeks on site and expected to live in the Rice University dorm located in the Texas Medical Center. The program dates are May 29th – July 27, 2018. Will you require on campus parking? _____ Will you require vegetarian meals while at Baylor College of Medicine? _____

Do you plan on or have you taken the MCAT, if so, when? _____ Please include unofficial copy of MCAT and/or GRE scores previously taken.

You **MUST** list any activities or circumstances that could prevent you from completing the 9-week duration of the program, even if you do not know you will participate in the activity. Do not list other summer research programs. _____

Certification

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

Signature _____

Date _____

Rev. 1/5/2018

Baylor College of Medicine is an Equal Opportunity and Equal Access College.



Baylor College of Medicine

HGSC-G/GREAT Program Application Summer Research Training Program

Computer and Engineering Skills Assessment

Research experience is not required for admission, but we need accurate information in order to assess your previous experience and match selected participants to the most appropriate projects. Please complete both sides of this roster by indicating the number of weeks (months, years, **check mark is unacceptable**) and type of experience or study you have in each category. If you only conducted a few experiments, you may list for example: 2 exps. Place an asterisk next to the experience you do not have now, but expect to have by the summer of 2018. If you do not take a course or attain expected experience, please contact us immediately as this information is extremely important in placement.

	College Lab Experience	College Courses	Work Experience
COMPUTER SKILLS			
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
ENGINEERING SKILLS			
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			

Scientific Background and Skills Assessment

Research experience is not required for admission, but we need accurate information to assess your previous experience and match selected participants to the most appropriate projects. Please complete both sides of this roster by indicating the number of weeks (months, years, a **check mark is unacceptable**) and type of experience or study you have in each category. If you only conducted a few experiments, you may list for example: 2 exps. Place an asterisk next to the experience you do not have now, but expect to have by the summer of 2018. If you do not take a course or attain expected experience, please contact us immediately as this information is extremely important in placement.

	College Lab Experience	College Courses	Work Experience
A. Field of Work			
Biochemistry			
Biomechanics			
Biomedical Engineering			
Cell Biology			
Genetics			
Immunology			
Materials Science			
Metallurgy			
Microbiology			
Molecular Biology			
Neurobiology			
Pharmacology			
Physical Chemistry			
Physiology			
Virology			
Other (specify)			
Other (specify)			
1. General Laboratory Methods			
Buffer preparation			
pH measurement			
Making solutions			
Sterile technique			
Record keeping			
Other (specify)			
2. Quantitative Methods			
Protein assays			
DNA/RNA assays			
Enzyme assays			
Other (specify)			
Other (specify)			
3. Analytical Methods			
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
Analytical Methods (cont.)			
Electrophoresis:			
PAGE			
2-D Gels			
Agarose			
SSCP			
Western blotting			
Protein expression			
Protein purification			
Other (specify)			
4. Microscopy			
Light microscopy			
Fluorescence			
Transmission EM			
Scanning EM			
Tissue Preparation:			
Light			
EM			
Frozen sections			
Cytogenetics			
Histochemistry			
Other (specify)			
5. Recombinant DNA			
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)			
6. Tissue Culture			
Cell culture			
Organ culture			
Cell transformation			
Cell fusion			

Applicant Evaluation Form - 1

Student's Full Name: _____

Student's Social Security Number: _____

College / University: _____

Faculty Evaluator: _____ Phone: _____

Faculty Evaluator's Signature: _____

How long have you known the student? _____

In what capacity? _____

Please rate the student in all categories with which you feel qualified to assess characteristics relative to other students at the same academic classification (i.e., freshman, sophomore, etc.) with whom you have had contact. Place an (X) in the field that best describes the student'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 along with this form** that provides any information you feel would be helpful in assessing the student's placement in the HGSC-GGREAT Program, including obstacles the student has overcome. Return this form with the letter of recommendation to:

Dr. Debra Murray
Baylor College of Medicine
Human Genome Sequencing Center
One Baylor Plaza, N1519; MS 226
Houston, TX 77030
ddm@bcm.edu

Applicant Evaluation Form - 2

Student's Full Name: _____

Students Social Security Number: _____

College / University: _____

Faculty Evaluator: _____ Phone: _____

Faculty Evaluator's Signature: _____

How long have you known the student? _____

In what capacity? _____

Please rate the student in all categories with which you feel qualified to assess characteristics relative to other students at the same academic classification (i.e., freshman, sophomore, etc.) with whom you have had contact. Place an (X) in the field that best describes the student'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 along with this form** that provides any information you feel would be helpful in assessing the student's placement in the HGSC-GGREAT Program, including obstacles the student has overcome. Return this form with the letter of recommendation to:

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