

## CYTOGENETIC TECHNOLOGIST

### BACHELOR OF SCIENCE DEGREE & POST-BACCALAUREATE CERTIFICATE

Cytogenetic technologists professionals are qualified by academic and applied science education to provide service and research in classical cytogenetics (chromosome analysis), molecular cytogenetics (fluorescent in situ hybridization), genomic analysis (array comparative genome hybridization) and other related areas in rapidly changing and dynamic healthcare delivery systems. They have diverse and multi-level functions in the areas of chromosome and genome analysis and clinical decision-making, information management, regulatory compliance, education, and quality assurance/performance improvement wherever inherited or cancer genetics testing is researched, marketed, developed or performed. The information provided from genetic testing is used by clinicians to diagnose genetic conditions whether inherited or acquired, determine treatment modalities, provide counseling and manage the long term care of patients. Cytogenetic technology professionals perform, develop, evaluate, correlate and assure accuracy and validity of genetic laboratory testing and procedures; direct and supervise laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. They possess skills for financial, operations, marketing, and human resource management of the genetics laboratory.

Cytogenetics professionals practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, health care professionals, and others in laboratory practice, as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment, and a demonstration of commitment to the patient are essential qualities. Communication skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education. Cytogenetics professionals demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

Employment of clinical laboratory workers is expected to grow by 14 percent between 2008 and 2018, faster than the average for all occupations. The volume of laboratory tests continues to increase with both population growth and the development of new types of tests. Technological advances will continue to have effects on employment. New,

increasingly powerful diagnostic tests and advances in genomics will encourage additional testing and spur employment.

Job opportunities are expected to be excellent because the number of job openings is expected to continue to exceed the number of jobseekers. Willingness to relocate will further enhance one's job prospects.

Median annual wages of medical and clinical laboratory technologists were \$56,130 in May 2010. The middle 50 percent earned between \$47,130-66,370. The lowest 10 percent earned less than \$38,810, and the highest 10 percent earned more than \$76,780.



### PROGRAM OVERVIEW

The **Bachelor of Science in Cytogenetics program** consists of a minimum of 120 semester credit hours, including the Texas Core Curriculum and program prerequisites completed at a regionally accredited college/university, and 36 semester credit hours of Cytogenetics courses completed at the Health Science Center. The Health Science Center phase of the program consists of approximately 12 months of full-time study.

The **Post-Baccalaureate Certificate program in Cytogenetics** is available for students who have already completed a bachelor's degree in natural science (biology, microbiology, medical technology, etc.) or a physical science (chemistry, physics, etc.). Health Science Center coursework is the same for both the B.S. and post-baccalaureate certificate programs.

The programs may be completed in 12 months, based on full-time enrollment. Part-time enrollment is possible, but full-time students receive scheduling priority for clinical coursework. Most didactic courses are offered once a year. Graduates of the bachelor's degree program are eligible to take the *Technologist in Cytogenetics* examination given by the Board of Certification of the American Society for Clinical Pathology (ASCP), 33 West Monroe St., Suite 1600, Chicago, IL, 60603, 1-800-267-2727.

## ADMISSION REQUIREMENTS & PREREQUISITES

- Minimum of 84 semester credit hours, including the Core Curriculum & science/math requirements
- A grade of **C** or better in all science and math courses
- Minimum GPA of 2.5 (on a 4.0 scale)
- Two reference forms completed by former instructors

Math and Science Program Prerequisites for Cytogenetics:

- Statistics, 3.0 hours (for B.S. program only; applicants seeking a post-bacc certificate must have completed 3 credit hours of math for which college algebra was a prerequisite)

11 hours of Biology, including:

- Biology I and laboratory
- Genetics
- Microbiology and laboratory

12 hours of upper division courses from the following or similar courses:

- Embryology, Anatomy and Physiology, Hematology, Virology, Human Genetics, Molecular Biology, Immunology, Cell Biology

16 hours of Chemistry, including:

- General Chemistry I and laboratory
- Organic Chemistry I and laboratory
- Organic Chemistry II and laboratory OR Biochemistry (upper division)

Students are not required but are strongly encouraged to complete all math and science requirements before being admitted to the Bachelor of Science in Cytogenetics program; some advanced science and math requirements may be taken concurrently with Clinical Laboratory Science courses. **However, all Core Curriculum courses must be completed before admission to the Cytogenetics program.** Students may not progress to clinical courses until all program requirements and professional courses are completed.



## APPLICATION PROCESS

Applicants who are enrolled in college courses at the time of [application](#) should submit an official transcript showing courses in progress. An updated transcript must be submitted upon completion of the courses. All application materials, including the application fee, official transcripts from all colleges/universities attended, and supporting documents must be submitted to the Application Center by **June 1** for fall admission.

Applicants are encouraged to seek advisement from the Health Professions Welcome Center at (866) 802-6288 (toll-free) or (210) 567-8569. For additional information, see the policies and procedures in the School of Health Professions section (p. 257) of the *UT Health Science Center Catalog*: <http://studentservices.uthscsa.edu/pdf/Catalog2010-2011.pdf>

## PROGRAM COSTS

Tuition, equipment, required fees and expenses for the program are detailed in the *HSC Catalog*. There is no on-campus housing at the HSC and program expenses do not reflect day-to-day living expenses. In addition to the required tuition and fees of approximately \$5,711 (in-state students), costs for other expenses such as textbooks, course manuals, equipment, scrubs/uniforms, and supplies are approximately \$808. Travel and living expenses for local and out-of-town clinical practicums are not included in this estimate.

## CYTOGENETICS CURRICULUM

Fall Semester	Credit Hours
CLSC 4035 - Introduction to Molecular Diagnostics	1.5
CLSC 4040 - Human Genetics	2.0
CLSC 4041 - Clinical Cytogenetics	4.0
CLSC 4042 - Hematology for the Geneticist	1.0
CLSC 4043 - Cytogenetics Techniques	4.0
CLSC 4044 - Current Topics in Genetics	1.0
CLSC 4092 - Management I	1.0
<b>Semester Total</b>	<b>14.5</b>
Spring Semester	
CLSC 4045 - Clinical Cytogenetics Laboratory I	5.0
CLSC 4046 - Clinical Cytogenetics Laboratory II	5.0
CLSC 4047 - Clinical Cytogenetics Laboratory III	5.0
<b>Semester Total</b>	<b>15.0</b>
Summer Semester	
CLSC 4048 - Clinical Cytogenetics Laboratory IV	5.0
CLSC 4049 - Cytogenetics Laboratory Practices	1.5
<b>Semester Total</b>	<b>6.5</b>
<b>Program Total</b>	<b>36.0</b>

## CONTACT INFORMATION

### School of Health Professions Welcome Center

E-mail: [SHPwelcome@uthscsa.edu](mailto:SHPwelcome@uthscsa.edu)

Phone: 210-567-8744 or toll free 1-866-802-6288

<http://SHPwelcome.uthscsa.edu>

### Department of CLS/Cytogenetics Program

Phone: (210) 567-8860

<http://www.uthscsa.edu/SHP/cyto>

### Office of Student Services Application Center

E-mail: [AppCenter@uthscsa.edu](mailto:AppCenter@uthscsa.edu)

Phone: 210-567-2633

[http://studentservices.uthscsa.edu/prospects\\_application\\_center.aspx](http://studentservices.uthscsa.edu/prospects_application_center.aspx)