



The University of Texas MD Anderson Cancer Center
UTHealth Graduate School of Biomedical Sciences

18 Characteristics of Texas Public Doctoral Programs

December 15, 2019

THE UNIVERSITY OF TEXAS
**MD Anderson
Cancer Center**



UTHealth[®]
The University of Texas
Health Science Center at Houston

Graduate School of Biomedical Sciences

For additional information contact:

Ms. Nguyen K. Cao

Sr. Data Analyst

Nguyen.K.Cao@uth.tmc.edu

(713) 500-9884

Forward

In January, 2009, the Texas Higher Education Coordinating Board (THECB) created a rule (Section 5.51, *Publishing of Doctoral Program Data*¹) to implement the Board's adoption of a recommendation from its Graduate Education Advisory Committee (GEAC). The rule requires institutions to provide information regarding 18 Characteristics of Doctoral Programs² identified by the GEAC and to publish the information on their websites by December 15 of each year. This data is then to be updated annually. The goal of this rule is to provide the public, including prospective students, employers, policy makers, faculty members and others, with this information for ongoing evaluation and quality improvements.

The 18 Characteristics on which institutions are to report are indicated below and the data for The University of Texas Graduate School of Biomedical Sciences at Houston are found in the body of this report.

¹Texas Administrative Code

<u>TITLE 19</u>	EDUCATION
<u>PART 1</u>	TEXAS HIGHER EDUCATION COORDINATING BOARD
<u>CHAPTER 5</u>	RULES APPLYING TO PUBLIC UNIVERSITIES AND HEALTH-RELATED INSTITUTIONS OF HIGHER EDUCATION IN TEXAS
<u>SUBCHAPTER C</u>	APPROVAL OF NEW ACADEMIC PROGRAMS AND ADMINISTRATIVE CHANGES AT PUBLIC UNIVERSITIES, HEALTH-RELATED INSTITUTIONS, AND ASSESSMENT OF EXISTING DEGREE PROGRAMS
Rule §5.51	Publishing of Doctoral Program Data

Each public university and health-related institution with one or more doctoral programs on its program inventory shall collect and publish information on its website regarding the "18 Characteristics of Doctoral Education" as approved by the Board, on a schedule determined by the Commissioner. Each institution must develop and implement a plan for using the 18 Characteristics for ongoing evaluation and quality improvement of each doctoral program.

Source note: The provisions of this §5.51 adopted to be effective March 2, 2009, 34 TexReg 1421

²Programs included only if in existence 3 or more years - program is defined at the 8-digit CIP code level

1 Number of Degrees per Year

For each of the three most recent years, average of the number of degrees awarded per academic year

2 Graduation Rates

For each of the three most recent years, average of the percent of first-year doctoral students³ who graduated within ten years

3 Average Time to Degree

For each of the three most recent years, average of the graduates' time to degree⁴

4 Employment Profile (in field within one year of graduation)

For each of the three most recent years, the number and percent of graduates by year employed, those still seeking employment, and unknown

5 Admissions Criteria

Description of admission factors

6 Percentage Full-Time Students

FTS⁵ / number students enrolled (headcount) for last three fall semesters

7 Average Institutional Financial Support Provided

For those receiving financial support, the average monetary institutional support provided per full-time graduate student for the prior year from assistantships, scholarships, stipends, grants, and fellowships (does not include tuition or benefits)

³First-year doctoral students: Those students who have matriculated as doctoral students with a doctoral degree objective

⁴For each academic year, the time to degree is defined as beginning the year students matriculated with a doctoral degree objective until the year they successfully defend their dissertation research

⁵Definition of full-time student (FTS) is institutional by program

8 Percentage Full-Time Students with Institutional Financial Support

In the prior year, the number of FTS with at least \$1,000 of annual support/the number of FTS

9 Number of Core Faculty⁶

Number of core faculty in the prior year

10 Student-Core Faculty Ratio

For each of the three most recent years, average of full-time student equivalent (FTSE) / average of full-time faculty equivalent (FTFE) of core faculty

11 Core Faculty Publications

For each of the three most recent years, average of the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, and notices of discoveries filed/patents issued per core faculty member

12 Core Faculty External Grants

For each of the three most recent years, average of the number of core faculty receiving external funds, average external funds per faculty, and total external funds per program per academic year⁷

13 Faculty Teaching Load

Total number of semester credit hours in organized teaching courses taught per academic year by core faculty divided by the number of core faculty

⁶Core Faculty: Full-time tenured and tenure-track faculty who teach 50 percent or more in the doctoral program or other individuals integral to the doctoral program who can direct dissertation research

⁷All external funds received by core faculty from any source including research grants, training grants, gifts from foundations, etc., reported as expenditures

14 Faculty Diversity

Core faculty by ethnicity (White, Black, Hispanic, Other) and gender

15 Student Diversity

Enrollment headcount by ethnicity (White, Black, Hispanic, Other) and gender

16 Date of Last External Review

Date of last formal external review

17 External Program Accreditation

Name of body and date of last program accreditation review

18 Student Publications/Presentations

For the three most recent years, the number of discipline-related refereed papers/publications, juried creative/performance accomplishments, book chapters, books, and external presentations per year by student FTE

Preface

The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences at Houston (GSBS) is operated jointly by two University of Texas components located in the Texas Medical Center in Houston: The University of Texas Health Science Center at Houston and MD Anderson Cancer Center. GSBS doctoral degrees are awarded jointly by these two parent institutions.

Faculty members with primary appointments at one of the schools (i.e., Medicine, Dentistry, Public Health, or Biomedical Informatics) of the UTHealth Science Center (UTHealth), MD Anderson Cancer Center (MDACC), or Texas A&M University Health Science Center Institute for Biosciences and Technology (TAMU-IBT) with appropriate expertise and interest in graduate education are admitted to the GSBS Faculty. Graduate Programs are then organized by the research interests and expertise of faculty members rather than by the departments or operating units in which they hold their appointments at UTHealth or MDACC. Our Programs are thus operated by groups of faculty members from multiple departments at the two parent institutions with common research interests and educational goals.

GSBS reorganized its programs in 2017 and, as a result, some programs are being phased out. Students affiliated with phased-out programs have “informal associations” with current programs so that they have a community of faculty and students with which to interact. For this THECB report, students enrolled in phased-out programs are reported in programs with which they are informally associated. Our current programs listed below:

- Biochemistry and Cell Biology
- Cancer Biology
- Genetics and Epigenetics
- Immunology
- Medical Physics
- Microbiology and Infectious Diseases
- Neuroscience
- Quantitative Sciences
- Therapeutics and Pharmacology

Reporting Notes and Methodology

(1) First-Year Students. First-year students undergo three research tutorials and are not solicited for publications but are counted towards the total headcount of students for all other quantitative measures of the 18 Characteristics reported here.

(2) Faculty Membership in Multiple Programs. Since contemporary biomedical sciences are increasingly interdisciplinary, some GSBS faculty members have interests and appropriate credentials in more than one discipline and may thus be members of more than one graduate Program if they agree to participate fully in programmatic instruction and other activities. In cases where an individual is a member of more than one Program, his/her membership, publications, grant funding, and related parameters are reported fully for all Programs in which he/she participates, since he/she has agreed to participate in all affiliated Programs and is thus fully available as an educational resource for students in each Program. Because of this reporting method, the sum of the faculty members in all Programs may differ from the total number of faculty members reported elsewhere and as indicated on our website and in other materials.

For perspective, 66% of our faculty members are affiliated with a single graduate Program (including the Interdisciplinary Biomedical Sciences Program), and 34% with two or more graduate Programs.

(3) Designation of Core Faculty. GSBS has two types of faculty appointments: Regular and Associate. Both types of members may participate in didactic teaching, serve on student advisory, supervisory, and examining committees, and offer research tutorials to first-year students. The only difference is that Regular members may serve as the major supervisor for the Ph.D. research project and Associate members may not. Since the Texas Higher Education Coordinating Board (THECB) reporting guidelines define Core Faculty as “individuals integral to the doctoral program who can direct dissertation research,” we have included only our Regular members when reporting the 18 Characteristics in this report.

For perspective, our Regular Members have been 72, 72, and 73% of our total (i.e., Regular plus Associate members) faculty membership over the past three years from which the data in this report are derived. Because of this reporting method, the sum of Core Faculty members reported for our graduate Programs in this report may differ from the *total* numbers (i.e., Regular and Associate members) reported elsewhere.

(4) M.D./Ph.D. Students. Reported data do *not* include students receiving the Ph.D. as part of our M.D./Ph.D. Program. For perspective, M.D./Ph.D. students generally comprise approximately 9% of the total GSBS enrollment.

(5) Designation of Reporting Years/Periods. Throughout this report the reporting period/year is indicated for each of the 18 Characteristics as follows:

- Academic Year: Continuous Fall, Spring, and Summer Semesters
- Fiscal Year: September 1st – August 31st of the following calendar year
- Calendar Year: January 1st – December 31st of a given year

Table of Contents

Characteristic	Page
1. Number of Degrees per Year	1
2. Graduation Rates	2
3. Average Time-to-Degree	3
4. Employment Profile (in field within one year of graduation)	5
5. Admissions Criteria	7
6. Percentage of Full-Time Students	8
7. Average Institutional Financial Support Provided	9
8. Percentage of Full-Time Students with Institutional Support	9
9. Number of Core Faculty	10
10. Student – Core Faculty Ratio	11
11. Core Faculty Publications	12
12. Core Faculty External Grants	14
13. Faculty Teaching Load	16
14. Faculty Diversity	17
15. Student Diversity.....	19
16. Date of Last External Review	21
17. External Program Accreditation.....	21
18. Student Publications/Presentations	22

1. Number of Degrees per Year

The total number of Ph.D. degrees awarded for 2016-2017, 2017-2018, and 2018-2019 academic years were 74, 59, and 45 respectively. The numbers of degrees awarded to students in each of our programs are indicated in Table 1 below.

Table 1

Program	2016-17
Biochemistry and Molecular Biology	5
Biostatistics, Bioinformatics, and Systems Biology	6
Cancer Biology	16
Cell and Regulatory Biology	-
Epigenetics and Molecular Carcinogenesis	4
Experimental Therapeutics	4
Genes and Development	6
Human and Molecular Genetics	2
Immunology	5
Interdisciplinary Biomedical Sciences	1
Medical Physics	11
Microbiology and Molecular Genetics	4
Neuroscience	10
Total Ph.D. Degrees Awarded	74

New Program Structure

Program	2017-18	2018-19
Biochemistry and Cell Biology	5	6
Cancer Biology	12	6
Genetics and Epigenetics	16	8
Immunology	4	4
Medical Physics	5	7
Microbiology and Infectious Diseases	5	8
Neuroscience	7	3
Quantitative Sciences	2	2
Therapeutics and Pharmacology	3	1
Total Ph.D. Degrees Awarded	59	45

2. Graduation Rates

For each of the past three academic years 2016-2017, 2017-2018, and 2018-2019 the percentages of total graduates who received the Ph.D. degree within ten years of first enrolling with a doctoral degree objective were 100% for all three years.

Table 2

Program	Graduation Rate (%)
	2016-17
Biochemistry and Molecular Biology	100
Biostatistics, Bioinformatics, and Systems Biology	100
Cancer Biology	100
Cell and Regulatory Biology	N/A
Epigenetics and Molecular Carcinogenesis	100
Experimental Therapeutics	100
Genes and Development	100
Human and Molecular Genetics	100
Immunology	100
Interdisciplinary Biomedical Sciences	100
Medical Physics	100
Microbiology and Molecular Genetics	100
Neuroscience	100
Virology and Gene Therapy	N/A
Overall Rate for All Graduates	100

New Program Structure

Program	Graduation Rate (%)	
	2017-18	2018-19
Biochemistry and Cell Biology	100	100
Cancer Biology	100	100
Genetics and Epigenetics	100	100
Immunology	100	100
Interdisciplinary Biomedical Sciences	N/A	N/A
Medical Physics	100	100
Microbiology and Infectious Diseases	100	100
Neuroscience	100	100
Quantitative Sciences	100	100
Therapeutics and Pharmacology	100	100
Overall Rate for All Graduates	100	100

(N/A = No Program Ph.D. graduates for the indicated year)

3. Average Time-to-Degree

The average time-to-degree for students in each of our programs are provided in Table 3 below. Times do *not* include any leaves of absence for medical or personal reasons. Indicated times were calculated from the start of the first semester in which the student enrolled with a doctoral intent until the student successfully defends his/her dissertation research. Technically, degrees are only awarded at the end of a semester. However, many students complete all degree requirements and begin employment (including postdoctoral positions) before the end of the semester in which they graduated. The number of degrees awarded in each Program for the indicated years is indicated in parentheses.

Table 3

Program	Average Time to Degree in Years
	2016-17
Biochemistry and Molecular Biology	5.2 (5)
Biostatistics, Bioinformatics, and Systems Biology	4.7 (6)
Cancer Biology	5.3 (16)
Cell and Regulatory Biology	-
Epigenetics and Molecular Carcinogenesis	6.4 (4)
Experimental Therapeutics	5.8 (4)
Genes and Development	6.9 (6)
Human and Molecular Genetics	6.6 (2)
Immunology	5.7 (5)
Interdisciplinary Biomedical Sciences	6.0 (1)
Medical Physics	6.0 (11)
Microbiology and Molecular Genetics	6.0 (4)
Neuroscience	5.9 (10)
Average Time for All Graduates	5.4

Table 3 (continue) – New Program Structure

Program	Average Time to Degree in Years	
	2017-18	2018-19
Biochemistry and Cell Biology	5.2 (5)	5.8 (6)
Cancer Biology	5.5 (12)	4.9 (6)
Genetics and Epigenetics	5.8 (16)	5.9 (8)
Immunology	4.4 (4)	5.9 (4)
Interdisciplinary Biomedical Sciences	N/A	N/A
Medical Physics	4.8 (5)	5.1 (7)
Microbiology and Infectious Diseases	6.2 (5)	5.6 (8)
Neuroscience	4.4 (7)	5.1 (3)
Quantitative Sciences	5.2 (2)	4.4 (2)
Therapeutics and Pharmacology	4.8 (3)	6.2 (1)
Average Time for All Graduates	5.3	5.5

(N/A = No Program Ph.D. graduates for the indicated year)

4. Employment Profile

In most cases, employment status in the field of study within the year immediately following graduation was obtained from graduates at the time they completed degree requirements. Students who were uncertain of their impending employment status at the time of graduation were contacted within the following year to obtain their employment status. The employment status in their respective fields within one year of graduation is listed for each of our programs in Table 4 below.

Table 4

Program	2016-17	
	N	%
Biochemistry and Molecular Biology	3 ¹ /4	75
Biostatistics, Bioinformatics, and Systems Biology	6/6	100
Cancer Biology	14 ^{1,1} /16	88
Cell and Regulatory Biology	-	-
Epigenetics and Molecular Carcinogenesis	4 ¹ /5	80
Experimental Therapeutics	2 ^{1,1} /4	50
Genes and Development	6/6	100
Human and Molecular Genetics	2/2	100
Immunology	5/5	100
Interdisciplinary Biomedical Sciences	1/1	100
Medical Physics	11/11	100
Microbiology and Molecular Genetics	3 ³ /4	75
Neuroscience	9 ⁶ /10	90
All Graduates	66/74	89

New Program Structure

Program	2017-18		2018-19	
	N	%	N	%
Biochemistry and Cell Biology	3 ^{1,5} /5	60	4 ^{1,1} /6	67
Cancer Biology	9 ^{1,1,1} /12	75	3 ^{1,1,1} /6	50
Genetics and Epigenetics	13 ^{1,1,1} /16	81	6 ^{1,1} /8	75
Immunology	2 ^{1,6} /4	50	3 ¹ /4	75
Interdisciplinary Biomedical Sciences	-	-	-	-
Medical Physics	4 ¹ /5	80	5 ^{1,1} /7	71
Microbiology and Infectious Diseases	3 ^{1,1} /5	60	7 ⁴ /8	88
Neuroscience	7/7	100	2 ¹ /3	67
Quantitative Sciences	2/2	100	2/2	100
Therapeutics and Pharmacology	2 ¹ /3	67	1/1	-
All Graduates	45/59	76	32/45	71

¹Status of unemployed graduate unknown

²Graduate employed but in non-discipline-related field

³Unemployed graduate seeking employment but still within 1 year of graduation

⁴Graduate unemployed due to medical leave

⁵Graduate currently not seeking employment

⁶Graduate is a continuing student (i.e. seeking medical, or law degree)

(For the number, N, in the above table the denominator indicates the number of Ph.D. degrees awarded in each Program and the numerator indicates the number of graduates employed within the year immediately following graduation. In the great majority of cases students have secured a position by the time they graduate.)

5. Admissions Criteria

The basic admissions criteria are the same for all doctoral students. Applicants must have a bachelor's degree or its equivalent from an accredited institution, and all applicants are required to have a solid background in the basic sciences. While not absolutely required it is recommended that this background include:

Biology - a minimum of two semesters (including a course in introductory biology)

Biochemistry - a minimum of one semester (with prerequisite organic chemistry)

Calculus - a minimum of one semester

Physics - a minimum of two semesters

Undergraduate preparation that includes rigorous upper-level science courses or courses utilizing calculus is preferred. An M.S. degree is *not* required for admission to the Ph.D. programs.

Applicants are generally expected to have a grade point average of at least 3.0 on a scale of 4.0 on all undergraduate and graduate-level work taken previously (particularly in the recommended coursework listed above), although an applicant's GPA is not used as an absolute criterion to either exclude or guarantee admission. For perspective, the average undergraduate GPA of students entering the Ph.D. program in recent years has been 3.5, although there is considerable variation allowed by the GSBS Admissions Committee.

Applicants to the umbrella biomedical sciences MS and PhD programs are not required to take the General Test of the Graduate Record Exam (GRE). However, applicants to the Medical Physics program are required to take the GRE General Test. A Subject Test is not required. Applicants to the programs in Medical Physics typically score at least in the 50th percentile on the GRE.

The GSBS Admissions Committee considers each applicant's overall academic record and the factors indicated below in evaluating his/her application for admission:

- Previous research experience and accomplishments, including involvement in research projects and publications, participation in science fairs, and enrollment in laboratory and research-based courses;
- Expressed commitment to a career involving biomedical research;
- Undergraduate grade point average;
- Performance in undergraduate courses in the biological and physical sciences and mathematics;
- Trends in academic performance;
- Degree of difficulty of undergraduate academic program;
- Previous graduate-level study;
- Honors and awards for academic achievement;
- Performance on the Graduate Record Examinations (if required) and for international applicants, the Test of English as a Foreign Language (TOEFL);

- Success in overcoming socio-economic and educational disadvantages;
- Multi-lingual proficiency (for international applicants);
- Non-academic responsibilities, such as employment and child-rearing;
- Involvement in community activities;
- Race and/or ethnicity

Offers of admission are made based upon the overall consideration of all the above factors rather than on any single metric.

6. Percentage of Full-Time Students

The Graduate School does not allow students to enroll in the Ph.D. program on a part-time basis. The percentage of full-time students was thus 100% for each of our programs for each of the past three years.

7. Average Institutional Financial Support Provided

All doctoral students enrolled in each of the Graduate School's programs are appointed as Graduate Research Assistants (GRA's) and receive a stipend, tuition, and medical benefits. All students receive identical stipends and health benefits and full tuition regardless of funding source (e.g., university funds, faculty advisors' research grants, training grants, individual fellowships and scholarships, etc.). For the past three academic years, stipends (*not* including tuition and benefits) provided to all Ph.D. students were:

- 2016-17 - \$29,000 per year
- 2017-18 - \$29,000 per year
- 2018-19 - \$32,000 per year

In addition to stipends provided to all students, GSBS offers a number of competitive financial awards based on academic achievements, research accomplishments, and/or other meritorious achievements. These financial payments/awards are in addition to the standard GRA stipend noted above that all doctoral students receive. In the most recent academic year (2018-19) the School made such awards to 92 students, ranging from \$100 to \$8,250 with the average amount being \$3,417.

In addition to stipends and achievement awards, the Graduate School awards travel funds to students presenting their research at professional meetings. Last year (2018-2019) the School made travel awards to 87 students totaling \$42,745, with an average award of \$491.

8. Percentage of Full-time Students with Institutional Support

In each of the past three academic years, the percentage of full-time doctoral students with at least \$1,000 in institutional support was 100% for our Programs.

9. Number of Core Faculty

The numbers of core faculty members in each graduate Program for the past three academic years are presented below in Table 5. Core faculty members are defined as Regular Members of the Graduate School Faculty who can direct dissertation research.

Table 5

Program	2016-17
Biochemistry and Molecular Biology	32
Biostatistics, Bioinformatics, and Systems Biology	42
Cancer Biology	120
Cell and Regulatory Biology	34
Clinical and Translational Sciences	56
Epigenetics and Molecular Carcinogenesis	15
Experimental Therapeutics	38
Genes and Development	31
Human and Molecular Genetics	36
Immunology	49
Interdisciplinary Biomedical Sciences	9
Medical Physics	36
Microbiology and Molecular Genetics	25
Neuroscience	60

New Program Structure

Program	2017-18	2018-19
Biochemistry and Cell Biology	93	97
Cancer Biology	116	113
Genetics and Epigenetics	95	98
Immunology	46	60
Interdisciplinary Biomedical Sciences	8	10
Medical Physics	37	36
Microbiology and Infectious Diseases	26	27
Neuroscience	58	58
Quantitative Sciences	69	64
Therapeutics and Pharmacology	43	48

10. Student – Core Faculty Ratio

The ratio of full-time students enrolled (by headcount) to core faculty members (by headcount) in each of our programs is presented below in Table 6 for each of the past three academic years.

The mean student/faculty ratio for all GSBS students and faculty over the past three years is 0.5.

Table 6

Program	2016-17
Biochemistry and Molecular Biology	0.3
Biostatistics, Bioinformatics, and Systems Biology	0.5
Cancer Biology	0.3
Cell and Regulatory Biology	0.4
Clinical and Translational Sciences	0.1
Epigenetics and Molecular Carcinogenesis	0.7
Experimental Therapeutics	0.4
Genes and Development	1.0
Human and Molecular Genetics	0.3
Immunology	0.6
Interdisciplinary Biomedical Sciences	5.2
Medical Physics	1.0
Microbiology and Molecular Genetics	0.9
Neuroscience	0.5
Overall Ratio (Total Students/Total Faculty)	0.5

New Program Structure

Program	2017-18	2018-19
Biochemistry and Cell Biology	0.3	0.3
Cancer Biology	0.5	0.5
Genetics and Epigenetics	0.6	0.5
Immunology	0.8	0.7
Interdisciplinary Biomedical Sciences	0.8	0.3
Medical Physics	1.0	1.0
Microbiology and Infectious Diseases	1.1	1.0
Neuroscience	0.5	0.5
Quantitative Sciences	0.4	0.5
Therapeutics and Pharmacology	0.3	0.3
Overall Ratio (Total Students/Total Faculty)	0.5	0.5

11. Core Faculty Publications

The average numbers of core faculty publications (as defined by the THECB) for each of our programs are presented below in Table 7 for each of the past three calendar years (i.e., January 1st – December 31st). When viewing results of this nature it should be kept in mind that significant differences may exist between the length of time required to generate the data for publications and presentations in different disciplines, and that no assessment of publications' impact was conducted. Without a much more detailed analysis, including quality assessments, the most valid comparative use of such information is therefore between graduate programs in similar disciplines at other institutions, rather than for comparisons between Programs in different disciplines.

Overall, the average value of core faculty publications as defined by the THECB for GSBS faculty members is 7.8 per faculty member per year for the three years illustrated indicating a high level of faculty research productivity.

Table 7

Program	2016-2017
Biochemistry and Molecular Biology	3.9
Biostatistics, Bioinformatics, and Systems Biology	11.3
Cancer Biology	9.1
Cell and Regulatory Biology	4.4
Clinical and Translational Sciences	10.9
Epigenetics and Molecular Carcinogenesis	3.7
Experimental Therapeutics	9.3
Genes and Development	6.0
Human and Molecular Genetics	8.7
Immunology	7.9
Interdisciplinary Biomedical Sciences	11.8
Medical Physics	7.1
Microbiology and Molecular Genetics	4.6
Molecular Pathology	-
Neuroscience	6.0
Average Publications for All GSBS Core Faculty	7.7

Table 7 (continue) - New Program Structure

Program	2017-2018	2018-19
Biochemistry and Cell Biology	4.8	5.2
Cancer Biology	9.2	8.3
Genetics and Epigenetics	6.8	6.2
Immunology	6.6	10.3
Interdisciplinary Biomedical Sciences	20.3	25.0
Medical Physics	7.7	7.8
Microbiology and Infectious Diseases	4.1	4.1
Neuroscience	5.6	6.0
Quantitative Sciences	14.1	14.0
Therapeutics and Pharmacology	9.2	7.2
Average Publications for All GSBS Core Faculty	7.7	7.8

(Values are the averages per core faculty member of the sum of all discipline – related refereed papers, books, book chapters, and notices of discoveries filed/patents for the three indicated years.)

12. Core Faculty External Grants

The average number of core faculty receiving external funds, the average external funds per faculty, and the total external funds for each of the past three years for our Programs are provided below in Table 8. Please note that the data in Table 8 is provided as *expenditures* per fiscal year. Figures are total research expenditures per faculty member as defined by the THECB for purposes of this report (i.e., expenditures from research grants, training grants, gifts from foundations, etc., reported as expenditures for research). (Note: N = total number of faculty in each Program and the number in parentheses indicates those with reported research funding/expenditures. Average expenditures/faculty was calculated on the basis of total Program faculty.)

When viewing results of this nature it should be kept in mind that significant differences may exist between the costs of conducting research in various disciplines. Thus, the most appropriate comparative use of this data is between graduate programs in similar disciplines at other institutions, rather than for comparisons between Programs in different disciplines.

Table 8a – FY 2017 (September 1, 2016 – August 31, 2017)

Core Faculty Expenditures by Program for FY '17			
GSBS Program Name	N	Total Expenditures	Average Expenditures/Faculty
Biochemistry and Molecular Biology	32 (28)	15,565,718	555,919
Biostatistics, Bioinformatics, and Systems Biology	42 (39)	26,029,023	667,411
Cancer Biology	120 (115)	130,332,573	1,133,327
Cell and Regulatory Biology	34 (29)	15,418,847	531,684
Clinical and Translational Sciences	56 (53)	89,939,171	1,696,965
Epigenetics and Molecular Carcinogenesis	15 (14)	10,748,310	767,736
Experimental Therapeutics	38 (34)	46,665,103	1,372,503
Genes and Development	31 (30)	33,593,105	1,119,770
Human and Molecular Genetics	36 (34)	31,113,753	915,110
Immunology	49 (48)	53,222,840	1,108,809
Interdisciplinary Biomedical Sciences	9 (5)	19,880,308	3,976,062
Medical Physics	36 (26)	10,165,412	390,977
Microbiology and Molecular Genetics	25 (21)	9,663,268	460,156
Neuroscience	60 (51)	31,575,247	619,123
All GSBS Core Faculty	586 (530)	523,912,678	994,142

Table 8b – FY 2018 (September 1, 2017 – August 31, 2018)
(New Program Structure)

Core Faculty Expenditures by Program for FY '18			
GSBS Program Name	N	Total Expenditures	Average Expenditures/Faculty
Biochemistry and Cell Biology	93 (86)	53,581,514	623,041
Cancer Biology	116 (113)	119,212,278	1,054,976
Genetics and Epigenetics	95 (87)	87,353,258	981,497
Immunology	46 (45)	45,628,258	1,013,961
Interdisciplinary Biomedical Sciences	8 (7)	10,630,863	1,518,695
Medical Physics	37 (25)	11,329,654	453,186
Microbiology and Infectious Diseases	26 (24)	10,440,108	435,005
Neuroscience	58 (52)	31,158,400	599,200
Quantitative Sciences	69 (66)	41,294,444	625,673
Therapeutics and Pharmacology	43 (40)	38,737,368	968,434
All GSBS Core Faculty	591 (545)	449,366,145	821,510

Table 8c – FY 2019 (September 1, 2018 – August 31, 2019)

Core Faculty Expenditures by Program for FY '19			
GSBS Program Name	N	Total Expenditures	Average Expenditures/Faculty
Biochemistry and Cell Biology	97 (86)	54,389,329	632,434
Cancer Biology	113 (109)	123,815,898	1,135,926
Genetics and Epigenetics	98 (89)	84,446,411	948,836
Immunology	60 (59)	70,779,787	1,199,657
Interdisciplinary Biomedical Sciences	10 (5)	2,031,780	406,356
Medical Physics	36 (26)	13,329,551	512,675
Microbiology and Infectious Diseases	27 (22)	12,813,510	582,432
Neuroscience	58 (51)	33,660,114	660,002
Quantitative Sciences	64 (60)	39,995,714	666,595
Therapeutics and Pharmacology	48 (44)	40,812,745	927,562
All GSBS Core Faculty	611 (551)	476,074,840	864,019

13. Faculty Teaching Load

Faculty teaching loads in organized teaching courses (does *not* include dissertation or other research courses) was calculated by dividing the total number of teaching hours taught by Program faculty by the number of core faculty members (as semester credit hours/core faculty member) for each of our programs and are indicated in Table 9 below for the 2016-2017, 2017-2018, and 2018-2019 academic years.

Table 9

Program	Semester Credit Hours/Core Faculty Member
	2016-17
Biochemistry and Molecular Biology	3.0
Biostatistics, Bioinformatics, and Systems	5.7
Cancer Biology	2.4
Cell and Regulatory Biology	3.1
Clinical and Translational Sciences	2.4
Epigenetics and Molecular Carcinogenesis	6.6
Experimental Therapeutics	2.5
Genes and Development	3.2
Human and Molecular Genetics	3.0
Immunology	2.4
Interdisciplinary Biomedical Sciences	1.0
Medical Physics	7.8
Microbiology and Molecular Genetics	3.2
Molecular Pathology	-
Neuroscience	5.2

New Program Structure

Program	Semester Credit Hours/Core Faculty Member	
	2017-18	2018-19
Biochemistry and Cell Biology	3.7	3.4
Cancer Biology	2.9	2.6
Genetics and Epigenetics	2.9	3.7
Immunology	4.7	3.3
Interdisciplinary Biomedical Sciences	2.0	4.8
Medical Physics	6.8	7.1
Microbiology and Infectious Diseases	2.8	5.1
Neuroscience	3.2	3.2
Quantitative Sciences	4.2	5.6
Therapeutics and Pharmacology	4.7	3.6

14. Faculty Diversity

The gender and self-identified ethnicities of core faculty members in each of our Programs are presented in Table 10 below for the 2018-19 academic year.

Table 10a – Faculty Gender

Program	Gender		Total
	Female	Male	
Biochemistry and Cell Biology	22	75	97
Cancer Biology	32	81	113
Genetics and Epigenetics	31	67	98
Immunology	22	38	60
Interdisciplinary Biomedical Sciences	4	6	10
Medical Physics	7	29	36
Microbiology and Infectious Diseases	8	19	27
Neuroscience	14	44	58
Quantitative Sciences	14	50	64
Therapeutics and Pharmacology	16	32	48
Total GSBS Core Faculty	170	441	611

Table 10b – Faculty Ethnicity

Program	White	Black	Asian	Native Hawaiian & other Pacific Islander	American Indian & Alaska Native	Race Unknown	Hispanic	Foreign /Intl
Biochemistry and Cell Biology	50		30		1	1	1	16
Cancer Biology	52	1	38		1	6	4	16
Genetics and Epigenetics	43		26	1		5	5	26
Immunology	33		19				1	5
Interdisciplinary Biomedical Sciences	3		5					2
Medical Physics	19		7	1		3	3	7
Microbiology and Infectious Diseases	18	1	4			1	2	4
Neuroscience	29		14			1	1	12
Quantitative Sciences	24	1	20			3	2	18
Therapeutics and Pharmacology	19	1	19			1		8
Grand Total:	290	4	182	2	2	21	19	114

Faculty may be reported under multiple racial categories

15. Student Diversity

The gender and self-identified ethnicities of enrolled full-time doctoral students in each of our programs are presented in Table 11 below for the 2018-2019 academic year.

Table 11a – Student Gender

Program	F	M	Total
Biochemistry and Cell Biology	15	10	25
Cancer Biology	40	21	61
Genetics and Epigenetics	31	19	50
Immunology	20	21	41
Interdisciplinary Biomedical Sciences	1	2	3
Medical Physics	15	22	37
Microbiology and Infectious Diseases	22	4	26
Neuroscience	15	14	29
Quantitative Sciences	19	16	35
Therapeutics and Pharmacology	7	6	13
Total GSBS Students	185	135	320

Table 11b – Student Ethnicity

Program	White	Black	Asian	Native Hawaiian & other Pacific Islander	American Indian & Alaska Native	Race Unknown	Hispanic	Foreign/ Intl.
Biochemistry and Cell Biology	14		1		1	1	4	8
Cancer Biology	16	3	3				7	37
Genetics and Epigenetics	20	4	7		2	2	6	17
Immunology	14	3	5		1	2	3	17
Interdisciplinary Biomedical Sciences	1		1					1
Medical Physics	26					1	3	10
Microbiology and Infectious Diseases	13	3	2		1		3	7
Neuroscience	15	3	1		1	3	1	7
Quantitative Sciences	4		4			1	2	25
Therapeutics and Pharmacology	6		1		1	1	3	4
Grand Total	129	16	25		7	11	32	133

Students may be reported under multiple racial categories

16. Date of Last External Review AND 17. External Program Accreditation

Our Medical Physics Program undergoes accreditation every five years by the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP). In the most recent review conducted in April, 2018, the Program received full accreditation through December, 2023.

Our other doctoral Programs do not undergo external review by individual disciplinary accrediting boards. They are accredited as part of institutional accreditation of our parent institutions, The University of Texas Health Science Center at Houston and MD Anderson Cancer Center, by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Initial SACSCOC accreditation is awarded for five years and full reaccreditation then occurs every ten years with abbreviated, interim five-year reviews.

- The University of Texas Health Science Center was last fully reaccredited by SACS in 2010
- The University of Texas MD Anderson Cancer Center received an initial five-year accreditation in 2005 and was fully reaccredited by SACS in 2010

Both institutions had the interim five-year review in 2015 and are undergoing their ten-year review in 2021.

18. Student Publications/Presentations

The average number of publications and presentations/per student (as defined by the THECB) for each of our programs is provided in Table 12 for calendar years 2016, 2017, and 2018. When viewing results of this nature it should be kept in mind that significant differences may exist between the length of time required to generate the data for publications and presentations in different disciplines and that no attempt was made to assess the impact rating of various publications. Without a more detailed analysis, including quality measures of publications, the most valid comparative use of such information is therefore between graduate programs in similar disciplines at other institutions, and less so for comparisons between Programs in different disciplines. Overall, the average number of publications/presentations for all GSBS students in 2018 is 2.7 per year indicating that students are highly successful at publishing their graduate research.

Table 12

Program	Mean Number 2016
Biochemistry and Molecular Biology	2.1
Biostatistics, Bioinformatics, and Systems Biology	0.8
Cancer Biology	1.2
Cell and Regulatory Biology	1.8
Clinical and Translational Sciences	3.0
Epigenetics and Molecular Carcinogenesis	2.5
Experimental Therapeutics	0.7
Genes and Development	0.7
Human and Molecular Genetics	1.0
Immunology	1.8
Interdisciplinary Biomedical Sciences	2.5
Medical Physics	3.3
Microbiology and Molecular Genetics	1.2
Neuroscience	1.6
Average for all GSBS Students	1.4

Table 12 (continue) - New Program Structure

Program	Mean Number	
	2017	2018
Biochemistry and Cell Biology	2.2	3.1
Cancer Biology	1.6	3.4
Genetics and Epigenetics	1.3	2.3
Immunology	3.2	4.1
Interdisciplinary Biomedical Sciences	-	-
Medical Physics	2.8	2.2
Microbiology and Infectious Diseases	2.0	2.0
Neuroscience	2.0	2.5
Quantitative Sciences	1.3	2.4
Therapeutics and Pharmacology	0.8	2.2
Average for All GSBS Students	1.8	2.7

The mean number is the sum of discipline-related referred papers and publications, books, book chapters, and external presentations divided by the number [headcount] of current students and graduates who responded to the survey.