BAYLOR UNIVERSITY Graduate School

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Annual Report

DECEMBER 2020





An Introductory Note from Dean Lyon: *Baylor*, *COVID-19*, and the Graduate School

Very little has been normal about 2020, and that is certainly true for graduate education at Baylor. Our students have no professional meetings where they can present their research. They have fewer face-to-face classes to attend or teach. Some had laboratories or other research shut down. Upon graduation, the job market (academic and otherwise) is greatly attenuated. So, measuring these activities and comparing them with previous years makes little sense. And without such measures, there are less data to include in the Annual Report. So, we will be sharing a different Annual Report this year, focusing more on the changes in response to COVID-19, and praying that this is the only year such a reactive report will be necessary.

It's important to note one aspect of graduate education at Baylor that has not changed. Even during this pandemic, Baylor's long-term, broad Tier 1 goal of preeminence as a Christian research university and its more immediate and more narrow goal of achieving a Carnegie Classification of "Very High Research" or "R1" continues. Thus, we will still report measures of admissions, enrollment, and graduation that help Baylor move toward an R1 status.

In spite of the challenges, we are weathering the COVID-19 pandemic remarkably well, better than many anticipated and better than many other universities. Several factors are responsible for our success—Baylor planning for an almost infinite number of scenarios, leaders willing to make hard decisions, faculty successfully transitioning between modes of delivery, staff maintaining effectiveness while working from home—but I would like to note the significant but somewhat overlooked contributions of our graduate programs and students.

When Baylor abruptly moved completely online after Spring Break, we were not starting from scratch. We already had the information technology infrastructure in place to support several graduate programs, especially among our professional programs. Having this core of experienced graduate faculty and a proven technology base allowed Baylor to successfully maneuver a quick pivot to finish the spring online.

Our graduate students, who were on the whole younger and healthier than our faculty, stepped up to teach a higher proportion of our face-to-face classes this Fall than they have in previous semesters. Others helped our faculty with their online and hybrid courses. Many graduate students continued to work in Baylor's labs, supporting the research agendas of our faculty. Graduate students as teachers and researchers have been indispensable to Baylor during the pandemic.

President John Kennedy popularized the axiom "Success has a thousand fathers," and in the case of Baylor's successful response to COVID-19, those fathers—and mothers—include our graduate programs, faculty, and students.





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Table of Contents

3	Counts for Graduate Students and Programs
6	Recruiting and Retaining Excellent Students
6	Diversity
7	Graduate Student Professional Development
8	Opportunities for Graduate Student Research
9	Recognizing Outstanding Graduate Student Scholarship
10	Christian Mission and Community
11	Graduate Student Insurance
11	Retention and Graduation Rates
12	Baylor Graduates and the Pandemic Job Market
13	Funding Graduate Education
13	Scholarly Profile of Our Faculty
14	External PhD Program Assessments

Concluding Notes: The New Normal

Graduate School Deans

Graduate School Staff



3

15

17

18

Counts for Graduate Students and Programs

The number of Baylor graduate students depends on the definition of "graduate students." If the focus is on only those students under the purview of the Graduate School, then professional students in the Law School, Seminary, and Masters' students in Social Work are not counted. There are also distinctions between "head counts" and "program counts," since, for example, some students may be working on a BBA and MACC at the same time. If so, they are counted as undergrads by head count, but counted as graduate students under a program count.

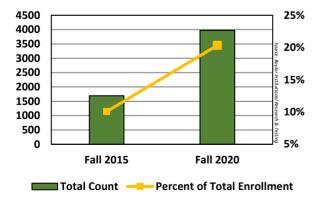
How Many Graduate Students Does Baylor Have?

By program counts, Baylor has 5,123 graduate and professional students, and when we don't include those in Law, Seminary, and Social Work, that leaves 3,972 (78%) under the purview of the Graduate School. That number is not as large as it needs to be in order for Baylor to move to R1 status, and neither does it include all of the students in our expanding programs that follow a trimester or quarter calendar, but we are making progress.

Is That More Than Last Year?

Table 1 shows that the number of graduate and professional students under the purview of the Graduate School has grown both absolutely and relatively. In 2015, 10% of Baylor's overall enrollment was under the Graduate School; today that percentage is over 20%. The drivers to our growth are our growing professional master's degrees and our increased production of research doctorates, and in different ways, both can move us toward R1.

Table 1. Program Counts of All Graduate and Professional Students in the Graduate School



Where Have We Grown?

Table 2 lists our ten largest graduate programs and illustrates two important growth trends. First is the size of our professional programs, now accounting for nine of our

ten largest graduate programs, and second is the rapid growth of our online professional programs. All of the increase in our MBA comes from our online degree. The same is true for our DPT, EdD, and DNP. This trend will continue and help provide funding for our second trend, the growth in STEM PhDs.

Table 2. Five-Year Enrollment Growth Patterns of Our Largest Programs

Program	2015	2020	Change
Business Admin. (MBA, EMBA, OMBA)	322	524	202
Comm. Sciences and Disorders (MS)	46	432	386
Learning and Organizational Change (EDD)	-	405	405
Nurse Practitioner (DNP)	12	324	312
Physical Therapy (DPT)	-	247	247
Public Health (MPH)	15	206	191
Chemistry (PHD)	64	91	27
Anesthesia Nursing (DNP)	-	81	81
Nursing Midwifery (DNP)	12	59	47
Healthcare Administration (MHA)	-	59	59

Source: Baylor Institutional Research & Testing

What about our PhD programs? The only PhD program in our top ten largest programs listed above is Chemistry. However, as shown in Table 3, Chemistry is not the only PhD program that is growing. Our strategic goals for growth are clearly visible in our increases in the STEM fields. Table 3 lists our five largest PhD programs and their growth trends.

Table 3. Five-Year Enrollment Growth Patterns of Our Largest PhD Programs

Program	2015	2020	Change
Chemistry	64	91	27
Religion	57	56	-1
Biology	23	52	29
Physics	38	47	9
English	65	38	-27

Source: Baylor Institutional Research & Testing

How Will We Grow our Research Doctorates?

Research doctorates are especially important for achieving an R1 Carnegie status. The most common research doctoral degrees are the doctorates of philosophy—the PhD. Longterm projections of Baylor's PhD production are difficult, but short-term, say for five years ahead, is a relatively straightforward modeling exercise that looks at graduation patterns in the past and applies those patterns to current enrollment. For R1 classifications, research doctorates are divided into three categories--STEM, Humanities, Social Science, and Other/Professional—and each university is ranked by the number of graduates in each category. In relation to R1 universities, Baylor is especially low in STEM graduates, but that will change during the next five years. Table 4 shows that our annual STEM graduation count should grow from 38 to 56. Little growth in predicted for the social sciences between now and 2025, though our recruitment strategies suggest greater growth in the

subsequent five years. The humanities may experience a slight decline, reflecting a faculty-driven concern about the academic job market. And finally, the PhDs in the category that Carnegie labels as "Other" should grow to 12 graduates per year.

Overall, in the next five years, we should grow from 76 PhD graduates per year to 99, approximately a 30% increase. When combined with professional research doctorates like the EdD and DSc, this PhD growth rate should be sufficient to move Baylor into the lower levels of an R1 classification in the future, but a "preeminent" or "Tier 1" level will require more. There are three ways to add PhD graduates.

The first and most efficient is to reduce attrition and graduate more current students. As described further below (page 11, Table 16), we already exceed the national average in this regard, but our goal is higher still. If we can reach the completion rates of the best research universities, we could increase our total graduates by about 20%.

Second is to add more PhD programs. Table 5 shows that this is a strategy Baylor has aggressively followed since the 1990s with a current count of 32 PhD programs. This raises the question: How many more PhD programs does Baylor need? Compared to the 31 PhD programs at Notre Dame, a Christian university with R1 credentials, we have attained a sufficient number. However, additional proposals for new PhD programs are in some level of discussion, and three new programs were added this year: Communication Sciences and Disorders, School Psychology, and Medical Anthropology.

Table 4. PhD Program Enrollment, Graduation, and Projected Graduation Counts

Research Doctoral Brogram		2020	Annual PhD Graduates	
	Research Doctoral Program	Enrollment	Current ¹	2025 ²
	Biology (PhD)	52	2.7	5
	Biomedical Studies (PhD)	13	3.0	2
	Chemistry & Biochemistry (PhD)	91	6.3	9
	Computer Science (PhD)	8	0.0	3
	Ecological, Earth, and Env. Science (PhD)	5	0.3	1
	Electrical and Comp. Engineering (PhD)	34	2.0	3
5	ENPH/KENPH (PhD)	15	4.3	4
STEM	Environmental Science (PhD) ³	29	2.0	5
S	Geology (PhD)	26	3.7	4
	Information Systems (PhD)	8	0.7	1
	Mathematics (PhD)	36	4.0	5
	Mechanical Engineering (PhD)	26	2.0	6
	Physics (PhD)	47	3.0	4
	Statistical Science (PhD)	28	4.3	4
	Total	418	38.3	56
	Church Music (PhD)	8	0.7	1
ies	English (PhD)	38	9.0	6
Humanities	History (PhD)	17	2.7	3
E	Philosophy (PhD)	30	3.3	3
로	Religion (PhD)	56	4.3	4
	Total	149	20.0	17
	Educational Psychology (PhD)	29	2.3	4
al ces	Political Science (PhD)	24	3.3	3
Social Sciences	Psychology and Neuroscience (PhD)	28	3.0	4
Sci	Sociology (PhD)	24	2.7	3
	Total	105	11.3	14
	Curriculum & Teaching (PhD)	20	2.7	4
	Entrepreneurship (PhD) ³	5	1.0	2
Other	Health Services Research (PhD) ³	6	0.0	2
o E	Higher Education Studies & Leadership (PhD)	14	1.0	2
	Social Work (PhD)	16	1.7	2
	Total	61	6.3	12
	GRAND TOTAL	733	76	99
1 Three-ve	ar annual avg. (Summer 2017-Spring 2020)		Sour	ce: Baylor Graduate School

Three-year annual avg. (Summer 2017-Spring 2020)

² Projected for 2024-25

³ New Program

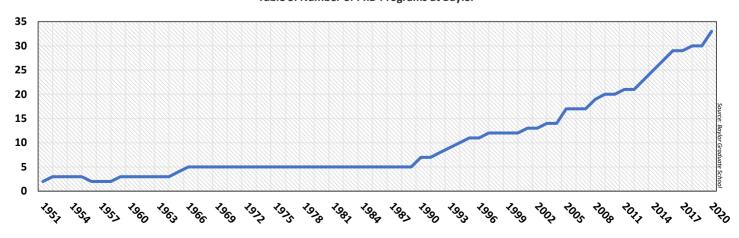
History of PhD Programs at Baylor

1951	English	2008	Ecological, Earth & Environmental Sciences
1951	Education (discontinued 1956)	2008	Information Systems
1952	Chemistry	2009	Curriculum and Teaching
1959	Psychology	2011	Electrical and Computer Engineering
1965	Physics	2011	History
1966	Religion	2013	Church Music
1990	Biomedical Studies	2013	Social Work
1990	Geology	2014	Higher Education Studies & Leadership
1992	Statistics	2014	Mechanical Engineering
1993	Church-State Studies (discontinued 1956)	2015	Environmental Science
1994	Biology	2015	Entrepreneurship
1995	Sociology	2016	Computer Science
1997	Educational Psychology	2016	Health Services Research
2001	Mathematics	2018	Preaching
2003	Philosophy	2020	Communication Sciences & Disorders
2005	Religion, Politics & Society (discontinued 2011)	2020	School Psychology
2005	Kinesiology, Exercise Nutrition & Health Promo.	2020	Anthropology
2005	Political Science		

A third path to R1 status is growing our existing PhD programs. Here the Notre Dame comparison can again be instructive. Even though the number of Baylor and Notre Dame PhD programs is almost the same, Notre Dame graduates about twice as many PhDs as Baylor and has twice as many faculty in their PhD programs. More broadly,

PhD programs in R1 universities tend to be about twice the size of Baylor's programs. For the R1 and especially for the "Tier 1/Preeminent Research University" status to which we aspire, more faculty and more doctoral students in our PhD programs is a necessity.

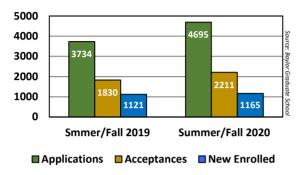
Table 5. Number of PhD Programs at Baylor



Recruiting and Retaining Academically Excellent Students

Baylor must and will recruit a larger, but still academically excellent graduate student body. Toward that goal, Table 6 shows an increase in the number of applications and incoming students from 2019 to 2020.

Table 6. Graduate Applications & Enrollment



The increase in applications reflects a growing national reputation for Baylor's graduate programs. When coupled with our lesser growth in overall graduate admissions, the result is an increasingly selective Graduate School. Table 7 shows that we have over twice as many applications as acceptances and a yield of over 50%.

Table 7. From Graduate Applications to Enrollments (2020)



Although Baylor offers almost one hundred graduate degree options, just four online professional programs generate more than half of our total applications. Table 8 shows that in terms of applications, our top five programs represent our new online initiatives.

Table 8. High-Applicant Programs

Program	2017-18*	2018-19*	2019-20*
Learning & Organizat. Change (EdD)		479	756
Physical Therapy (DPT)	221	1052	632
Communication Sci & Disorders (MS)	378	330	606
Public Health (MPH)			448
Business Administration (OMBA)	316	362	332
Clinical Psychology (PSYD)	274	274	309
Nurse Practitioner (DNP)	28	84	195
Business Administration (MBA)	197	238	183
Accounting (MACC)	164	134	143
Business Administration (EMBA)	72	101	88
Physics (PHD)	77	54	71
Performance (MM)	62	63	68

Source: Baylor Institutional Research & Testing
*Summer, Fall and Spring terms for academic years

Diversity

For more than a decade, students from minority backgrounds have totaled less than 30% of Baylor's graduate student body, slowly growing from 26% to 29% between 2008 and 2018. In the past year, that number jumped to 38%, with the largest increases seen among our African American/Black and Hispanic students (5% to 10% and 9% to 15% respectively). Predictably, the number of students who identify as white has decreased from 66% to 58%. A similar jump has occurred among our female population, growing from 50% to 62% in just two years. Why the sudden changes? We should not discount the attempt by many of our programs to increase the number of under-represented students within their departments, but the results of these efforts come slowly. The rapid increase stems from the students Baylor is reaching through our rapidly expanding online professional programs. In addition, we see the acceptance and enrollment rates among female and minority applicants match our overall rates.

Table 9. Applications, Admits, and Entering Students for 2020

	Applications	Admits	Entering
 	7,359	3,218	2,279
₹		44%	71%
Female	4,910	2,159	1,507
Fen		44%	70%
Under- presented rity (US Only)	2,207	879	616
Under- Represented Minority (US Only)		40%	70%

Source: Baylor Graduate Schoo

Language Support for International Graduate Students

Over the past five years the Graduate School offered the English for Academic Purposes (EAP) course to International ESL Graduate students, their spouses, and scholars, with the focus on improving their English oral proficiency and communication skills to achieve academic success in the context of U.S. culture. A summary of students served by the EAP course taught by Dr. Qingqing Chen this past year is included in this report.

Table 10. EAP Student Origin: Fall 2019-Spring 2020 (n=19)

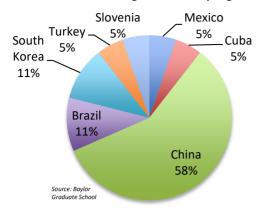


Table 11. EAP Student Classification: Fall 2019-Spring 2020 (n=19)

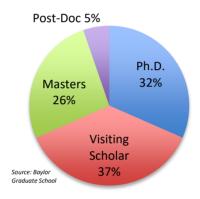
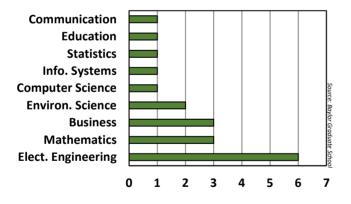


Table 12. EAP Students by Department: Fall 2019-Spring 2020 (n=19)



Based on changing needs and resources, the Graduate School will no longer offer the EAP course. Graduate School support for international teaching assistants will primarily focus on improving teaching performance. Specific focus on language proficiency will shift to the Global Gateway Program under the direction of the Center for Global Engagement, which plans to offer a new course called GBL 5201 "Teaching English for International Teaching Assistants" starting Spring semester, 2021. This course will specifically target international graduate students who are to be engaged in teaching undergraduate students.

Graduate Student Professional Development

So much has changed during 2020—yet, for graduate students much of what they need in terms of professional development remains the same. Our new students still need an orientation to graduate school; our current students still need workshops on formatting their dissertations and getting ready for the job market, as well as funding to participate in academic conferences. All of our students, from online to residential, still need community—especially a place to talk and heal from the trauma of living through a pandemic and the racial tensions that have gripped our country. At a time when the academic job market is crashing, our students especially need adaptive job search strategies and options to help them continue to thrive as we all wait for the pandemic to end and the academic job market to (hopefully) begin to normalize. The Graduate School, in response, has worked hard to continue meeting these professional development needs of our students--albeit in ways that look different from our past as we adapt to the ever-shifting present of 2020.

Even before COVID-19, the Graduate School was creating additional professional development options that would be available to a wider range of our students—online as well as residential. The reality of the significant growth of our doctoral programs means that we cannot rely on traditional in-person events to meet the professional development needs of our larger and more diverse student population.

In 2016, the Graduate School launched a writing center specifically designed to help graduate students with one of their primary concerns: how to effectively communicate their research. Because the GWC functions as a virtual consultation service, it is available to all of our students. Staffed by 5 doctoral consultants ranging from the English department to the Chemistry department, the GWC offers virtual appointments arranged by email and conducted through Zoom and Teams (or even by phone) for graduate students seeking to improve their writing skills for seminar papers, article submissions, theses and dissertation chapters, conference papers, and external grant and fellowship submissions. As of October 31, 2020, the GWC has already conducted 104 appointments with graduate students from such departments as English, Nursing, Public Health, Truett Seminary, Religion, and Environmental Studies. As the GWC continued to function even during the height of the pandemic, it has now reached a cumulative number of 363 scheduled appointments for 2020.

Grant-Writing Support for Graduate Students

Another professional development concern shared by all of our graduate students is the need to apply for external grants and fellowships. The Graduate School, in partnership with Research Office, launched the External Grant Funding Specialist program in August 2020. Two doctoral students, selected through a competitive process, are funded through the Graduate School for the sole purpose of creating resources for graduate students to find and apply for external grants and fellowships. So far, our External Grant Funding Specialists have hosted three virtual workshops (including two focused on specific grants), created a webpage connecting graduate students with grant resources, and begun working individually with students to help them find and write grants.

In the fall semester of 2020 Drs. Steve Driese and Bill Hockaday in the Geosciences Department offered two sections of Graduate School-sponsored GEO 5V90, Seminar in Grant-Writing (two credit hours) to 14 graduate students from the Departments of Geosciences, Biology, Environmental Science, and Public Health. The primary course outcome is to develop a PhD dissertation proposal, using the NSF research grant as a model, and to apply (if eligible) to the NSF Graduate Research Fellowship Program (GRFP). This year 7 of the graduate students enrolled in the course have applied for the GRFP.



Graduate students from the departments of Biology, Environmental Science, Geoscience, and Public Health attend a Grant-Writing Seminar, co-taught by Dr. Steven Driese and Dr. Bill Hockaday.

Opportunities for Graduate Student Research

As with so much of 2019-2020, this academic year looks different. Our students experienced delays in journal acceptances and publications, just like the rest of the 2020 academic world. However, our students still did a remarkable job in remaining active in publication. Our students (apart from those in Physics) published 314 academic articles, chapters, and book reviews. Although students in 16 of our PhD programs, including Chemistry, HHPR, and Religion cumulatively published 10 or more academic papers during the 2019-2020 academic year,

the Higher Education Studies and Leadership program as well as STEM students in Ecological, Earth, and Environmental studies, Environmental Science, and business students in Entrepreneurship published the most papers per individual students, averaging 1 or more papers a year for each student in the program. Because of the successful initiative of the Physics department to include graduate students in the CERN laboratory experiments near Geneva, our Physics students publish a remarkable amount—477 papers last year alone which averages to more than 10 publications a year for each student in the program.

Table 13. Peer-Reviewed Publications by Graduate Students in Professional Journals

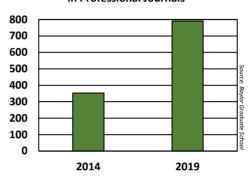


Table 14. Top Doctoral Programs for Annual Student Publications (2019)

Doctoral Program	Total Student Publications	Per Capita
Physics	477	10.15
Higher Education Studies and Leadership	10	1.67
Ecological, Earth, and Environmental Sciences	6	1.20
Environmental Science	32	1.14
Entrepreneurship	6	1.00

Source: Baylor Graduate School

Recognition of Outstanding Graduate Student Research

Although many of our students could not travel to present their research, 29 students representing 13 different departments presented their research through the Graduate Student Association (GSA) annual Research Showcase. It also looked different this year—instead of showcasing posters in Barfield Drawing room for faculty judges to assess, students uploaded images of their posters to a shared box folder that faculty judges then perused. Awards were offered in each area, STEM, Humanities, Social Science, as well as a People's Choice award. Both winning posters and participants were then showcased broadly through the GSA Twitter account.



Recognizing Outstanding Graduate Student Scholarship

In recognition of the growing quality of graduate student research, the Graduate School offers several competitive awards and fellowships. Despite the disruption caused by the pandemic, we were still able to award <u>13 Summer Dissertation Fellowships</u> to students in 8 different PhD programs allowing them to make more progress on their dissertations.

We also were able to offer our most prestigious award: the Outstanding Dissertation Award for exceptional scholarship, research, and writing by doctoral students. Three awards are given out annually, one each for the STEM, humanities, and social science fields. Although we were unable to host our Spring awards luncheon for these students, we did recognize them with a cash award of \$1000, a commemorative plaque, and public announcements on social media. The three winners are listed below.

2019-20 Outstanding Dissertation Award Recipients



Rachel Alexander PhD, Political Science

"Philosophical Foundations for Political Change: Aristotle's Inquiry into Beginnings in the *Nicomachean Ethics*" Mentor: Dr. Mary Nichols

Postdoctoral Fellowship: Princeton University



Renae Wilkinson PhD, Sociology

"The Long Arm of Childhood Bereavement: Parental Death and Pathways to Adult Health and Educational Inequalities" Mentors: Drs. Matthew Andersson and Lindsay Wilkinson

Postdoctoral Fellowship: Harvard University



Sam Yruegas PhD, Chemistry

"Generating Conjugated Boron Heterocycles from Boroles"

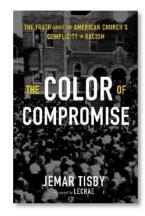
Mentor: Dr. Caleb D. Martin

Postdoctoral Fellowship: Princeton University

Christian Mission and Community

The mission of Baylor University to not only educate for "worldwide leadership and service" but to do so through "integrating academic excellence and commitment within a caring community" has been especially needful during the COVID-19 pandemic. Our graduate students, who come from increasingly diverse backgrounds, experienced the social and intellectual isolation of the pandemic at the same time as they experienced the surge in racial unrest and political tension of this past election season. The Graduate Student Association (GSA), led by President Katie Adair (PhD Candidate in HHPR), organized virtual reading groups for 125 of our students to read together and discuss the

intersection of faith and U.S. history—focusing on Jemar Tisby's best-selling book The Color of Compromise: The Truth about the American Church's Complicity in Racism and culminating in а virtual conversation with the author himself. Tisby spoke from his current experience as a PhD candidate in History, as well as answering questions about his Participating students



called the event "a breath of fresh air" and thanked Jemar Tisby profusely for his "wisdom and labor," "insightful discussion," and for taking time to talk with them. Forty-six students, faculty, and administrators attended the virtual event.



Graduate students, faculty, and administrators attend a Zoom discussion with Jemar Tisby, author of *The Color of Compromise: The Truth about the American Church's Complicity in Racism.*

In addition to supporting GSA, the Graduate School fosters Christian community through programs like the <u>Conyers Scholars Program</u>. Conyers Scholars, a partnership between the Graduate School and the Institute for Faith and Learning, encourages and supports doctoral students who are interested in questions regarding faith, learning, vocation, and the university. The twelve scholars selected

for 2020-2021 continue to meet regularly by Zoom, providing an important connection point for discussions about faith and academic life. Virtual meetings have brought new opportunities to include distinguished guest speakers, such as David I. Smith, author of *On Christian Teaching*, who dialogued with us in November. The scholars miss breaking bread together, but reading, journaling, and building friendships through discussion remain the cornerstone of this interdisciplinary community of doctoral students and faculty leaders.

GPS Workshops

GPS—Grad Pathways to Success—has become our leading professional development program. Through a series of workshops, designed for students in each stage of their graduate career, we work to help graduate students take ownership of their professional journey and develop the skills to become more successful in their chosen career path. Once again, before COVID-19, we mostly hosted inperson workshops. However, to make sure our workshops remain accessible to all our students-including our growing number of online graduate students—we have worked hard to deliver many of our workshops virtually. So far, we have turned the Formatting Workshop, Building a Good Relationship with your Adviser, Finding Funding, Beginning the Job Hunt, Cultivating a Professional Identity, Step Up Your Scientific Writing, Compose Yourself— Creating a C.V., and How to Interview Well into online events. We have learned that the best delivery method for these to catch the largest number of students seems to be offering the workshops asynchronously through Canvas within a limited timeframe. In our most recently offered workshop, Cultivating a Professional Identity, we enrolled more than 40 students and had more than 30 complete participation within the workshop.

New Graduate Student Orientation

Although we missed meeting in person with our new graduate students this year, we found that our virtual orientation communicated with more graduate students

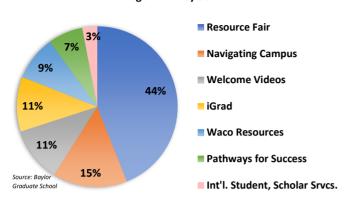
and faculty than we ever have before. Whereas in 2019 we registered 319 new students for an in-person orientation, we actively engaged more than 425 new students with our 2020 virtual orientation. We released our orientation through Canvas, and included welcome videos from the President, Provost, Vice Provost of Student Life, Vice Provost and Dean of the



Graduate School, and the Dean of Student Life. Indeed, our virtual Resource Fair proved so popular (receiving 44% of

the overall traffic) that both students and faculty asked us to migrate the information to a permanent webpage so it could be accessed throughout the year.

Table 15. New Graduate Student Orientation Page Views by Section



Expanded Health Insurance Benefits

For several years, the Graduate School has worked to expand health insurance benefits for graduate students. Since June 2020, all graduate students enrolled in 3 credit hours of coursework or 1 full-time credit hour receive access to Blue Cross/Blue Shield health insurance through our graduate student health insurance plan administered by Academic Health Plans. Domestic graduate students are able to activate their insurance or waive the requirement (by showing proof of alternate coverage) completely online, as well as enroll dependents and add optional benefits. Graduate students classified as graduate assistants receive an 80% insurance subsidy for their individual insurance premium cost. In 2019-2020, almost 800 graduate students qualified for the health insurance subsidy, and more than half of those students accepted the subsidy and activated health insurance through Baylor.

Retention and Graduation Rates

Nationally, retention is a serious problem for graduate schools. The Council of Graduate Schools estimates that national ten-year PhD graduation rates are only about 55%. Fortunately, Baylor's graduation rates are better than the national norms, with a completion rate of roughly 67%. The reasons students leave PhD programs are complex, often the result of a change in their sense of vocation. Sometimes they struggle with the rigors of doctoral education or the professional expectations of the field. More often, personal factors or professional opportunities lead them in other directions. As a result, doctoral graduation rates are not expected to match those of undergraduates. Still, the national average is a low bar. Top tier institutions often have doctoral graduation rates near 80%. That is our goal. It is what the best research universities achieve, and it is certainly where a Christian research university should aim.

The table below shows our current graduation rates after 6 and 10 years. Comparing these time periods to each other is difficult since they represent different cohorts of incoming students. The first column is longer, for example, because several of our departments are still in their first decade. Nevertheless, a few observations deserve attention. Some departments have a low 6-year rate, but a high 10-year rate, which suggests that time- to-degree is the challenge rather than completion. These traditionally include humanities fields, as is true at Baylor, but it also includes our Biology, Geosciences, and Physics departments. We are hopeful that recent changes in these departments will help in this area. On the other hand, some departments, such as Chemistry and Biochemistry, Sociology, and Mathematics, have a higher 6-year graduation rate. This suggests that recent improvements in mentoring and student support from these departments are helping retain and graduate our students. These positive trends will help us reach our goals.

Table 16. Doctoral Graduation Rates

Doctoral Program	After Six Years*	After Ten Years**
Biology	33%	62%
Biomedical Studies	47%	81%
Chemistry & Biochemistry	35%	41%
Clinical Psychology	100%	71%
Curriculum & Teaching	100%	100%
Educational Psychology	72%	72%
Electrical & Computer Science	67%	
English	46%	79%
Geosciences	38%	56%
History	89%	
Higher Education Studies & Ldrship.	100%	
Information Systems	92%	35%
Exercise Nutrition Sciences	83%	
Mathematics	88%	79%
Mechanical Engineering	100%	
Philosophy	58%	92%
Physics	23%	63%
Political Science	43%	54%
Psychology	69%	70%
Religion	38%	75%
Sociology	82%	54%
Statistical Science	71%	71%
Total Averages Source: Baylor Graduate School	67%	68%

Three-year average of most recent available incoming cohort.

^{**2008-10}



^{*2012-14}

Baylor Graduates and the Pandemic Job Market

Last year, the Graduate School began utilizing the Academic Alumni Placement services offered by Academic Analytics. Instead of tracing the job placement of our PhD students through the knowledge of their



Rachel Renbarger, PhD in Educational Psychology, 2020

departments and the limited information provided for us by PhD students at the time of graduation, we are now able track to the employment of our students throughout a 5vear window as well as have that employment information verified by an outside source. We found that 73% of our located graduates during the past

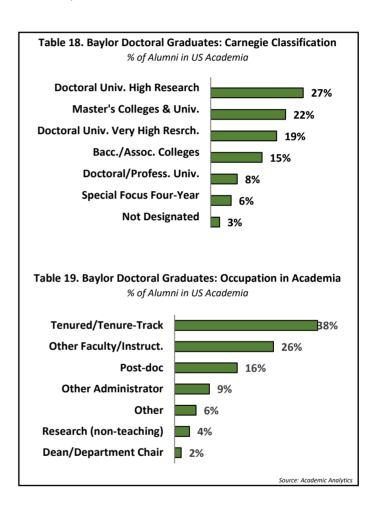
five years have found either temporary or full-time employment within academia (Table 17). However, more and more of our PhD students are also finding rich careers outside of academia—including positions in industry, non-profits, and the government. Of the graduates working in academia, 38% are in tenured or tenure-track positions and 16% hold postdoctoral positions—including at prestigious research universities (Table 18). Rachel Renbarger, for example, served at Baylor as president of the Graduate Student Association for two years. She completed her PhD in Educational Psychology in May 2020 and accepted a position as a Postdoctoral Research Associate at Duke University, where she currently is still employed.

Table 17. Placement of Baylor Doctoral Graduates(Located Graduates, 2015-2020)

	Field	N	% of Total
	Further training or education	45	13%
nia	Primarily research	80	23%
der	Primarily teaching	115	33%
Academia	Other	16	5%
,	Total	256	73%
ic	For-profit	56	16%
len	Nonprofit	11	3%
cac	Government	8	2%
Non-Academic	Other	18	5%
No	Total	93	3% 2% 5% 27%
	Grand Total	349	100%

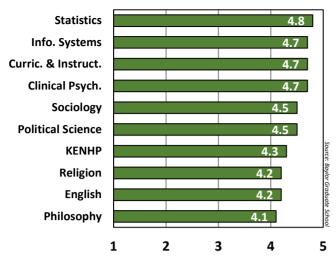
For our current students who plan to stay in academia, however, the pandemic has created an unprecedented retraction in the academic job market. To better assist our

graduates during this difficult time, the Graduate School has received support from the Office of the Provost to expand the Postdoctoral Teaching Fellowship program. Beginning for Fall 2021, the College of Arts & Sciences along with the Honors College will support seven Postdoctoral Teaching Fellowships for our most recent PhD graduates. The teaching fellowships will provide a 10-month salary of \$40,000, travel support and additional professional development from the Graduate School, as well as full health benefits. This more expansive Postdoctoral Teaching Fellowship not only aligns Baylor with the practice of R1 universities but also demonstrates the care we are known for as a distinctively Christian university.



Our alumni are perhaps the best indicator of the success of our doctoral programs. Each year we administer a doctoral alumni survey to all PhD students one year after their graduation, asking them not only how they are doing but if they would recommend a Baylor PhD to prospective students. We have analyzed the data from programs with 5 or more alumni responses over the past 3 years, and it indicates that many of our students—especially in programs like Statistics, Sociology, and English (Table 20)-consider their Baylor graduate degree so transformational an experience that they consistently confirm they would recommend it to others.

Table 20. Alumni Survey: Most Satisfied Doctoral Graduates*



*Measured one year after graduation by response to "Would you recommend Baylor to prospective students in your field?" Response items include: definitely not, probably not, maybe, probably, and definitely. (Three year rolling average for programs with five or more responses.)

Funding Graduate Education

Graduate education is expensive; research-intensive programs are especially so. Yet graduate education and research are among the important characteristics that are distinctive about Baylor as a Christian university, and like other important characteristics of this university—high quality undergraduate education, strong student support services, winning athletic programs—they cost money. Exactly how much depends on complex assumptions such as how to allocate the costs of faculty and facilities that support both graduate and undergraduate students. Still, it is incumbent on us to develop new sources of program support and revenues associated with high quality graduate education.

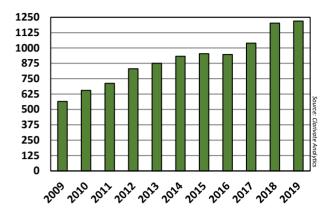
Last year, our faculty generated \$3.2M in external research grants to pay for graduate students. That is an all-time high in external funding for graduate stipends, but we can and will do better. Another source of support comes from our professional master's programs. As we add new programs that directly translate into high-demand professional jobs, the income they generate can assist the larger research initiative. Our rapid and strong professional/online graduate education has helped hire new faculty and support new graduate students. Baylor's move toward R1 is being greatly accelerated by our move into online education.

Scholarly Profile of Our Faculty

Graduate programs, especially doctoral programs, cannot be successful without faculty who publish widely cited research. Our growing research prowess is clearly illustrated by the number of articles our faculty publish. We

have now exceeded 1,200 articles per year in the worldwide data base of major peer-reviewed journals maintained by Clarivate Analytics.

Table 21. Baylor Faculty Total Publications



More broadly, the Office of Institutional Research & Testing maintains the annual Academic Analytics (AcA) database that counts the publications, citations, awards, and grant dollars of every graduate faculty member of every PhD program in the nation. For 2019, AcA's most recent release, sixteen of our PhD programs are among the strongest in the nation in terms of faculty scholarship, the largest number ever for Baylor. Our PhD program in Higher Education Studies & Leadership leads, with its faculty placing among the top 7% in the nation. Several of their doctoral students have worked on research projects for the Graduate School, and I can personally attest to their quality.

As a point of temporal reference, five years ago, in 2014, Baylor had only ten PhD programs ranked in the top half by Academic Analytics. In only five years, we have increased by over 50% the number of highly ranked doctoral programs measured by the scholarship of our faculty.

Table 22. Highest Academic Analytics Rankings for 2019

PhD Program	National Percentile
Higher Edu. Studies & Leadership	93
Philosophy	92
Preaching	91
Entrepreneurship	90
Religion	82
Educational Psychology	81
Environmental Science	78
History	74
Sociology	74
Exercise Nutrition	68
Information Systems	65
Biomedical Studies	64
Mathematics	61
Ecological, Earth, and Environ. Sciences	59
Psychology	54
Biology	51

Source: Academic Analytics

External PhD Program Assessments

External assessment of our doctoral research programs is essential to achieving our R1 aspirations. We need to have top scholars at other universities assess what we are doing at Baylor. This past academic year (2019-2020) three Baylor departments had external PhD program assessments: Environmental Science, Chemistry & Biochemistry, and Information Systems (Table 23). Although we had to cancel all three external PhD program assessments that were scheduled for Fall 2020 and Spring 2021 because of the COVID-19 pandemic, the program will pick up again in the next academic year, starting in Fall of 2021. For the 2021-2022 Academic Year the Departments of Religion, Philosophy, and Electrical & Computer Engineering have planned reviews (see Table 23). Review teams consist of three experts chosen by the Department and approved by the Graduate School who study documents provided by the Department and the Administration, and then spend two to three days on-campus visiting with Administrators, Graduate Faculty, Graduate Students, and Staff, and touring Department facilities.

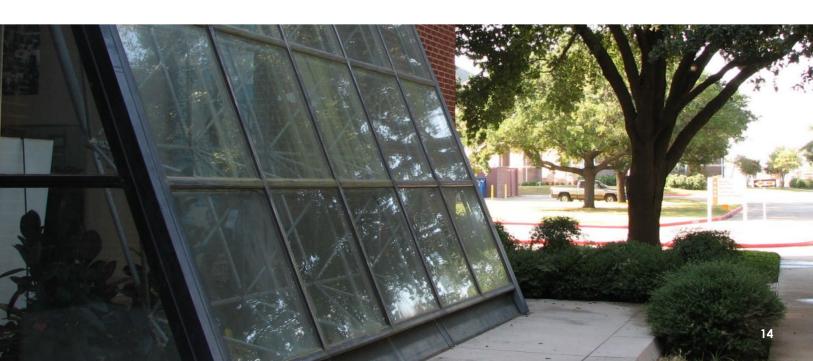
Provost Brickhouse has requested that all Baylor PhD programs be externally reviewed every 10 years, with an internal assessment of the department's response conducted 5 years after the external review. It will take a little over a decade to complete our first round of reviews, and hopefully, by that time, Baylor will be an R1 university.

Table 23. Schedule of External Assessments for PhD Programs

		1		
Year	PhD Program	College or School	Dates	Status
		Arts &	Oct. 28-	
2018-19	Geosciences	Sciences	30, 2018	completed
		Arts &	Sept. 23-	
2018-19	Sociology	Sciences	25, 2018	completed
		Robbins		
		College of		
		Health &	Nov. 4-	
2018-19	KENHP	Human Sci.	6, 2018	completed
			Sept. 29-	
	Environ.	Arts &	Oct. 2,	
2019-20	Science	Sciences	2019	completed
	Chemistry &	Arts &	Jan. 8-	
2019-20	Biochemistry	Sciences	10, 2020	completed
		Hankamer	February	
	Information	School of	26-28,	
2019-20	Systems	Business	2020	completed
		Arts &	Sept. 26-	
2021-22	Religion	Sciences	28, 2021	scheduled
		Arts &	Feb. 6-8,	
2021-22	Philosophy	Sciences	2022	scheduled
	Electrical			
	and	Engineering,	TBA:	
	Computer	Computer	Spring	
2021-22	Engineering	Science	2022	scheduled



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Concluding Note: The New Normal

When I met with the Graduate School's Associate Deans to plan the 2020 Annual Report, we acknowledged the necessity to edit its format in response to all the pandemic-driven changes. However, I held out the hope that we could, in a few months, get back to normal and produce a Report the following year that resembled the earlier versions. My hope proved to be unfounded on two levels. One, unfortunately, is because 2021 will not start normally. The COVID-19 disruptions to graduate education will continue and the timetable for a return to normalcy remains uncertain. The other, fortunately, is that for graduate education at Baylor a new and clearly superior normal is emerging. Graduate education at Baylor in 2021 will be different, better, than it was in 2020, and different and better than it was in the years before that.

- The services the Graduate School provides to our students have become much more accessible through technological changes driven by the pandemic. As examples, even though we will go back to an in-person orientation for new graduate students each fall, a virtual set of orientation experiences patterned after this year's successful online orientation will be offered as well. Similarly, our GPS (Graduate Pathways to Success) workshops will continue to provide the combination of synchronous and asynchronous offerings that resulted in record enrollments this year. The Graduate Writing Center and our thesis and dissertation reviews moved entirely online during the pandemic and will continue to offer online opportunities to supplement face-to-face interaction in the future.
- The pandemic has increased the already rapid growth in our online graduate programs. Online students, not bound by the necessity of moving to Waco, are much more diverse in age, gender, and ethnicity than Waco campus students. These online programs have many more applicants and can be extremely selective in who they admit. The same is true, by the way, for our online faculty. We can attract stellar faculty to teach in these programs, faculty who would not always be available if they had to move their families to Waco. Our online programs, students, and faculty are making Baylor's graduate education different and better.
- And finally, in 2021, we will be closer to our R1 goal. Many research universities were forced by financial
 exigencies to cut back on graduate education. At Baylor, graduate professional programs continued to generate
 funds for graduate education and *Illuminate* continued to fund new, world-class faculty. By not reducing our
 emphasis and support for top scholars and graduate students, Baylor's relative position in the Carnegie rankings
 will improve.

This change, however, will not be a forced response to COVID-19 adjustments, but rather in recognition of the fundamentally different and fundamentally better Graduate School that Baylor is building, a trajectory accelerated through the pandemic and continuing after it ends.

Larry Lyon

Vice Provost and Dean of the Graduate School

December 2020

Lawy Ryon

The increased presence and active engagement of graduate students at Baylor will expand the University's impact on the world. With master's degrees and doctorates in hand, these accomplished men and women will pursue careers in fields across industry, academia and the medical professions. In doing so, they will carry the faith-based education experienced at Baylor into other communities and, through their accomplishments and integrity, serve as ambassadors for Baylor's excellence in higher education.

<u>TLLUMINATE</u>

BAYLOR UNIVERSITY

Graduate School Deans



LARRY LYON, Vice Provost and Dean of the Graduate School

Dr. Lyon earned his PhD from the University of Texas in Sociology and joined the Baylor Sociology Department in 1975. He began serving as Dean of Baylor's Graduate School in 1998.

He is a Vice Provost, a Professor of Sociology, and the Director of the Baylor Center for Community Research and Development. His research interests include community sociology and faith-based higher education.



CHRIS RIOS, Associate Dean

Dr. Rios joined the Graduate School in 2011 working in the area of professional development. In his current role as Associate Dean, he oversees enrollment management and academic technology. He also manages the Graduate School budget and directs the Bernard Ramm Scholars program.

In addition to his service in the Graduate School, Rios teaches undergraduate courses in the Department of Religion and the College of Arts and Sciences. He also leads the annual Adjunct Teaching Workshop for the Academy for Teaching and Learning. He is a historian of science and religion with publications that include *After the Monkey Trial: Evangelical Scientists and a New Creationism* (Fordham University Press, 2014).



BETH ALLISON BARR, Associate Dean for Student and Faculty Development

Beth Allison Barr is an Associate Professor of History at Baylor University. She received her PhD in Medieval History from the University of North Carolina at Chapel Hill in 2004. Her research focuses primarily on women in late medieval English sermons, and her PhD students mostly work on women and sermon literature, 1200-1700. Barr is the author of *The Pastoral Care of Women in Late Medieval England* and co-editor of *The Acts of the Apostles: Four Centuries of Baptist Interpretation*. Her most recent book, *The Making of Biblical Womanhood*, is forthcoming in 2021, and she is continuing to work on *Women in English Sermons*, 1350-1500. She is also a regular contributor to *The Anxious Bench*, a religious history blog on *Patheos*, where she often writes about graduate education.



STEVEN DRIESE, Associate Dean for Research

Dr. Driese joined the Baylor faculty as the Chair of the Geosciences Department in August 2004, serving until 2013, when he became the Graduate Program Director. Prior to coming to Baylor, he taught at the University of Tennessee-Knoxville (1982- 2004). He obtained his B.S. degree from Southern Illinois University in Carbondale, and the M.S. and PhD degrees in geology from the University of Wisconsin-Madison.

Dr. Driese has published 150 peer-reviewed journal articles and his research areas include reconstructing past landscapes, climates and atmospheric chemistry from fossil soils, which are known as "paleosols". His research investigations involve both field and laboratory components and use modern soils as analogs for interpreting paleosols. He is a Fellow of the Geological Society of America and the American Association for the Advancement of Science and is an Honorary Member of SEPM (The Society for Sedimentary Geology).

Graduate School Staff



SHEILA DOOLEY, Assistant to the Dean and Vice Provost

Sheila began working with the Graduate School in November of 2019. She is responsible for coordinating the Dean's calendar, gathering doctoral student publication data and administering Graduate Council meetings. She also

facilitates course reviews, the PhD assessment process, and the degree proposal process.



SANDRA HARMAN, Assistant to the Associate Dean for Student Development/Dissertation & Thesis Coordinator

Sandra came to Baylor in 1987 and has worked with graduate education most of that time. Review of dissertations and theses is one of her primary roles in the

Graduate School, along with the administration of the Graduate School Travel Awards program.



ANNA HENDERSON, Business Manager

Anna has worked in the Graduate School since 2007. She is the stipend budget manager and administers Graduate School Fellowships and the Presidential Scholars fund. She also manages Graduate School budget processes, publishes the

Annual Report, and serves as the volunteer program coordinator for Baylor in Oxford.



TOSHA HENDRICKSON, Admissions and Recruitment Director

Tosha joined the Graduate School in 2016. She directs the operations of the Graduate Admissions office, serving as administrator for access to the admissions database, and updating the online graduate application. She also aids the

Associate Dean with enrollment management and manages recruiting funds.



ALANNA MARTINEZ, Program Coordinator, Graduate Student and Faculty Development

Alanna joined the Graduate School in 2014 and administers TOR benefits, outstanding graduate student awards, and GPS programs. She assists with Graduate Orientation and New GPD Orientation, works

with the various graduate scholars groups, and serves as the contact for the Graduate Student Association.



DANA MATTHEWS, Admissions Specialist

Dana joined the Graduate School in October 2020 as an Administrative Associate. Her responsibilities range from managing the front office, answering inquiries regarding the graduate admissions process, welcoming visitors, and assisting with

website development. She previously worked in Healthcare Administration and in her downtime is pursuing her bachelor's degree.



ALANA SCHAEPER, Enrollment Management Specialist

As Enrollment Management Specialist for the Graduate School, Alana manages student records and serves as the degree planner for all graduate programs. It is her responsibility to certify students for graduation. She also handles registration for non-degree-seeking graduate students.



LAURA SEPANSKI, Admissions Specialist

As Admissions Specialist, Laura assists graduate program faculty/staff with training and problem-solving in Slate, Baylor's application/admissions system, as well as facilitating application documents, transcript holds, test scores, email campaigns, and reports.



SHERRY SIMS, Director of the Graduate School Office

Sherry has worked in the Graduate School since 1981. She serves as the degree planner for all graduate programs and certifies students for graduation. She is also responsible for the Graduate Catalog and making sure all policies and degree plans are included and current.