

HARNESSING THE POWER OF DATA LITERACY

Quality Enhancement Plan

Tulane University | February 7-10, 2022

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EXECUTIVE SUMMARY

Over the past 20+ months, the onset and growth of the COVID-19 pandemic has highlighted the need for universal data literacy. The daily reports on COVID-19, framed by the demographics of vaccinations, tests, hospitalizations and death rates, have evidenced the need to understand basic statistics. Data analysis has proven to be the key to the dissemination of scientific understanding and to our ability as humans to react to it. The pandemic and the world's reaction to it have made clear that an engaged citizenry needs to have the ability to frame valid data-based arguments, communicate them clearly and persuasively, and critically evaluate the data-based arguments of others. These data literacy skills have become essential competencies for making informed decisions about one's own and the community's welfare. They are also essential skills for future leaders in industry, politics, and academia.

Tulane University (Tulane) needs to prepare its students to be data-literate engaged citizens. The negative impact of inadequate data literacy on students entering the workforce (or conducting research) has been summarized by Frank and Walker: "As data, open, big, personal or in any other guise, becomes increasingly important, power will flow to those who can create, control and understand data. Those who cannot become powerless. Further, their ability to participate in society will be severely challenged as they lack the tools to engage with an important raw material of society" (Frank and Walker, 2016, 234).

The University mission serves as the cornerstone for long-term planning and all institutional initiatives and, as such, serves as the foundation for the QEP. The Data Hub is in direct support of Tulane's mission statement: *Tulane's purpose is to create, communicate and conserve knowledge in order to enrich the capacity of individuals, organizations and communities to think, to learn, and to act and lead with integrity and wisdom*.

Tulane's QEP has the goal of preparing our students to think, act, and lead with integrity and wisdom in an age of information overload.

Within this context, Tulane will develop a center—The Data Hub—that will serve as a central home for interdisciplinary, data literacy, and data science programming across the University. The Data Hub will create opportunities for all students—undergraduate, graduate and professional—to engage in the study of some of the world's most complex issues while elevating their capacity in data literacy and science.

Through its work, The Data Hub will build a campus culture that acknowledges and values the critical role of data in today's world and recognizes data literacy as an essential skill for being an active, engaged, and informed citizen.

Data literacy will provide our students with new tools with which to explore, discover, understand, and communicate about the world—the competencies that form the foundation of a liberal education. Crucial components of student learning will also be the real-world application of data, a connection to industry, and preparation for life after Tulane. In addition, The Data Hub will work to make all members of Tulane's community and beyond more conscious of how much data is being collected about our personal behavior, and how this data is being used to personalize our experiences and opportunities—including the news we receive, the way we shop, the entertainment we consume, and the healthcare we have access to.



The Data Hub will have designated space in Tulane's main library, providing a centralized location that is easily accessible to both students and faculty. Staffing will include the Executive Director, three Professors of Practice, two full-time staff members, and student assistants at the graduate and undergraduate level. The Data Hub will have a \$5 million budget over the first five years.

The Data Hub will utilize a multifaceted approach to building data literacy among the Tulane community by increasing cross-disciplinary conversations and collaboration, energizing the development of new educational programming, and supporting the Tulane community through workshops and bootcamps, accessible consultation, and related programming. The structure of The Data Hub is modeled on that of two existing University-wide centers that have successfully changed and energized the Tulane culture in recent years—the Center for Public Service (CPS) and the Center for Engaged Learning and Teaching (CELT)—and which will serve as crucial partners in carrying out the work of this QEP.

Tulane has structured The Data Hub to support these approaches through multifaceted activities, connected by an annual data theme:

Classroom Curriculum

Develop and offer new courses, and support faculty in modifying existing courses, to integrate the development of data literacy skills into the curriculum.

• Short-form Learning

Develop and offer workshops to increase student and faculty capacity in data science, analysis, and literacy, and create learning modules that faculty can integrate into existing classes.

• Co-Curricular Experiences

Develop and support co-curricular opportunities designed to build students' data literacy skills.

• Public Programming

Host programming that builds broad awareness of the increasingly significant role that data plays in shaping our environment.

Research Engagement & Applied Activities

Provide resources and grants for student research in support of increasing data literacy in the Tulane community.

As a result of participation in The Data Hub-affiliated activities, students will be able to use the quantitative analysis of data as the basis for judgments and/or conclusions; accurately interpret and explain information presented in mathematical forms; identify the limitations of data sources, analytics employed, and the implications; represent quantitative information in various forms; and recognize misleading or inappropriate representations of data. These student learning outcomes will be assessed using direct and indirect measures including assessment of student work with rubrics adapted from the Association of American Colleges & Universities (AAC&U) VALUE Rubrics.



QUALITY ENHANCEMENT PLAN SELECTION & DEVELOPMENT PROCESS

Tulane University is a world-renowned private research university in New Orleans, Louisiana, and a member of the Association of American Universities (AAU), the consortium of North America's leading research universities. Tulane was founded in 1834 as the Medical College of Louisiana, with the goal of helping the region address concerns about tropical diseases such as cholera and yellow fever. Since those earliest days, the research mission of the University has grown in response to the most pressing challenges facing our communities, with a profound partnership with and commitment to the city of New Orleans. Moreover, unlike many universities that were founded as liberal arts colleges or religious seminaries, Tulane has never been an "ivory tower." Tulane was founded to solve real-world problems, and the echoes of that history can be found in the current seamless coordination of basic science and translational science—and its real-world implementation. This QEP is the latest element of that commitment, and Tulane's focus is on insights and competencies that bridge the theoretical and the applied, and the campus and the broader community.

Selection of the Topic

Tulane developed its QEP over the course of two years of planning, soliciting proposals, and broad-based discussion across the campus community, beginning in May 2019. Through the President's Cabinet,¹ the University's Administrative Council, and Academic Affairs Council, the Senior Vice President for Academic Affairs and Provost (Provost) kicked off the initial phase of the process—idea generation—with University leadership. Chaired by the President, the Administrative Council provides a forum for the exchange of information among the senior leadership on important University issues and strategies, as well as institutional planning and goals. In addition to members of the President's Cabinet, Administrative Council members include the heads of critical administrative departments and academic offices; the Deans of the University's Schools and College; and the Directors of the University's academic centers and institutes. With some overlap in membership with the Administrative Council, the Academic Affairs Council provides a similar forum among the institution's academic leadership and the Provost.

The University's SACSCOC Compliance Certification Committee—co-chaired by the Senior Associate Dean from the School of Public Health and Tropical Medicine and the Assistant Provost for Assessment and Institutional Research—served as liaison to their respective Schools and units throughout the process.

Committee members were encouraged to develop ideas as well as asked to ensure that colleagues in their Schools and units were not only aware of the upcoming opportunity to submit ideas but felt empowered to do so.

¹ The President's Cabinet is comprised of the President; Senior Vice President of Academic Affairs and Provost; the Senior Vice President and Chief Financial Officer; Chief of Staff, Secretary of the Corporation and Vice President; Chief Investment Officer; General Counsel; Senior Vice President, Advancement; Senior Vice President and Dean of Admission for Enrollment Management and Graduate and Pre-College Strategy; Senior Vice President and Dean, School of Medicine; Vice President of Student Affairs; and the Director of Athletics.



Following initial discussions among administrative leadership, academic leadership, and the University's SACSCOC Compliance Certification Committee, the University Senate's first meeting of the 2019-2020 academic year included an agenda item from the President about the University's reaccreditation process with SACSCOC. The importance of the process and the critical involvement of the entire University community was stressed, as evidenced by the invitation to the University Senate² to reach out to their colleagues to begin generating ideas for the QEP.

From there, the formal phase of collecting ideas began. In November 2019, the Provost sent an email to the Tulane community to begin a campus-wide conversation about potential QEP topics (Appendix A, p. 49). In addition, announcements calling for idea submissions were published in a variety of electronic newsletters circulated across the community, such as *Tulane Today*, Tulane's daily e-newsletter (Appendix B, p. 51). Beyond the meetings of the University leadership, encouragement to submit ideas was given at a wide variety of gatherings across the University, such as School faculty meetings and meetings of academic and student support service units.

Ideas were submitted through the QEP website (Appendix C, p. 55). With the goal of collecting as many different ideas as possible, no more than a paragraph or two was requested to submit an idea at this point in the process. Submissions were received from individual faculty and staff as well as from departments and programs across the University. Ideas were categorized and summarized for review by the Provost, members of the Office of Academic Affairs and Provost, and the President.

Six themes emerged from the submissions and were announced by the Provost to the University community in the first days of March 2020:

- Writing and Communication
 - Expand the undergraduate writing center to address broader communication skills (e.g., presentation and collaboration), and/or
 - Provide more writing and communication support for graduate and professional students.
- Undergraduate Research
 - Expand opportunities for undergraduates to participate in independent research and make it easier for students to explore these options.
- Active and Engaged Learning
 - Create more opportunities for students to engage with academic material in more active ways. For example, prioritizing the introduction of group projects into classes. This would require both renovating classrooms to allow for students to gather in small groups more easily for project work and discussion, and supporting faculty who would like to offer these opportunities, and/or
 - Provide support for the creation of virtual reality and augmented reality projects and computer-based simulations to allow students to explore classroom materials using digital tools.

² The University Senate is Tulane's senior internal governance body. It consists of elected faculty representatives, senior administrators, student and staff representatives. The Senate is chaired by the President of the University. Its purview consists of all matters of general University concern, especially those which affect at least two academic divisions.



• Data Literacy

• Ensure that all students graduate with the ability to find, assess and analyze data, communicate their findings effectively, and critically examine the data-based work of others.

• Design and Visual Communication

 Designing anything—a building, an image, a business, an event, a process—typically requires the consideration of a large set of perspectives, constraints, values, and priorities, and requires that specific choices be made and that those choices be effectively communicated to others. Every student should have the transformative opportunity to design something, and to present their design to the appropriate audience.

• Enhancing the Sophomore Year Experience

• Articulate a compelling set of educational and developmental goals for the sophomore year, and dedicate the appropriate resources to help students achieve those goals.

The Provost asked the campus community for reactions to the six themes, or for any additional ideas for consideration (Appendix D, p. 57).

In mid-March, the Provost hosted two town halls—one on the Uptown campus and one Downtown where the Schools of Medicine, Public Health and Tropical Medicine, and Social Work are located (Appendix E, p. 59). The town halls introduced community members to the reaccreditation process, with a particular emphasis on the QEP and the opportunity for all community members to participate in the process of identifying a theme and selecting the QEP.

March 13, 2020—the day the Downtown town hall was held—transpired to be the last day of in-person classes and work at Tulane, in response to the COVID-19 pandemic. The formal QEP identification and selection process paused for the remainder of the Spring 2020 semester and through the Summer. However, discussions continued to take place about whether any other additional themes should be considered as a result of the extraordinary circumstances of the COVID-19 pandemic.

In September 2020, the Provost reminded the University community of the six themes that had emerged, asked again for feedback on these themes, and encouraged any additional idea submissions, particularly in light of the move to online instruction in the Spring and the challenges and opportunities that presented (Appendix F, p. 61; Appendix G, p. 63).

The result of this call was overwhelming support for the theme of Data Literacy, with supporters often referencing COVD-19.

Community members highlighted the need to be able to think critically about data in order to engage effectively in the most pressing conversations facing our local and global communities and to make well-informed decisions about health and safety.



Further, increasingly compelling evidence for a commitment to data literacy and to enhance curricular and research support for data science had also surfaced through multiple strategic planning exercises between the Provost and the Deans and has since manifested in units across campus:

• Undergraduate students at Tulane interested in data science have repeatedly reported that they would like more programming in this area. More pressingly, analysis suggests that **many students with an interest in data science do not view Tulane as a desirable destination.** According to the 2020 CIRP Freshman Survey,³ for example, the percent of new freshmen at a cohort of peer schools who have an interest in quantitative science (mathematics, computer science, and statistics) is 10.2%, while the corresponding percentage at Tulane is 1.4%.

If Tulane is to fulfill its mission to recruit and educate the top students in the country, it must create new academic programming that allows such students to fulfill their ambitions at Tulane.

- Data science is at the core of the research of a growing number of our faculty in the natural and social sciences.
- Tulane's A.B. Freeman School of Business carried out a strategic planning exercise that **identified data analytics as a crucial area for growth**, and recently created a new Business Analytics program.
- The Murphy Institute has identified data science—as a foundation for policy forecasting and assessment—as a priority and collaborates with multiple Schools across the University.
- The School of Public Health and Tropical Medicine has **prioritized the growth of data science expertise** in Biostatistics.
- The School of Medicine has **prioritized the development of a biostatistics group** to support translational and clinical research, which led to the University's recent creation of the Tulane University Translational Science Institute (TUTSI).
- Faculty in the School of Liberal Arts whose research engages questions about data visualization have created a faculty working group with colleagues from other Schools at Tulane to share resources related to the **interpretation**, **creation**, **curation**, **and ethics of data visualization**.

Further formal discussion in Administrative Council, Academic Affairs Council meetings, and the President's Cabinet solidified the QEP topic choice. In January 2021 the Provost formally announced Data Literacy as Tulane's QEP topic (Appendix H, p. 64; Appendix I, p. 67; Appendix J, p. 68).

³ The CIRP Freshman Survey, conducted by UCLA's Higher Education Research Institute, is a national survey of incoming college students' background characteristics, high school experiences, attitudes, behaviors, and expectations for college.



QEP Idea Solicitation and Topic Selection Timeline

DATE	ACTION
May 2019	<i>Administrative Council:</i> Kick off discussion of the reaccreditation process and the QEP
	Academic Affairs Council: Kick off discussion of the reaccreditation process and the QEP
September 2019	<i>University Senate:</i> Discussion of the reaccreditation process and the QEP
November 2019	University-wide email from the Provost, soliciting QEP topic ideas
March 2, 2020	University-wide email from the Provost, announcing the broad themes of idea submissions and inviting feedback
March 11, 2020	Reaccreditation Town Hall (Uptown), hosted by the Provost
March 13, 2020	Reaccreditation Town Hall (Downtown), hosted by the Provost Final day of in-person classes and work, due to the COVID-19 pandemic
September 2020	University-wide email from the Provost, re-announcing the broad themes of idea submissions and inviting feedback
November 2020	Administrative Council: Discussion of themes from the QEP idea submissions Academic Affairs Council: Discussion of themes from the QEP idea submissions
January 2021	University-wide email from the Provost announcing Data Literacy as the theme of the QEP and charging a Data Literacy QEP Committee to develop a proposal



The Need for Data Literacy Education

Over the past 20+ months, the onset and growth of the COVID-19 pandemic has highlighted the need for universal data literacy. The daily reports on COVID-19, framed by the demographics of vaccinations, tests, hospitalizations and death rates, have evidenced the need to understand basic statistics. Data analysis has proven to be the key to the dissemination of scientific understanding, and to our ability as humans to react to it.

The pandemic and the world's reaction to it have made clear that an engaged citizenry needs to have the ability to frame valid data-based arguments, communicate them clearly and persuasively, and critically evaluate the data-based arguments of others.

These data literacy skills have become essential competencies for making informed decisions about one's own and the community's welfare. They are also essential skills for future leaders in industry, politics, and academia.

Tulane University needs to prepare its students to be data-literate engaged citizens. The negative impact of inadequate data literacy on students entering the workforce (or conducting research) has been summarized by Frank and Walker: "As data, open, big, personal or in any other guise, becomes increasingly important, power will flow to those who can create, control and understand data. Those who cannot become powerless. Further, their ability to participate in society will be severely challenged as they lack the tools to engage with an important raw material of society" (Frank and Walker, 2016, 234).

Though Tulane undergraduates arrive on campus with very strong academic credentials, the need for data literacy education is still evident. In preparation for the QEP, the Fall 2021 CIRP Freshman Survey included several custom questions developed by Tulane about first-year students' perceived abilities in several data literacy related skills.⁴ Though these questions indicated that relatively high percentages of first-year students (between 68% and 81%) rate their data analytic abilities as "Somewhat Strong" or "A Major Strength," there is work to be done. This is particularly apparent when the data is disaggregated by student demographics and students' intended majors.

For each of the three custom questions, those intending to major in the Arts & Humanities along with Psychology had the lowest percentages of students indicating having an above average ability in the data literacy skill areas. For students intending to major in Psychology, the percentage reporting an above average ability is as low as 56% for the requirement to "Critically evaluate charts and graphs for accuracy and/or misrepresentation of data" skill; Arts & Humanities majors were not far behind at 59%. The smaller percentages of female students indicating "Somewhat Strong" or "A Major Strength" for each of the skills is also notable. Further, a smaller percentage of students identifying as BIPOC⁵ report being "Somewhat Strong" or having "A Major Strength" in the skill areas as compared to non-BIPOC students; a similar pattern is observed for first-generation students.

Universal access to high-quality basic math education has long been understood to be a requirement of an equitable, functioning democracy, and hence, effectively, a constitutional right (We the People National Alliance,

⁵ BIPOC refers to people identifying as Black, Indigenous, People of Color.



⁴ Tulane received an 85% response rate for its Fall 2021 administration of the CIRP.

2017). Tulane believes that the same is true of data literacy, and that we must strive to close the gaps identified in the chart below through students' experiences at Tulane.

Percent of First-Year Students by Response Options: "How would you rate yourself in the following areas?"

	A MAJOR WEAKNESS / SOMEWHAT WEAK	AVERAGE	SOMEWHAT STRONG / A MAJOR STRENGTH						
Ability to read and understand charts, tables, and graphs									
Overall	4%	15%	81%						
BIPOC	5%	16%	79%						
Not BIPOC	3%	15%	82%						
Female	5%	17%	78%						
Male	1%	13%	86%						
Parent's Highest Degree									
No College Degree	5%	20%	75%						
Undergraduate Degree	4%	15%	81%						
Graduate Degree	4%	15%	81%						
Intended Major									
Architecture	5%	10%	85%						
Arts & Humanities	8%	26%	66%						
Business	3%	12%	85%						
Psychology	10%	24%	66%						
Science & Engineering	2%	8%	90%						
Social Sciences	4%	18%	88%						
Undecided	6%	23%	71%						
Critically evaluate charts a	nd graphs for accuracy ar	nd/or misrepresentatior	n of data						
Overall	6%	25%	68%						
BIPOC	5%	30%	65%						
Not BIPOC	7%	23%	70%						
Female	8%	28%	64%						
Male	2%	19%	79%						
Parent's Highest Degree									
No College Degree	4%	36%	60%						
Undergraduate Degree	6%	28%	66%						
Graduate Degree	6%	23%	71%						



	A MAJOR WEAKNESS / SOMEWHAT WEAK	AVERAGE	SOMEWHAT STRONG / A MAJOR STRENGTH							
Intended Major										
Architecture	2%	24%	74%							
Arts & Humanities	10%	31%	59%							
Business	5%	21%	74%							
Psychology	10%	34%	56%							
Science & Engineering	3%	19%	78%							
Social Sciences	5%	30%	65%							
Undecided	11%	33%	56%							
Critically assess data sourc	es for reliability and trust	worthiness								
Overall	4%	19%	77%							
BIPOC	4%	22%	74%							
Not BIPOC	4%	18%	78%							
Female	5%	21%	73%							
Male	1%	15%	84%							
Parent's Highest Degree										
No College Degree	4%	25%	71%							
Undergraduate Degree	4%	21%	75%							
Graduate Degree	4%	18%	78%							
Intended Major										
Architecture	8%	12%	80%							
Arts & Humanities	5%	21%	74%							
Business	4%	16%	80%							
Psychology	5%	30%	65%							
Science & Engineering	2%	18%	80%							
Social Sciences	4%	15%	81%							
Undecided	4%	27%	69%							

The National Survey of Student Engagement (NSSE), administered to Tulane seniors in 2018, reported that 86% of the respondents felt that their experience at Tulane contributed "Quite a bit" or "Very much" to their "knowledge, skills, and personal development" in "Thinking critically and analytically." However, 37% (more than one-third) and 43%, respectively, reported their Tulane experience contributed "Very little" or only "Some" to knowledge in "Analyzing numerical and statistical information" and ultimately "Solving complex real-world problems."



The fact that recent graduates do not consider their Tulane experience to have significantly contributed to their ability to perform numerical analyses is an indication that Tulane's curriculum may not be emphasizing these skills as much as necessary.

Further, when asked about the current academic year and how often they practiced a variety of data literacy related skills, between 14% and 19% of first-year students and seniors responded "Never" with approximately one-third responding just "Sometimes."

Percent of Seniors by Response Options: "How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?"

	VERY LITTLE	SOME	QUITE A BIT / VERY MUCH
Analyzing numerical and statistical information	12%	25%	63%
Thinking critically and analytically	3%	11%	86%
Solving complex real-world problems	9%	34%	58%

Percent of First-Year Students and Seniors Responding "Never" or "Sometimes": "During the current school year, about how often have you done the following?"

	NE	/ER	SOMETIMES			
	First-Year	Seniors	First-Year	Seniors		
Evaluated what others have concluded from numerical information	14%	14%	38%	36%		
Reached conclusions based on your own analysis or numerical information (numbers, graphs, statistics, etc.)	14%	14%	35%	35%		
Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)	19%	19%	35%	35%		



Data Literacy QEP Committee

With the topic area identified and data gathered to demonstrate the need to increase and support student learning related to data literacy, the Provost convened a committee to develop a proposal delineating how Tulane could infuse data literacy across campus. To ensure input from a wide variety of stakeholders, the Data Literacy QEP Committee (Committee) was comprised of 17 members (tenured and tenure-track faculty from each of Tulane's nine Schools, two Deans and one Executive Dean, an Institute Director, and two students— one undergraduate and one graduate student). Dr. Kimberly Foster, the Dean of the School of Science and Engineering, served as the Committee's chair (Appendix K, p. 69).

The Committee took an inventory of course offerings currently available at Tulane related to data literacy and data science, and conducted interviews with stakeholders across the University to learn more about existing campus capabilities and services and to identify growth and development opportunities related to data literacy and data science. In addition, Tulane colleagues from Tulane's library system, Information Technology, and other units were invited to attend meetings to provide insight into the data literacy and data science work being conducted by their teams and the data science resources they could contribute to the project. The Committee then formed three subgroups to focus on specific opportunities that the larger Committee had identified: education, research, and services/consulting. The Committee submitted a final report to the Provost, with specific recommendations for how to build on current resources to have data literacy become a campus-wide imperative.

Under the direction of the Provost, the Committee then coordinated with Dr. Amanda Garcia, Director of Media + Design in the School of Professional Advancement, to organize and host a "design thinking" exercise to name the QEP. Dr. Garcia met with QEP leadership prior to the workshop to define goals, target audiences, and the ultimate purpose of the naming exercise. Participants in the exercise represented the defined target audiences including faculty, students, department chairs, and administrators.

The half-day workshop addressed:

- 1. understanding what data means to our various participants;
- 2. understanding the needs and goals for the recommended QEP;
- **3.** understanding the **best ways to communicate** this shared meaning with the greater Tulane community and audiences.

These three steps were explored qualitatively and facilitators identified themes as they emerged. The workshop generated lively discussion among participants taking reoccurring themes into consideration. Ultimately, the resulting themes and proposals, including "The Data Hub," were submitted to the Provost for consideration.



THE TOPIC OF DATA LITERACY

While the nature of data varies widely by domain, the fundamental issues of data collection, data management, visualization, and modeling are common across disciplines. A successful data literacy program must strive to create connections among disparate programs to produce University-wide opportunities available to all students, regardless of degree level or discipline. President Fitts' dedication to encouraging and promoting interdisciplinary programs has created a strong foundation for such efforts. Existing resources include faculty expertise in Statistics and Computer Science as well as the interdisciplinary Center for Computation Science in the School of Sciences and Engineering, the A.B. Freeman School's Business Analytics program, and the many faculty carrying out data-based work across the natural and social sciences, law, and business. Other resources exist in the health sciences, including the School of Public Health and Tropical Medicine's lead research in bioinformatics and genomics. In addition, Tulane hosts several data-intensive interdisciplinary institutes, including the Center for Inter-American Policy & Research (CIPR, focused on policy issues in the Americas), the ByWater Institute (focused on coastal resilience and urban environment interdisciplinary research), and the Murphy Institute (a broad focus on political economy).

The Data Hub

Within this context, Tulane will develop a center—The Data Hub—that will serve as a central home for interdisciplinary data science academic and co-curricular programming across the University.

The Data Hub will create opportunities for all students—undergraduate, graduate, and professional—to engage in the study of some of the world's most complex issues while developing their capacity to use data in thoughtful, critical ways. It will strive to build a campus culture that acknowledges and values the crucial role of data in today's world and recognizes data literacy as an essential skill for engaged and informed citizens.

Data literacy will contribute to the competencies of a liberal arts education by providing our students with new tools to explore, understand, and generate knowledge about the world. A crucial component of student learning will be the real-world application of data analysis, which will also contribute to their abilities in the workforce and life after Tulane. In addition, The Data Hub will establish deeper interdisciplinary connections and elevate the research capacity in data science across the University.

The Data Hub will utilize a multifaceted approach to building data literacy in the community by energizing the development of new educational and co-curricular programming, and supporting the entire Tulane community through accessible consultation, software access, and training.

The structure of The Data Hub is modeled on that of two existing University-wide centers that have successfully changed and energized the Tulane culture in recent years—the Center for Public Service and the Center for Engaged Learning and Teaching—and which will serve as crucial partners in carrying out the work of this QEP.



Building on the University Mission and Key Initiatives

The University mission serves as the cornerstone for long-term planning and all institutional initiatives, and as such, serves as the foundation for the QEP. The Data Hub is in direct support of Tulane's mission statement: *Tulane's purpose is to create, communicate and conserve knowledge in order to enrich the capacity of individuals, organizations and communities to think, to learn, and to act and lead with integrity and wisdom.*

Understanding the power and limitations of data to explore the world, discover and test ideas, and persuasively communicate complex thoughts has become crucial for thinking, acting, and leading with integrity and wisdom in an age of information overload.

Further, the QEP builds upon the premise of the public service core curriculum requirement for Newcomb-Tulane College undergraduates, which established the importance of civic engagement as part of a Tulane education. Scholars recognize that increased data literacy is "...a critical concept with the purpose of promoting social justice and the public good, understanding power relations and power asymmetries as well as reducing social, economic, political, and other types of inequalities" (Špiranec, Kos & George, 2019). Tulane believes that data literacy is an essential component of a modern-day approach to civic education, providing students with the tools necessary to think critically about their communities, the challenges they are facing, and potential solutions.

In further support of the mission, the QEP aligns with, and supports, several of the *Key Initiatives* that frame Tulane's long-term plan. Most directly, the QEP contributes to *Enhancing the Student Experience* through the creation of formative experiences and spaces to foster collaboration and facilitate learning. The QEP will provide a physical space for students and faculty from all disciplines and areas of the University to come together, share ideas, teach each other, and explore data-based questions from multidisciplinary perspectives. In addition, like many University centers, The Data Hub promotes cross-disciplinary conversation and collaboration, as called for in the *Promoting Pioneering Research* initiative.

Defining Data Literacy

Before fully operationalizing the role of The Data Hub, "data literacy" must be fully defined. Frank & Walker (2016) and Visel & Frech (2020) endorse Mandinach & Gummer's definition of data literacy, which is "the ability to understand and use data effectively to inform decisions" (Mandinach & Gummer, 2013, 30). This has been a common definition endorsed by those in the data literacy field (Ellwood et al., 2019; Hunter-Thomson, 2019; Maybee et al., 2015; Yang and Li, 2020). Mandinach & Gummer's definition specifically addresses data literacy as it relates to educators and further elaborates that, "It [data literacy] is composed of a specific skill set and knowledge base that enables educators to transform data into information and ultimately into actionable knowledge. These skills include knowing how to identify, collect, organize, analyze, summarize, and prioritize data" (Mandinach & Gummer, 2013, 30).

Not only should students be able to understand and use data to inform their decisions, but literacy requires that data be used in context to think critically to problem solve and identify misrepresentation or mischaracterization of data (Pothier et al., 2019). Risdale's definition of data literacy has similarly identified four basic competencies related to data literacy: collection, management, evaluation, and application. These



competencies require that students develop skills and a basic ability to engage with data—although across disciplines, the mastery of those competencies may look different. (Risdale et al., 2015). Wolff's study of data literacy presents an important view of how data literacy may differ by discipline, and the study presents four types of "citizens" that are transferable to the disciplines of higher education (Wolff, 2016):

CITIZEN TYPES	NECESSARY SKILLS
Communicator	Make sense of and tell stories about data for others to digest.
Reader	Need skills to interpret data that is increasingly presented as part of their everyday life.
Maker	Need the skills to integrate data into broader overall strategies for identifying and solving real-world problems and to be actively conscious of their own data contributions that drive smart city applications.
Scientist	Need to combine strong technical data skills with communication skills and in-depth knowledge of the domain of the data.

Although data literacy first entered the academy in the sciences and mathematics, data-intensive discovery has become a fundamental method of inquiry in nearly every discipline. Though data literacy shares some core concepts with those of statistics and mathematics, such as the ability to interpret quantitative information, data literacy requires that students be able to interpret data within the context of cultural and social impacts, to extract knowledge and make informed decisions, and to think critically about the reliability and integrity of data sources and how those potential shortcomings may affect research integrity and the production of knowledge (Deahl, 2014).

This initiative will contribute to the development of data scientists and makers, with the initial baseline goal of bringing students through the "communicator" type into the second order "reader" citizen type identified in the chart above.

As a result of their Tulane education, our students must have the ability to interpret and tell stories about data for others to digest and to interpret the data that is increasingly part of their everyday life.



STUDENT LEARNING OUTCOMES

The Data Hub's overarching goal is to empower students to become better informed citizens in an increasingly data-saturated world. The QEP will contribute to the richness of a Tulane education by developing students' data literacy skills through a variety of learning opportunities including classroom experiences, co-curricular activities, short-form learning modules, public programming, and engagement in research activities. The knowledge and skills students gain will vary based on the activities they participate in; however, each activity will address at least one of the five broad areas of the identified student learning outcomes. Specifically, as a result of participating in experiences provided by The Data Hub, students will be able to:

- 1. Identify the limitations of data sources, analytics employed, and the implications (e.g., factors that may affect data quality, challenges in determining causal relationships, etc.).
- **2.** Accurately interpret and explain information presented in mathematical forms (e.g., equations, graphs, tables, diagrams, etc.).
- **3.** Use the quantitative analysis of data (e.g., descriptive statistics) as the basis for judgments and/or conclusions.
- 4. Represent quantitative information in various forms (e.g., graphs, tables, diagrams, etc.).
- 5. Recognize misleading or inappropriate representations of data.

In keeping with best practices, multiple assessment methods—both direct and indirect—will be employed to assess achievement of each of the learning outcomes. Assessment methods are discussed more fully in the "Assessment" section of this document.



THE DATA HUB & BEST PRACTICES IN DATA LITERACY EDUCATION

Like many forms of education, data literacy benefits from integration into existing pedagogical approaches to develop critical thinking and computational skills through hands-on learning, module-based learning, and real-world project-based learning (Risdale et al., 2015; NASEM, 2018).

Tulane's Data Hub will undertake multiple initiatives to support data-based research and education and create a more vibrant culture of data literacy, analysis, and exploration.

An **annual data theme** (see next page), identified and supported by The Data Hub, will connect the variety of activities through a unified and timely topic to be explored from the perspectives of different disciplines. Tulane has structured The Data Hub to support these approaches through multifaceted activities, connected by the annual data theme. These activities include:

- *Classroom Curriculum:* Develop new courses, and support faculty in modifying existing courses, to integrate the development of data literacy skills into the curriculum.
- *Short-form Learning:* Develop workshops and bootcamps to increase student and faculty capacity in data science, analysis, and literacy.
- **Co-Curricular Experiences:** Develop and support co-curricular opportunities designed to build students' data literacy skills and complement the formal classroom curriculum as well as the short-form learning experiences.
- *Public Programming:* Host programming for the University community and beyond that builds awareness of the increasingly significant role that data is playing in shaping our environment.
- *Research Engagement & Applied Activities:* Provide resources and grants to support data-intensive student research.



Annual Data Theme

The Data Hub will adopt an annual data theme, which will serve as the connection between its many and varied offerings. The annual data theme will be rooted in a topic of shared interest that can be examined through the lens of multiple disciplines and provide a context for broadly collaborative and interdisciplinary scholarship. The Data Hub will collect and curate data related to this theme and help create a culture of data literacy by organizing opportunities for students and all members of the University community to deepen their understanding through data exploration, sharing insights, and the generation of new questions.

The data theme will form the basis for interdisciplinary courses, approaching the data set from multiple perspectives and demonstrating the critical nature of data literacy and the responsible use of data. The culmination of the annual data theme will be University-wide activities during a "Data Week" discussed later in this proposal.

A few examples of potential data themes with unlimited interdisciplinary applications include:

• COVID-19

Data on the spread and impact of SARS-CoV-2 could be formed into a data theme, enabling student study of societal/sociological, economic/employment, health, psychological, legal, and technological impact across all disciplines.

• 2020 Census

The extraordinarily rich United States census data can form the basis of a wide variety of projects, from almost any disciplinary perspective, exploring the country's demographic and economic trends. The analysis can be at the population level, or at the level of individual (de-identified) microdata. These data sets are extremely well-suited for learning about effective data visualization and geographic mapping.

• Health Equity

Data on local and global health outcomes can be explored with a focus on correlations with environmental factors, gender, race and ethnicity.

Sports

For many professional sports, data is publicly and freely available that summarizes outcomes on a playby-play, single-contest or season-long basis. This data can be explored with a focus on how one can predict future performance based on past performance, rigorously assess the contributions of individual players or events to the collective team success, and develop data-informed strategies.

Classroom Curriculum

The need for students to be formally educated in all areas of data literacy is apparent (Mendez-Carbajo, 2020), and the logical place to begin this work is in the classroom (Wolff, 2016).

Students often struggle to present and analyze the vast amount of data at their fingertips, even at the graduate level.



While the demand for a data-literate workforce has grown over the last decade, the development of appropriate skills and talent has lagged (Business Higher Education Forum, 2017).

Introductory courses, in particular, are recognized as an effective way to pique student interest in data literacy, and many recognize that embedding data skills using discipline-specific topics help motivate students to learn the data skills (Albrecht et al., 2020; NASEM, 2018). Locke's approach to incorporating data science in the humanities shows the potential for research expansion by encouraging students to use new types of sources and perform original data analysis (Locke, 2018). The use of introductory courses creates an opportunity for all students to become proficient in data literacy competencies. This will also create foundational knowledge for students who require (or grow to desire) more advanced data analytics skills. Albrecht recognizes that not all students require the same depth of knowledge in data analytics and science and that a foundational course allows for data literacy education to be expanded as appropriate for a student's chosen discipline (Albrecht et al., 2020). Further, some students may benefit from learning data literacy in an interdisciplinary setting (Wolff et al., 2016).

Relying on Tulane's full-time faculty—those with appointments in The Data Hub and across the Schools— The Data Hub will address the needs identified in the literature and contribute to data literacy education by focusing on its integration across the curriculum.

New Course Development & Supporting Integration into Existing Courses

The Data Hub will develop and offer Introduction to Data courses accessible to all students—undergraduate, graduate, or professional—regardless of their intended major or program. Full-time faculty in multiple departments across the University will be invited to lead the development of these courses in order to emphasize the differing perspectives across disciplines.

- The courses will be designed to teach the basic elements of data literacy: interpreting data, learning the power and limitations of data, and recognizing misrepresentations.
- The courses will include a strong focus on data visualization and will introduce the data computing language, *R*, so that students can carry out their own analyses.
- The courses will use the data sets tied to the annual data theme to support a project-based curriculum.
- The courses will explore the current ubiquity of data collection, especially of personal identity and behavior, and how data is being used to personalize digital experiences, so that students can better understand how data is shaping their environment.

The expectation is that all five student learning outcomes will be covered in the Introduction to Data courses.

The Data Hub will also support development of new Tulane Interdisciplinary Experience Seminars (TIDES), Tulane's signature freshman seminar program that began in 2001. To promote multidisciplinary scholarship, all Newcomb-Tulane College undergraduates participate in a TIDES seminar during their first year at Tulane. TIDES courses provide students the opportunity to make meaningful connections with a small group of students and some of the University's best faculty. Active learning, intellectual challenges, and social co-curricular activities define the TIDES experience. For example, a TIDES course focused on data could be structured around the data deluge in a student's daily life and address issues such as personal privacy, large-scale data collection, and targeting advertising in social media (Facebook, etc.).



Further, as Albrecht recommends, The Data Hub will work with Tulane's Center for Public Service (CPS) to coordinate potential application-based learning in the community for faculty developing service-learning courses with a focus on data analytics and for advanced students seeking data-based internships in the community. (Albrecht et al., 2020).

Each year The Data Hub will provide support for faculty to explore the data theme and its associated data sets and consider how best to integrate at least one of the five student learning outcomes into their existing courses. This support will be offered in several forms, including workshops for faculty, learning modules that can be integrated into existing courses, and grants to support course development to facilitate increasing faculty capacity in data literacy education. Tulane's Center for Engaged Learning and Teaching (CELT), with its existing expertise on effective pedagogy and instructional design, will be a crucial partner in this work.

Co-Curricular Experiences

Data literacy education must include co-curricular activities to be truly effective (Albrecht et al., 2020; Vong and Vrkljan, 2020). This includes activities for both students and faculty members.

Students benefit from participation in data-related competitions and access to on-campus data science experts and resources (e.g., computers and software).

To assist in the development of Tulane's programming, the QEP Committee investigated the co-curricular programming of several centers focused on data, primarily data science. These include the following: Cornell's Center for Data Science for Enterprise and Society; Harvard's Data Science Initiative; University of Chicago's Center for Data and Computing; Vanderbilt's Data Science Institute; NYU's Center for Data Science; Berkeley's Institute for Data Science; University of Washington's eScience Institute; University of Michigan's Institute for Data Science; Columbia's Data Science Institute; MIT's Institute for Data, Systems, and Society; and Boston University's Center for Computing and Data Sciences. These centers have the common mission of increasing data science activities on campus. Many of them are focused on providing a home for research collaborations involving data science Institute hosts an annual data science symposium, which allows for graduate student presentations, faculty networking, and guest speakers.

The Data Hub will follow a similar model, developing and organizing co-curricular activities related to the annual data theme. Activities will include data visualization challenges, data hackathon competitions, poster competitions, and other student-based activities, all in support of creating a culture of data literacy and celebrating student accomplishments. Events like hackathons provide a structured time for instruction as well as opportunities for application and project-based learning in an immersive setting. "Core elements of hackathons include opportunities for networking, strengthening social ties, and building community connections, both within and across disciplines" (Huppenkothen, et al., 2018, 8873).

In addition, an annual "Data Week", sponsored by The Data Hub in collaboration with the Schools as described below, will include presentations by students and faculty about their research and class projects related to the annual data theme.



Short-form Learning

Short-form learning includes workshops, bootcamps, and other intensive educational programming. Albrecht recommends that the development of data literacy skills should include the development of data science bootcamps for faculty members (Albrecht et al., 2020). The 2018 report by the National Academies of Sciences, Engineering, and Medicine also recognizes the importance of short-form learning through bootcamps and summer intensive sessions (NASEM, 2018).

It is critical that data literacy education include opportunities for faculty members to educate themselves through professional development workshops and in-services (Mandinach & Gummer, 2013).

This will establish a level of comfort with data literacy topics, which will allow for a more confident integration of concepts into course curricula. All the university data centers discussed above offer regular workshops for both students and faculty members focused on data literacy topics and tutorials of relevant software and technology.

The Data Hub will lead workshops and bootcamps for faculty and students to develop basic skills or learn more about the curated databases supporting the annual data theme. In addition to the educational benefits, small, highly engaged learning experiences build connections among participants and create collaborative networks of students and researchers with shared interests.

Research Engagement and Applied Activities

Research Grants for Students

As Albrecht recognizes, fully understanding data literacy concepts requires both research and co-curricular applied learning opportunities (Albrecht et al., 2020). To increase the capacity among students, The Data Hub will sponsor grants to support undergraduate and graduate students' data-intensive research with faculty and improve data literacy efforts outside of the classroom.

The Data Hub will provide support for undergraduate and graduate student research projects and other opportunities to work with faculty on data analysis projects. And, as Albrecht recommends, it will also work with Tulane's Center for Public Service to coordinate potential application-based learning in the community for faculty developing service-learning courses with a focus on data analytics and for advanced students seeking data-based internships in the community (Albrecht et al., 2020). In all instances, the student research grants will prioritize the use of real-world data and, as feasible, facilitate partnerships with local organizations and businesses. The evaluation and selection process for students will be overseen by faculty in The Data Hub and will be competitive, clear, and transparent.

Further, to provide additional co-curricular applied learning opportunities, The Data Hub will work with Tulane's Center for Public Service to coordinate data-based internships in the community for advanced students seeking further applied experience.



The research supported by student grants will be displayed during the sponsored Data Week, highlighting the work of The Data Hub, celebrating the participating students and faculty, and emphasizing the growing significance of the data-related work taking place across campus.

Technical Support

As evidenced from the above, The Data Hub will be Tulane's central repository for data literacy material and training. It will also play a specific role in training on the use of new and emerging technologies related to data literacy and analysis. The Data Hub will provide resources to train interested students and faculty on the various programming languages and access to raw and curated data sets.

Training and practice activities will help students and faculty learn how to use recent technologies and programs to interact with and manipulate data more effectively.

The Data Hub will staff a support team of graduate and undergraduate students who are prepared to answer basic questions such as, "How do I..." and "Where do I find..." so data and the tools that drive data-based inquiry are more accessible. This team will support activities and programs to reduce student and faculty anxiety around the use and manipulation of data. Additionally, the support team will be very familiar with the materials developed at The Data Hub. The support team, managed by the Senior Program Manager of The Data Hub, will be trained to easily and quickly direct students and staff to existing resources to support their data needs and to suggest new approaches for those unsure of how to approach their data.

Public Programming

The Data Hub will host events for the University community and beyond, including a speaker series and oncampus exhibitions, to raise awareness about the growing role that data plays in shaping our environment.

Everyone should be conscious of how much data is being collected about individual behavior, and how this data is being used to personalize experiences and opportunities—including the news we receive, the way we shop, the entertainment we consume, and the healthcare we have access to.

These speakers will also explore the many moral and ethical questions surrounding the collection, use and ownership of personal data.

Beyond a speaker series, the highlight of The Data Hub's public programming will be the annual celebration of Data Week with an emphasis on the annual data theme. Dedicated to spreading awareness of data, data research and management, and the achievements of our students and researchers, Data Week will include posters and other kinds of presentations of student and faculty work, highlighting both curricular and scientific innovations and achievements. It may also feature plenary presentations by key figures in the fields of data analysis and data science, "lightning" talks by invited guests and Tulane faculty, and workshops on topics relevant to the annual theme.



ACTIONS TO BE IMPLEMENTED

The Data Hub

The Data Hub will be a new campus entity supporting data literacy and awareness among both students and faculty. While this includes new faculty and a designated physical space, much of the work will be done by coordinating and energizing existing University resources. As such, The Data Hub's Executive Director will be selected from the University's existing full-time faculty, and its physical space has been identified in the University's main library, a critical University resource and central place on campus (Appendix L, p. 70).

The Data Hub's primary goal will be to build a campus culture that acknowledges and values the critical role of data in today's world, and the need to be able to analyze questions in a data-informed way, communicate one's findings in a clear and persuasive manner, and critically analyze the data-informed conclusions of others.

The Data Hub's creation reflects that data literacy is an essential competency of active and engaged citizens and a required skill set across all areas of professional opportunities. Programming and coursework through The Data Hub will allow students to learn the basic elements of data analysis and experience firsthand how data is used across industries and in the academy to explore and address the world's most pressing and complex issues.

The Data Hub will:

- Develop and offer Introduction to Data courses, with some courses tailored for specific disciplines.
- Establish an annual data theme and curate related databases.
- Offer workshops to help faculty learn about the data theme and help them think about how to integrate related data-based projects into their courses.
- Build and support materials for integrating data literacy into courses across the curriculum.
- Organize events ranging from hackathons to poster sessions to create a culture of data exploration.
- **Organize public events**, including Data Week, with speakers who will raise interest in data science and build awareness of the role that data is playing in shaping our digital environment.
- Offer a support team to provide technical assistance and training.
- Assess student learning and programmatic effectiveness to ensure continuous improvement.



QEP Implementation Team

Each of the activities outlined in this proposal will require detailed implementation plans, timelines, and resources developed throughout the Spring of 2022 and through The Data Hub's launch in the Fall of 2022. To successfully achieve its goals, The Data Hub will have dedicated space in Tulane's main library (a central location on campus) that will serve as a meeting place, support collaboration, and provide a home for the technical support team. Early in the 2022 calendar year, the first Executive Director of The Data Hub will be selected from the current full-time faculty at Tulane and, in consultation with University leadership, the Director will appoint an Implementation Team with representatives from across campus.

The Implementation Team will ensure that the overall timeline of The Data Hub is being followed, and regularly report on progress and challenges to the Provost. The individual activities and programming within The Data Hub will be the responsibility of the Executive Director and the Data Hub staff, along with a Faculty Advisory Council and a Student Advisory Council (Appendix L, p. 70).

QEP Communication Plan

One of the critical actions for implementation is the formation of a QEP communications strategy. This effort, a collaboration among the central University communications team, The Data Hub staff, and other areas of the University, will be tasked with highlighting the purpose and work of The Data Hub.

For The Data Hub to be successful, it must change the campus culture around the idea of data—data literacy should be seen as approachable, engaging, and necessary across all academic disciplines.

The area of initial focus for The Data Hub will be to create a robust marketing and communication plan integrated into The Data Hub's work. Several of the key initiatives, such as the annual data theme, Data Week, student research grants, and workshops and other activities, need to be broadly publicized to build interest in these new endeavors. The Data Hub will develop an engaging and user-friendly website, which will be the source of information and a gateway to resources for the University and the larger community.

QEP Phases

Tulane will roll out the QEP in phases over the next 5-6 years. This rollout commenced with identifying and developing the Data Literacy QEP in the Spring and Summer of 2021. The activity around the implementation and execution of the QEP will increase in intensity and culminate in the formal launch of The Data Hub in the Fall of 2022.

Planning Phase 1: 2019-2021

This phase focused on the process and development of the QEP and building on existing University support. Through this period, the QEP theme was identified and the Data Literacy QEP Committee was created to articulate a clear vision for this new endeavor. The Committee stated clear goals for Tulane's work in data literacy, identified existing resources around the University, and made formal recommendations. The Data Hub's



assessment framework (Figure 1, p. 38), including both student learning outcomes and program objectives, were identified. A detailed assessment matrix (Figure 2, p. 39 and Figure 3, p. 41) was developed as well as a rubric for direct assessment of student work with respect to the QEP student learning outcomes (Figure 4, p. 45). University leadership then developed a more precise outline, along with staffing requirements and its associated budget.

Planning Phase 2: 2021-2022

Phase 2 is focused on identifying the appropriate resources to ensure a successful submission and implementation. An Executive Director of The Data Hub will be selected from the existing full-time faculty, the QEP Implementation Team will be formed, and the physical location of The Data Hub in the main library will be prepared with the necessary renovations, furniture, and equipment. The QEP Assessment Committee will also be formed once the Executive Director is in place (Appendix L, p. 70). The QEP communication plan will be developed in this phase.

Implementation of the QEP: 2022-2027

Starting in the Fall of 2022, an Executive Director and the initial support staff will be in place and The Data Hub will formally begin its programming.

Year 1

The focus of Year 1 will be to raise The Data Hub's profile on campus through a comprehensive communication plan and to begin implementation of its multiple activities. Once in place, the Executive Director will work with the Implementation Team to refine and finalize plans for The Data Hub activities, including identifying and publicizing the annual data theme, engaging faculty in course development, offering technical support as needed, and hosting University-wide programming such as the University's first Data Week. The QEP Assessment Committee will begin its work, primarily through assessment of student work presented at Data Week. All programming will be assessed based on the program objectives identified.

Year 2-5

In addition to the activities implemented in Year 1, The Data Hub will continue to grow its presence on campus following the implementation plans developed by the Executive Director in collaboration with the Implementation Team. This will include offering Introduction to Data courses, TIDES courses, and other curricular and non-curricular activities. Additionally, each year an annual data theme will be identified and publicized, Data Week and its associated activities will be organized and implemented, and student research grants will be awarded. This work will be guided and supported by a Faculty Advisory Council and a Student Advisory Council. The QEP Assessment Committee will conduct its direct assessment of student coursework and work produced from research engagement activities, and will provide recommendations for improvement, as necessary. The Data Hub staff will continue to assess all programming to determine the extent to which program objectives are being met; adjustments to programming will be made when assessment results identify a need.



TIMELINE

The foundational work to develop the QEP began during the Spring 2019 semester.

Selection of QEP Topic (Spring 2019-Fall 2020):

DATE	ACTION
May 2019	Kick off discussion with Administrative Council (University administrative leadership group) and Academic Affairs Council of the reaccreditation process and QEP
September 2019	University Senate discussion of QEP
November 2019	University-wide communication inviting submission of QEP Themes
March 2020	University-wide communication highlighting broad QEP themes Multiple town halls on reaccreditation and QEP hosted by Provost
September 2020	University-wide communication highlighting broad QEP themes and inviting feedback
November 2020	Administrative Council and Academic Affairs Council discuss QEP idea submissions
January 2021	University-wide communication announcing data literacy as the QEP theme and appointing a representative committee charged with developing a proposal

Development of QEP Plan (Spring 2021- Fall 2021):

DATE	ACTION
January 2021	Established Data Literacy QEP Committee chaired by Dean of School of Science and Engineering with broad student, faculty and staff representation
Spring Semester 2021	Held bi-weekly meetings of Data Literacy QEP Committee Established three subcommittees: Research subcommittee, Education subcommittee and Data Consulting subcommittee
July 2021	Final Report submitted to provost
August- December 2021	Formal QEP proposal developed based on recommendations of the Data Literacy QEP Committee



Implementation Plan (Spring 2022)

- January 2022: Submit QEP proposal to SACSCOC
- Select The Data Hub's Executive Director from the current full-time faculty
- Hiring for The Data Hub:
 - Two Professors of Practice
 - Senior Program Manager
 - Program Coordinator
 - Graduate and undergraduate student assistants
- Form the QEP Implementation Team
- Outfit and finalize The Data Hub's physical location requirements in the main library
- Define a process for identifying the annual data theme, select first data theme (for 2022-2023 academic year), and curate a data set as possible
- Begin to solicit and assist in development of TIDES courses integrating data literacy skills
- Launch a website for The Data Hub
- Form QEP Assessment Committee (Appendix L, p. 70)
- Administer the National Survey of Student Engagement (NSSE), to serve as baseline data
- Administer the Graduating Student Survey to graduating undergraduates, with specific data literacy skills questions, to serve as baseline data

QEP Year 1 Academic Year 2022-2023:

- Create Faculty Advisory Council and Student Advisory Council
- Select and publicize annual data theme for 2023-2024 academic year and curate related data sets
- Develop and offer short-form learning experiences for faculty and students, including bootcamps and workshops related to data literacy
- Develop and host University-wide Data Week and affiliated events
- Identify interested faculty and develop Introduction to Data courses
- Determine criteria and funding amounts for student research grants, publicize and award grants
- Launch technical support services and training
- Continue to execute a communications and publicity campaign to highlight the work of The Data Hub
- Fall 2022: Administer the CIRP Freshman Survey with custom questions to serve as a student "pre" self-assessment of data literacy skills
- Spring 2023: Administer the Graduating Student Survey
- Implement assessment of the effectiveness of The Data Hub programming

QEP Year 2 Academic Year 2023-2024:

- Select annual data theme for 2024-2025 and curate related data sets
- Add an additional Professor of Practice
- Offer Introduction to Data courses integrating the 2023-2024 data theme
- Offer TIDES courses integrating the 2023-2024 data theme, when possible
- Continue to support faculty through course development grants
- Continue to offer short-form learning experiences for faculty and students (workshops, bootcamps, etc.)
- Develop and host Data Week and associated activities
- Review and award student research grants
- · Continue to offer technical support services and training opportunities



- Continue communication and publicity plan
- Evaluate The Data Hub staffing plan for adequacy
- QEP Assessment Committee completes its first cycle of assessment of student work from Data Hubaffiliated courses and work presented at Data Week
- Include questions on course evaluations of Introduction to Data courses, new TIDES courses with data literacy focus, and existing courses integrating data literacy into curriculum
- Fall 2023: Administer the CIRP Freshman Survey with custom questions to serve as a student "pre" self-assessment of data literacy skills
- Spring 2024: Administer the National Survey of Student Engagement
- Spring 2024: Administer the Graduating Student Survey
- Continue to assess the effectiveness of The Data Hub programming
- Hold regular meetings with advisory councils and utilize assessment results for determining any needed changes to improve student learning and the effectiveness of The Data Hub

QEP Year 3 Academic Year 2024-2025:

- · Select annual data theme for 2025-2026 and curate related datasets
- Offer Introduction to Data courses, integrating the 2024-2025 data theme
- Offer TIDES courses integrating the 2024-2025 data theme, when possible
- Continue to support faculty through course development grants
- Continue to offer short-form learning experiences (workshops, bootcamps, etc.)
- Develop and host Data Week and associated activities
- Review and award student research grants
- Continue to offer technical support services and training opportunities
- Continue communication and publicity plan
- Reevaluate The Data Hub staffing plan; add more staff as needed
- Continue the assessment work of the QEP Assessment Committee
- Continue to include questions on course evaluations of Introduction to Data courses, new TIDES courses with data literacy focus, and existing courses integrating data literacy into curriculum
- Fall 2024: Administer the CIRP Freshman Survey with custom questions to serve as a student "pre" self-assessment of data literacy skills
- Spring 2025: Administer the Graduating Student Survey
- Continue to assess the effectiveness of The Data Hub programming
- Hold regular meetings with advisory councils and utilize assessment results for determining any needed changes to improve student learning and the effectiveness of The Data Hub

QEP Year 4 Academic Year 2025-2026:

- Select annual data theme for 2026-2027 and curate related datasets
- Offer Introduction to Data courses, integrating the 2025-2026 data theme
- Offer TIDES courses integrating the 2025-2026 data theme, when possible
- Continue to offer short-form learning experiences (workshops, bootcamps, etc.)
- Develop and host Data Week and associated activities
- · Review and award student research grants
- Continue to offer technical support services and training opportunities
- Continue communication and publicity plan
- · Reevaluate The Data Hub staffing plan; add more staff as needed



- Continue the assessment work of the QEP Assessment Committee
- Continue to include questions on course evaluations of Introduction to Data courses, new TIDES courses with data literacy focus, and existing courses integrating data literacy into curriculum
- Fall 2025: Administer the CIRP Freshman Survey with custom questions to serve as a student "pre" self-assessment of data literacy skills
- Spring 2026: Administer the National Survey of Student Engagement
- Spring 2026: Administer the Graduating Student Survey
- Continue to assess the effectiveness of The Data Hub programming
- Hold regular meetings with advisory councils and utilize assessment results for determining any needed changes to improve student learning and the effectiveness of The Data Hub

QEP Year 5 Academic Year 2026-2027:

- Select annual data theme for 2027-2028 and curate related datasets
- Offer Introduction to Data courses, integrating the 2026-2027 data theme
- Offer TIDES courses integrating the 2026-2027 data theme, when possible
- Continue to offer short-form learning experiences (workshops, bootcamps, etc.)
- Develop and host Data Week and associated activities
- Review and award student research grants
- Continue to offer technical support services and training opportunities
- Continue communication and publicity plan
- Reevaluate The Data Hub staffing plan; add more staff as needed
- Continue the assessment work of the QEP Assessment Committee
- Continue to include questions on course evaluations of Introduction to Data courses, new TIDES courses with data literacy focus, and existing courses integrating data literacy into curriculum
- Fall 2026: Administer the CIRP Freshman Survey with custom questions to serve as a student "pre" self-assessment of data literacy skills
- Spring 2027: Administer the Graduating Student Survey
- Continue to assess the effectiveness of The Data Hub programming
- Hold regular meetings with advisory council, utilize assessment results for determining any needed changes to improve student learning and the effectiveness of The Data Hub and begin planning for development of the QEP Impact Report as part of the University's Fifth-Year Interim Report



ORGANIZATIONAL STRUCTURE

Executive Director

The Data Hub will report up through the academic structures of the University. The Executive Director will report directly to the Provost and will have broad visibility and connections into the senior leadership group through the Provost's office. Tulane has several examples of other centers operating in a similar manner. The Center for Public Service, a cross-campus initiative is one such example; the Center for Engaged Learning & Teaching, the previous QEP designed and implemented during Tulane's last reaccreditation is another example. Tulane, and in particular the Provost, is experienced in managing University-wide entities such as The Data Hub.

The Executive Director of The Data Hub will also serve on the Academic Affairs Council, the council of academic leaders that includes all School deans, institute and center directors, the Dean of Libraries, and others. The Executive Director will also be a member of the Administrative Council at the University, a group of more than 30 leaders from around the University. This group is comprised of academic as well as operational, finance, and communication experts and is relied upon to support campus-wide initiatives.

Senior Program Manager, Program Coordinator and Professors of Practice

Internally, the Executive Director of The Data Hub will oversee the work of a Senior Program Manager and a Program Coordinator and, initially, two Professors of the Practice who will be responsible for instruction as well as for the development and deployment of learning modules and other activities of The Data Hub.

Faculty and Student Advisory Councils and Faculty Assessment Committee

The Executive Director will also be supported by two advisory councils—a Faculty Advisory Council and a Student Advisory Council—and a faculty QEP Assessment Committee to review the achievement of learning outcomes in the Introduction to Data courses and other Data Hub activities. Based on the work of the Implementation Team in the first year of the QEP, the Executive Director will begin the process of formally affiliating faculty across the University to The Data Hub. Faculty affiliates may emerge through participation in Data Hub activities, through teaching Introduction to Data, TIDES or other courses, and/or through research endeavors.

Location

The Data Hub will have designated space in Tulane's main library, Howard-Tilton Memorial Library. This will provide a centralized location on the Uptown campus that is easily accessible to both students and faculty. The library is already a regular and convenient destination for many members of the community, and serves as a symbol of one of the guiding principles of this work—data literacy is a University-wide endeavor and does not fall entirely within one academic discipline or academic school (Appendix L, p. 70).



Office of Academic Affairs & Provost Organizational Chart





The Data Hub Organizational Chart : AY 2026-27





RESOURCES AND BUDGET

The human, physical, and financial resources dedicated to The Data Hub ensure that its mission is properly supported so that it can grow, mature, and become a sustainable part of the University.

Personnel	202	2 (6 mo)	20	22-2023	20	023-2024	20	24-2025	20	25-2026	20	26-2027
Executive Director												
(\$75,000 annual supplement)	\$	44,663	\$	92,005	\$	94,765	\$	97,608	\$	97,608	\$	100,537
Professors of Practice (3)	\$	-	\$	166,740	\$	257,613	\$	265,342	\$	265,342	\$	273,302
Senior Program Manager	\$	37,260	\$	76,756	\$	79,058	\$	81,430	\$	83,872	\$	86,387
Program Coordinator	\$	-	\$	44,712	\$	46,053	\$	47,435	\$	48,857	\$	50,322
Graduate Student Assistants												
(2 Yrs 1-2; 3 Yrs 3-4)	\$	-	\$	26,334	\$	28,215	\$	42,323	\$	42,323	\$	42,323
Undergraduate Student Assistants												
(4 Yrs 1-2; 5 Yrs 3-4)	\$	-	\$	35,112	\$	35,112	\$	43,890	\$	43,890	\$	43,890
The Data Hub Infrastructure and O	pera	tions										
Start-up Operations	\$	10,000	\$	-	\$	-	\$	-	\$	-	\$	-
Operations Space	\$	25,000	\$	150,000	\$	10,000	\$	5,000	\$	5,000	\$	5,000
Operational Supplies	\$	5,000	\$	10,000	\$	10,000	\$	10,000	\$	10,000	\$	10,000
Hardware Purchase	·	,		,		,		,		,		
(Computers, Servers)	\$	10.000	\$	50.000	\$	25,000	\$	10.000	\$	10.000	\$	10.000
Marketing and Communication	\$	10,000	\$	50,000	\$	30,000	\$	30,000	\$	30,000	\$	30,000
Travel	\$	5 000	\$	10,000	\$	10,000	\$	10,000	\$	10,000	\$	10,000
Have	ψ	5,000	ψ	10,000	ψ	10,000	ψ	10,000	ψ	10,000	ψ	10,000
Classroom Curriculum												
Course Development Support												
(Intro to Data, TIDES, Service Learning												
etc.)	\$	-	\$	75,000	\$	75,000	\$	45,000	\$	30,000	\$	25,000
Faculty Stipends for New Course												
Development			\$	75,000	\$	75,000	\$	45,000	\$	25,000	\$	20,000
Shout form Looming												
Workshong Destaming	¢		¢	75 000	¢	50.000	¢	50.000	¢	50.000	¢	50.000
workshops, bootcamps, etc.	Ф	-	Ф	/3,000	Ф	30,000	Ф	30,000	Ф	30,000	Ф	50,000
Co-Curricular Experiences & Public	Pro	ogrammi	nσ									
Data Week Public Events and Guest		5	-9									
Speaker Honoraria	¢		¢	50.000	¢	50.000	¢	50.000	¢	50.000	¢	50.000
Speaker Honoralia	φ	-	φ	30,000	φ	50,000	φ	50,000	φ	50,000	φ	50,000
(Uselasthene Date Viewelingtien												
(Hackathons, Data Visualization			¢	20.000	¢	20.000	¢	20.000	¢	20.000	¢	20.000
Challenges, etc.)			Э	30,000	Э	30,000	Ф	30,000	Э	30,000	Э	30,000
Descench Engagement & Applied As		tion										
Student Bassench Curata	tivii م	lies	¢	50.000	¢	50.000	¢	50.000	¢	50.000	¢	50.000
Student Research Grants	Ф	-	\$	30,000	\$	30,000	Э	30,000	\$	30,000	\$	30,000
Assassment												
Assessment			_		.		<i>•</i>		.			
National Survey of Student Engagement	\$	-	\$	-	\$	12,000	\$	-	\$	12,000	<i>+</i>	
Graduating Student Survey	\$	-	\$	3,000	\$	3,000	\$	3,000	\$	3,000	\$	3,000
Stipends for QEP Assessment			¢	20.000	¢	a a a a a	¢		¢		¢	20.000
Committee Members			\$	30,000	\$	30,000	\$	30,000	\$	30,000	\$	30,000
Totals	\$	146,923	\$	1,099,658	\$	1,000,817	\$	946,028	\$	926,892	\$	919,761
Grand Total 2022-2027	\$	5.040.078										



Start-up: First Six Months of 2022

In the first six months of the launch of The Data Hub, the appointment of a tenured (or tenure-track) faculty member to lead The Data Hub as its Executive Director will be announced. The Director will receive an annual stipend of \$75,000 plus fringe with an annual increase budgeted at 3% for the Executive Director starting at \$44,663 (half of \$75,000 plus fringe) in the initial six-month startup. A Senior Program Manager (full-time staff member) will be hired to assist the Executive Director in managing the operations and finances of the newly formed Data Hub. The starting salary of the Senior Program Manager will be \$60,000 plus fringe with an annual increase at 3% (\$37,260 for the initial six-month startup). \$65,000 is budgeted for start-up operational costs which include travel, supplies, furniture, and fixtures for the new space, marketing, and communications.

First Year 2022-2023

The first full year of The Data Hub, academic year 2022-2023, will be the start of the full run of operations, programming, and activities.

Personnel

Two Professors of the Practice will begin in July 2022 with a starting salary of \$70,000 each plus fringe. The Professors of Practice will teach Introduction to Data courses and organize bootcamps, workshops, competitions, and other activities. Graduate Assistants and four Undergraduate Assistants will begin work at \$15 an hour and \$10 an hour, respectively, for 20 hours a week, or \$16,800 and \$25,200 plus fringe, respectively. The student assistants will work as tutors and mentors, and will comprise the support team charged with providing technical assistance and training.

The Data Hub Infrastructure and Operations

Operational and infrastructural expenses are budgeted at \$270,000 in year one. \$150,000 is budgeted for the purchase of office furniture and fixtures for its new space as new staff and faculty are onboarded. \$10,000 is budgeted for operational supplies and minor equipment. \$50,000 is budgeted for additional equipment needs, particularly for technical support as additional programmatic activities start up around data literacy and outreach. \$50,000 is budgeted for marketing and communications in year one. \$10,000 is budgeted for travel for staff and faculty associated with The Data Hub to attend conferences and workshops and meet with external constituents.

Classroom Curriculum

The Data Hub will begin the development of new courses and support faculty in modifying existing courses to integrate the development of data literacy skills into the curriculum with a budget of \$150,000 in year one. \$75,000 is budgeted to support course development through workshops and trainings and \$75,000 as one-time stipends to faculty to develop new courses.


Short-form Learning

The Data Hub will offer regular workshops, bootcamps, and other activities to increase student and faculty capacity in data science, analysis, and literacy with a budget of \$75,000 in year one for designing and implementing these activities.

Co-Curricular Experiences and Public Programming

\$80,000 is budgeted in year one for co-curricular activities and public programming. This includes a speaker series, Data Week speakers and events, data visualization challenges and hackathon-type competitions, and other potential expenses associated with on-campus exhibitions related to data literacy and data science.

Research Engagement and Applied Activities

\$50,000 is budgeted in year one for research engagement which includes funding for summer research grants for undergraduate and graduate students.

Assessment

In year one, \$3,000 is budgeted to incentivize students to participate in the Graduating Student Survey. The administration of, and incentives for, the 2022 National Survey of Student Engagement have already been budgeted in the Office of Assessment and Institutional Research's fiscal year 2022 budget. The budget also includes \$30,000 in stipends for the QEP Assessment Committees.

Years Two Through Five 2023-2027

Personnel

The personnel budget is \$615,817 in year two; \$628,028 in year three; \$616,892 in year four; and \$621,761 in year five. A 3% increase in salary for merit for all faculty and staff each year has been included in the budget. The budget includes one more Professor of Practice faculty position in year three to assist in teaching the Introduction to Data courses as well as more advanced data literacy courses. Additional funds for graduate and undergraduate students in year 3 will allow them to offer increased technical support activities.

The Data Hub Infrastructure and Operations

Operational and infrastructural expenses are budgeted at \$85,000 in year two and \$65,000 in years three through five. After year two, The Data Hub operations will fall into a more regular pace of spending on maintenance and daily infrastructural and operational needs.

Classroom Curriculum

The budget for curricular initiatives is \$150,000 in years two and three; \$90,000 in year four; and \$55,000 and \$45,000 in years four and five, respectively. Support for course development and stipends to faculty decrease over time as the Introduction to Data and other courses are developed and implemented, with resources shifting towards facilitating the creation of more advanced data literacy courses and refreshing already established courses.



Short-form Learning

The budget for the development of short-form learning activities (workshops, bootcamps, etc.) is \$50,000 in year two and thereafter.

Co-Curricular Experiences and Public Programming

\$80,000 is budgeted in years two through five for co-curricular activities and public programming, including Data Week events.

Research Engagement and Applied Activities

\$50,000 is budgeted in years two through five for research engagement through grants for students.

Assessment

Assessment initiatives are budgeted at \$15,000 in year two and four and \$3,000 in years three and five. \$12,000 is budgeted in years two and four for increasing the frequency of the National Survey of Student Engagement (NSSE) to every other year instead of the University's current cadence of every three years. This includes \$9,000 for the survey administration and \$3,000 for marketing and incentives for student participation. Also continued is \$3,000 per year in funding for incentives for students participating in the Graduating Student Survey, to which questions will be added about data literacy skills and data literacy education at Tulane. \$30,000 is budgeted in years two through five for stipends for faculty participating in the assessment process as members of the QEP Assessment Committee.



ASSESSMENT

The framework for assessment of The Data Hub is based on two overarching goals (Figure 1, p. 38):

- Enhance the data literacy skills of Tulane students to become "readers" on the data literacy continuum—those who have the ability to "critique and interpret data" that is increasingly present in their everyday life (QEP Goal 1).
- **Create a culture of data literacy** by providing resources, tools, and support that facilitate the integration of data literacy education into the curriculum, co-curricular activities, public programming, and research (QEP Goal 2).

Figure 1 details the student learning outcomes for Goal 1 and the programming objectives for Goal 2.

Assessment of The Data Hub will determine:

- the extent to which students participating in The Data Hub activities are achieving the desired learning outcomes necessary to achieve the skills of a "reader" (p. 15), and
- the effectiveness of resources provided to integrate data literacy into the curriculum, co-curricular activities, public programming, and research and applied projects.

Information gathered through assessment processes will be used by The Data Hub Executive Director, affiliated faculty (affiliated through teaching, participation in Data Hub activities, committee and/or advisory council work), and the Office of Academic Affairs to understand the impact of The Data Hub at Tulane and to help inform decisions about any necessary adjustments to activities to improve achievement of student learning outcomes and the effectiveness of programming.

Each of The Data Hub's sponsored initiatives will be assessed through one or more of the following lenses:

- Impact on student learning
- Impact on the curriculum
- Self-assessment of learning
- Rates of participation and satisfaction

Direct assessments, which measure student achievement of the QEP's student learning outcomes, will be the primary method of assessing the impact of the QEP on student learning and will be incorporated into several of The Data Hub's activities (e.g., classroom curriculum, short-form learning experiences, and co-curricular activities). Indirect assessments are self-reports that do not directly measure student learning, but will allow for measuring changes in attitudes, beliefs, and behaviors. These assessments will complement the direct assessment and provide further information about the achievement of student learning outcomes and the effectiveness of programming.

The following details both the assessment of student learning outcomes and the assessment of program objectives. The Assessment Matrix (Figure 2, p. 39 and Figure 3, p. 41) summarizes the assessment processes and how both direct and indirect methods will be employed to assess student learning and program effectiveness of the The Data Hub.



FIGURE 1

Assessment Framework

Student Learning Outcomes

Identify limitations of data sources, analytics employed, and the implications (e.g., factors that may affect data quality, challenges in determining causal relationships, etc.).

QEP Goal 1: Enhance Data Literacy Skills

Enhance student learning by engaging students in experiences designed to increase their data literacy skills. Accurately interpret and explain information presented in mathematical forms (e.g., equations, graphs, tables, diagrams, etc.).

Use the quantitative analysis of data (e.g., descriptive statistics) as the basis for thoughtful judgments and/or conclusions.

Represent quantitative information in various forms (e.g., graphs, tables, diagrams, etc.).

Recognize misleading or inappropriate representations of data.

Programming Objectives

QEP Goal 2: Create a Culture of Data Literacy

Provide resources, tools, and support to facilitate the integration of data literacy education into the curriculum, co-curricular activities, and research. Increase prevalence of data literacy in the curriculum.

Increase students' active engagement with data.

Increase research opportunities for students.

Increase opportunities for critically evaluating the role data plays in our environment.



FIGURE 2

The Data Hub Assessment Matrix: Student Learning Outcomes

STUDENT LEARNING OUTCOME	ASSESSMENT METHOD	DESIRED LEVEL OF ACHIEVEMENT	SCHEDULE	RESPONSIBILITY
Identify the limitations of data sources, analytics employed, and the implications (e.g., factors that may affect data quality, challenges in determining causal relationships, etc.).	Direct assessment of student coursework and work produced from research engagement activities using the Inquiry and Analysis VALUE Rubric Item (adapted) – <i>Limitations and Implications</i>	Initial desired level of achievement is an average of 3 on the 4 scale.	End of Fall and Spring semesters (coursework) Annually at Data Week (presentations and posters from research engagement activities)	Instructors and QEP Assessment Committee
	Course Evaluation Custom Question 1	Minimum of 80% responding, "Strongly Agree" or "Agree."	End of Fall and Spring semesters	Instructors and OAIR
	Pre-Self-Assessment: CIRP Custom Question 1 vs. Post-Self-Assessment: GS Survey QEP Custom Question 1	Baseline data will be collected in Spring 2022 and Fall 2022.	Annually, CIRP in Fall and GS in Spring	Data Hub Staff, OAIR and NTC Career Services
Accurately interpret and explain information presented in mathematical forms (e.g., equations, graphs, tables, diagrams, etc.).	Direct assessment of student coursework and work produced from research engagement activities using the Quantitative Literacy VALUE Rubric Item – <i>Interpretation</i>	Initial desired level of achievement is an average of 3 on the 4 scale.	End of Fall and Spring semesters (coursework) Annually at Data Week (presentations and posters from research engagement activities)	Instructors and QEP Assessment Committee
	Course Evaluation Custom Question 2	Minimum of 80% responding, "Strongly Agree" or "Agree."	End of Fall and Spring semesters	Instructors and OAIR
	Pre-Self-Assessment: CIRP Custom Question 2 vs. Post-Self-Assessment: GS Survey QEP Custom Question 2	Baseline data will be collected in Spring 2022 and Fall 2022.	Annually, CIRP in Fall and GS in Spring	Data Hub Staff, OAIR and NTC Career Services
Use the quantitative analysis of data (e.g., descriptive statistics) as the basis for judgments and/or conclusions.	Direct assessment of student coursework and work produced from research engagement activities using the Quantitative Literacy VALUE Rubric Item – Application/ Analysis	Initial desired level of achievement is an average of 3 on the 4 scale.	End of Fall and Spring semesters (coursework) Annually at Data Week (presentations and posters from research engagement activities)	Instructors and QEP Assessment Committee
	Course Evaluation Custom Question 3	Minimum of 80% responding, "Strongly Agree" or "Agree."	End of Fall and Spring semesters	Instructors and OAIR
	Pre-Self-Assessment: CIRP Custom Question 3 vs. Post-Self-Assessment: GS Survey QEP Custom Question 3	Baseline data will be collected in Spring 2022 and Fall 2022.	Annually, CIRP in Fall and GS in Spring	Data Hub Staff, OAIR and NTC Career Services
	NSSE item 18d	Baseline data will be collected in Spring 2022.	Every other year: 2022, 2024, 2026	OAIR and NTC



STUDENT LEARNING OUTCOME	ASSESSMENT METHOD	DESIRED LEVEL OF ACHIEVEMENT	SCHEDULE	RESPONSIBILITY
Represent quantitative information in various forms (e.g., graphs, tables, diagrams, etc.).	Direct assessment of student coursework and work produced from research engagement activities using the Quantitative Literacy VALUE Rubric Item – <i>Representation</i>	Initial desired level of achievement is an average of 3 on the 4 scale.	End of Fall and Spring semesters (coursework) Annually at Data Week (presentations and posters from research engagement activities)	Instructors and QEP Assessment Committee
	Course Evaluation Custom Question 4	Minimum of 80% responding, "Strongly Agree" or "Agree."	End of Fall and Spring semesters	Instructors and OAIR
	Pre-Self-Assessment: CIRP Custom Question 4 vs. Post-Self-Assessment: GS Survey QEP Custom Question 4	Baseline data will be collected in Spring 2022 and Fall 2022.	Annually, CIRP in Fall and GS in Spring	Data Hub Staff, OAIR and NTC Career Services
Recognize misleading or inappropriate representations of data.	Direct assessment of student coursework and work produced from research engagement activities using the Rubric Item – <i>Misrepresentation</i>	Initial desired level of achievement is an average of 3 on the 4 scale.	End of Fall and Spring semesters (coursework) Annually at Data Week (presentations and posters from research engagement activities)	Data Hub Staff, OAIR and NTC Career Services
	Course Evaluation Custom Question 5	Minimum of 80% responding, "Strongly Agree" or "Agree."	End of Fall and Spring semesters	Instructors and OAIR
	Pre-Self-Assessment: CIRP Custom Question 5 vs. Post-Self-Assessment: GS Survey QEP Custom Question 5	Baseline data will be collected in Fall 2022 and Spring 2022.	Annually, CIRP in Fall and GS in Spring	Data Hub Staff, OAIR and NTC Career Services

Assessment Matrix Acronyms

- CELT: Center for Engaged Learning and Teaching
- CIRP: The CIRP Freshman Survey, administered by the University of California Los Angeles' (UCLA) Higher Education Research Institute
- GS Survey: Graduating Student Survey
- NSSE: National Survey on Student Engagement, administered by the University of Indiana -Bloomington's Center for Postsecondary Research
- NTC: Tulane University's Newcomb-Tulane College, the home of the traditional, residential undergraduate experience
- OAIR: Tulane University's Office of Assessment and Institutional Research



FIGURE 3

The Data Hub Assessment Matrix: Program Objectives

PROGRAM OBJECTIVE	ASSESSMENT METHOD	DESIRED LEVEL OF ACHIEVEMENT	SCHEDULE	RESPONSIBILITY
Increase prevalence of data literacy in the curriculum.	Number of courses incorporating data literacy skills into the syllabus	Baseline course data will be collected using Fall 2021 and Spring 2022 courses.	Courses/syllabi counted each semester.	Data Hub Staff and CELT
	Workshop attendance and satisfaction surveys	Criteria for success to be determined when baseline data is collected.	Attendance counted for each workshop. Satisfaction survey conducted at end of workshop.	Data Hub Staff and CELT
	Workshop follow-up surveys		Follow-up survey conducted four weeks later.	Data Hub Staff and CELT
	Number of course development grants awarded	Receive a large enough number of strong applications for course development grants to allow for awarding the maximum number of grants with available funding.	Number of course development grants awarded with each grant cycle.	Data Hub Staff and CELT
Increase students' active engagement with data.	Data Literacy Skills Rubric completed by members of QEP Assessment Committee who will attend poster sessions	The expectation for poster sessions is that there will be an increase in the number of students in each of the categories within the skills continuum. The baseline is to be determined after the initial poster session.	Poster sessions will occur annually during Data Week.	QEP Assessment Committee
	Number of students participating in hackathon/ data visualization competitions	These are new activities for the University. The intent is that participation and satisfaction	Participation counted at each event through registration or door counts.	Data Hub Staff
	Number of students attending and participating in various Data Week events	will increase each year.		Data Hub Staff
	Competition/event satisfaction surveys		Surveys conducted at each event conclusion.	Data Hub Staff
Increase and support research opportunities for	Number of students engaged in research with a faculty member from a Data Hub grant		Students counted each semester.	Data Hub Staff
students.	Number of faculty receiving a Data Hub grant		Faculty counted annually with each grant cycle.	Data Hub Staff
	NSSE item 11e (student report of activity)	Baseline NSSE data will be collected in Spring 2022.	Every other year: 2022, 2024, 2026	OAIR
	Number of questions resolved and satisfaction with technical support	Criteria for success will be determined in consultation with other Help Desk/Support Services on campus.	Data collected at the conclusion of each interaction/ support provided.	Data Hub Staff



PROGRAM OBJECTIVE	ASSESSMENT METHOD	DESIRED LEVEL OF ACHIEVEMENT	SCHEDULE	RESPONSIBILITY
Increase opportunities for critically evaluating the role data plays in our environment.	Number of students attending public programming events	These are new activities for the University. The intent is that participation and satisfaction will increase each year.	Participation counted at each event through registration or door counts.	Data Hub Staff
	Event satisfaction surveys		Surveys conducted at event conclusion.	Data Hub Staff

Assessment Matrix Acronyms

- CELT: Center for Engaged Learning and Teaching
- CIRP: The CIRP Freshman Survey, administered by the University of California Los Angeles' (UCLA) Higher Education Research Institute
- GS Survey: Graduating Student Survey
- NSSE: National Survey on Student Engagement, administered by the University of Indiana -Bloomington's Center for Postsecondary Research
- NTC: Tulane University's Newcomb-Tulane College, the home of the traditional, residential undergraduate experience
- OAIR: Tulane University's Office of Assessment and Institutional Research



Assessment of Student Learning

The primary method of assessing the QEP's impact on student learning will be through evaluation of student work by Tulane faculty members. A Data Literacy Skills Student Learning Outcomes Rubric (Figure 4, p. 45) has been developed for this purpose.

The Data Literacy Skills rubric adapts several outcomes from the Association of American Colleges & Universities' Quantitative Literacy VALUE (Valid Assessment of Learning in Undergraduate Education) Rubric and an item from the Inquiry and Analysis VALUE Rubric to ensure that the direct assessments are aligned with the QEP's student learning outcomes⁶ and to address The Data Hub's unique goals.

Coursework

The rubric will be made available to faculty in the *Commons* and *Gradebook* areas of Tulane's Learning Management System (Canvas) facilitating ease of use for instructors. The rubric will be used by the instructor to evaluate student work in the Introduction to Data course sections, the designated TIDES sections, and in all newly developed/revised courses integrating data literacy skills into the curriculum. As the TIDES courses are developed and existing courses are modified, faculty will be required to align assignments with at least one of the data literacy skills student learning outcomes. The Introduction to Data course will address all of the student learning outcomes.

In addition to the course instructor's evaluation of the student work in their course, student work will be evaluated by the QEP Assessment Committee. The QEP Assessment Committee, appointed by the Executive Director, will be comprised of one full-time faculty member representing each of the Tulane Schools offering undergraduate majors, as well as Newcomb-Tulane College. The University's Director of Assessment will provide training and support for this assessment process, which will be staffed by The Data Hub's Senior Program Manager.

Following each semester, the Committee will be responsible for evaluating a sample of student work—using the Data Literacy Skills Student Learning Outcomes Rubric—from each of the course types discussed above. For the assessment of the Introduction to Data courses, instructors of these courses will also participate in the process. The assessment of TIDES courses will be limited to the student learning outcomes addressed by the course (which will vary from course to course). The same will be true for other courses that address the data learning outcomes only partially.

Initially, the Committee is expected to evaluate a sample of approximately 10% of the student work. Each artifact will be evaluated by two committee members, thus resulting in three different faculty members (the course instructor and the committee members) evaluating the work. In the event that the scores differ significantly, an additional member of the committee will be asked to review the work and any necessary recalibrations of scoring will be discussed and handled among the committee. As The Data Hub and its assessment process matures and more courses (and therefore artifacts) become available, consideration will be given to evaluating a smaller sample of student work and/or having the artifact reviewed by only one committee member.

⁶ In 2009, the Association of American Colleges & Universities released a set of 15 rubrics through which institutions can evaluate students across programs and courses. The VALUE (Valid Assessment of Learning in Undergraduate Education) rubrics were developed by faculty and assessment expert teams across the country and have been used by more than 2,100 colleges and universities (from http://www.aacu.org/value/index.cfm).



Student work produced through the research engagement activities funded by The Data Hub will also be assessed for achievement of the student learning outcomes. Data Week will include presentations and poster sessions of student work as part of the QEP funded research activities. Members of the QEP Assessment Committee will attend, engage in detailed discussions with the students, and assess the students' work using the Data Literacy Skills Student Learning Outcomes Rubric. If the specific student learning outcomes were not addressed through the project work, achievement of the learning outcome will not be assessed.

Indirect methods will also be used to determine perceived achievement of the student learning outcomes through coursework, short-form learning experiences (e.g., bootcamps and workshops), and events. Course evaluations will include items asking students to self-assess the course's contribution to their achievement of each learning outcome. Similarly, learning through short-form learning experiences (e.g., bootcamps and workshops) and events will be captured through satisfaction surveys.

The QEP Assessment Committee will provide an annual report to the QEP Executive Director, including results of the student learning assessment process and any recommendations for where there are opportunities for improvement. This report will inform the larger annual report for The Data Hub, as well as the annual assessment process for academic units. The Committee will also be responsible for maintaining and updating the Data Literacy Skills Student Learning Outcomes Rubric and making any recommendations for improvements to the direct assessment process, as necessary.

Culminating Assessment: Pre- and Post-Self Assessments

In addition to the methods discussed above—that often are tied to a specific course or event—an overall assessment of student learning in data literacy will also be employed. The combination of the CIRP Freshman Survey (CIRP), the National Survey of Student Engagement (NSSE), and Tulane's Graduating Student Survey/ First-Destination Survey⁷ will provide an opportunity to compare self-assessments of achievement of learning outcomes by undergraduate students in their first year to those in their senior year.

Custom questions on the CIRP Freshman Survey will be used as a pre-test and custom questions on the Graduating Student Survey will be used as a post-test. The self-assessments of all first-year students and all graduating students will serve as cross-sectional data sets for the first several years. The Graduating Student Survey data will be analyzed, comparing those students who engaged in QEP-related courses (i.e., took the Introduction to Data course, a new or existing course that had data literacy skills integrated into its syllabus as a result of the QEP, and/ or completed one of the short-form learning activities) with those who did not engage in any of those formal instructional modes, once enough data is available. In Fall 2026, we hope to compare Spring 2026 graduates' self-assessment on the Graduating Student Survey with their self-assessment on the CIRP in Fall 2022.

Similar to the Graduating Student Survey, the NSSE item 18d⁸ will also be used specifically to assess student learning outcome #3 (Application/Analysis). When sufficient data is available, responses of students who engaged with QEP formal instruction and research will be compared to those who did not to determine any differences in self-assessment by those who engaged with QEP experiences.

⁸ Indiana University's Center for Postsecondary Research's National Survey of Student Engagement, 2021 U.S. English Version Survey Instrument Item: 18. How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas? *Response options: Very much, Quite a bit, Some, Very little* d. Analyzing numerical and statistical information



⁷ The Graduating Student Survey is based on the National Association of Colleges and Employers First-Destination Survey, capturing information on Tulane graduating students and their post-graduation plans. Questions asking students to self-assess their data literacy skills will be appended to this survey beginning in Spring 2022.

FIGURE 4

Data Literacy Skills Student Learning Outcomes Rubric

	CAPSTONE	MILESTONES		BENCHMARK
	4	3	2	1
Limitations and Implications* Identify limitations of data sources, analytics employed, and the implications.	Discusses in detail relevant and supported limitations of data sources, the analytics employed, and insightful implications of the limitations.	Discusses relevant and supported limitations of the data sources, the analytics employed and implications.	Presents relevant and supported limitations and implications of data sources with minimal discussion of analytics employed and minimal discussion of the implications.	Identifies limitations and implications of data sources but provides minimal discussion of analytics employed and no relevant implications.
Interpretation** Accurately interpret and explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.	Provides accurate explanations of information presented in mathematical forms. For instance, accurately explains the trend data shown in a graph.	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.
Application / Analysis** Use the quantitative analysis of data as the basis for judgments and/or conclusions.	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.
Representation** Represent quantitative information in various forms (e.g., equations, graphs, diagrams, tables, words).	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Misrepresentation Recognize misleading or inappropriate representations of data.	Discusses in detail representations of data, indicating ways that it is misleading and the implications. Provides appropriate alternative ways for accurately representing the data.	Discusses representations of data, recognizing inappropriate representations, and provides alternative representations.	Recognizes inappropriate representations of data and is able to explain how it is misleading but is unable to provide implications or alternative representations.	Recognizes inappropriate representation of data but is unable to provide explanations as to how it is misleading or to provide alternative representations.

This rubric was created using the Association of American Colleges & Universities (AAC&U) Quantitative Literacy and Inquiry and Analysis VALUE Rubrics. Retrieved from https://www.aacu.org/value-rubrics.

*Adapted from the AAC&U Inquiry and Analysis VALUE Rubric.

**Adapted from the AAC&U Quantitative Literacy VALUE Rubric.



Assessment of Program Effectiveness

An evaluation of the effectiveness of The Data Hub will complement the assessment of student learning discussed above. Purposeful evaluation of each of The Data Hub's activities will provide information regarding the extent to which the initiatives contribute to the QEP's overall goals. In particular, there are four program objectives that support the QEP's goal of creating a culture of data literacy and providing resources, tools, and support to facilitate the integration of data literacy education into the curriculum, co-curricular activities, and research-related activities:

- Increase prevalence of data literacy in the curriculum.
- Increase students' active engagement with data.
- Increase research opportunities for students.
- Increase opportunities for critically evaluating the role data plays in our environment.

Figure 1 diagrams the framework for the QEP assessment including the overarching goals, student learning outcomes, and program objectives. The extent to which each of the program objectives are achieved will be measured using indicators including participation rates and satisfaction with workshops, events, and services (Figure 3, p. 41).

Utilizing Assessment Results

The data gathered from student work, exams, evaluations, and surveys to measure student learning outcomes and achievement of program objectives will be used by The Data Hub's Executive Director, affiliated faculty, and the Office of Academic Affairs for both formative and summative purposes. Assessment data will be used to make programmatic decisions and ensure that the activities of The Data Hub are impactful for participants.

The Data Hub will participate in the same annual assessment and planning process as all other academic and administrative units at Tulane, specifically the model followed by the Schools. This process requires that the units develop learning outcomes/program objectives, assess the achievement of those outcomes, analyze the data and information, and use those results to inform decisions about any necessary adjustments for improvement. The Executive Director will report this assessment and evaluation work annually to the Senior Vice President for Academic Affairs and Provost, who ultimately oversees The Data Hub.

An annual report will also be prepared for the QEP Faculty Advisory Council and Student Advisory Council committees to be created by the Executive Director, once appointed. The report will include a summary of the year's activities, participation in those activities, satisfaction with those activities, and a summary of achievement of the QEP's learning outcomes. Recommendations for improvement will also be included. The annual report will also be shared with the Provost, other University partners, and key stakeholders to ensure the QEP goals are being met and improvements are being made, as necessary.



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APPENDIX A

Provost Email – Call for QEP Idea Submissions – November 2019

From:
To:
Subject:
Date:
Attachments:

Provost allfaculty-l@listserv.tulane.edu Accreditation and the Quality Enhancement Plan Monday, November 4, 2019 10:47:48 AM image001.png

Dear Faculty Colleagues,

As you may know, every institution of higher ed in the United States must be accredited by the appropriate regional accrediting agency in order to be formally recognized as an institution in good standing. In particular, students can only apply federal financial aid at accredited institutions and federal research funding is restricted to accredited institutions. Our regional accrediting agency is SACSCOC (the Southern Association of Colleges and Schools Commission on Colleges), and we go through a full reaccreditation process every ten years, with a mid-cycle review five years after each reaccreditation (although our most recent mid-cycle review had been postponed by one year). With the recent successful completion of our mid-cycle accreditation review, we have now begun in earnest the work to prepare for our next decennial accreditation, which will take place in about 2 ½ years. This university-wide process, which results in the official certification of Tulane University, is absolutely essential work and will require the participation of many members of our community, so thank you all in advance for your understanding, support and cooperation. I am especially grateful to Luann White, Senior Associate Dean at the School of Public Health and Tropical Medicine, for agreeing to serve as the chair of this process, and to Jessica Shedd, Assistant Provost of Assessment and Institutional Research, and her team, for all of the work they have been doing and will continue to do to guide us successfully through this process.

I am writing, though, about one particular element of our accreditation process, namely the Quality Enhancement Plan (QEP) (<u>http://sacscoc.org/pdf/081705/Quality%20Enhancement%20Plan.pdf</u>). As part of our official accreditation submission, we are required to submit a plan for a new or dramatically enhanced effort that will improve the learning and/or success of our students as identified by specific measurable outcomes. (For context, in our most recent accreditation in 2011, our QEP was the creation of CELT.) With this email we are beginning a campus-wise conversation about the QEP. So please give this some thought, and pass along any ideas. We will be hosting open discussions about the accreditation process and the QEP in the coming weeks and months. Should you wish to submit an idea at this point, a brief paragraph or two, and no more than a page, is sufficient. We will select a subset of the proposals to be expanded for broader review later in the spring. Please submit your ideas here <u>https://oair.tulane.edu/node/2602</u> no later than December 31, 2019.

Things to keep in mind: 1) A successful QEP must Impact a significant percentage of your students, but need not directly impact all. 2) It need not be focused on undergraduate students, even though most do have that focus. 3) The success of the program must be tied to precise, measurable learning outcomes, which typically means specific areas of expected academic growth. You do not have to make these learning outcomes explicit at this stage, but a successful proposal should lend itself to this kind of analysis.

Finally, I want to emphasize that this is a lengthy process. This year we will choose the focus of our



QEP. Our work next year will be to flesh it out in more detail, developing a full proposal, and we will submit it in the fall of 2021. While the QEP generally requires focused investment, we cannot make that investment, or do the work we propose, until SACSCOC formally approves the plan, which will occur no sooner than the summer of 2022, so this is not the appropriate process for any urgent needs.

I encourage you to be creative and ambitious in thinking about what we might do to enhance the educational opportunities we offer our students, and to share your ideas with us and others.

Best,

Robin

Robin Forman

Senior Vice President for Academic Affairs and Provost Professor of Mathematics Tulane University 6823 St. Charles Avenue 200 Gibson Hall New Orleans, LA 70118 504.865.5261 www.provost.tulane.edu





APPENDIX B

Tulane Today **Announcement – Call for QEP Idea Submissions – November 2019**







RESEARCHinREAL TIME

<u>Tulane awarded \$1.5</u> <u>million for tuberculosis</u> <u>vaccine research</u>

The Tulane National Primate Research Center was awarded a grant to help researchers find a more effective vaccine against tuberculosis. Skip Bohm, DVM, associate director and chief veterinary medical officer (left), and Jay Rappaport, TNPRC director, will lead the effort.

Read More



<u>Tulane celebrates</u> <u>Thanksgiving with Fall</u> <u>Harvest Festival tradition</u>

The Office of Multicultural Affairs and the Office of International Students and Scholars held the annual Fall Harvest Festival on Nov. 26 in the Lavin-Bernick Center for University Life. The event is a Tulane tradition that supports the student, faculty and staff community who may not be able to make it home for Thanksgiving.

Read More

ANNOUNCEMENTS

Quality Enhancement Plan submissions

As part of Tulane's reaccreditation process, the university is required to submit a Quality Enhancement Plan (QEP) for new or enhanced efforts to improve the learning and/or success of students. Ideas for this plan can be submitted <u>here</u> no later than Dec. 31. For more information, <u>click here</u>.

Howard-Tilton Memorial Library Thanksgiving break hours

The Howard-Tilton Memorial Library will be open today until 5 p.m. The library will be closed



Nov. 28 and 29 and will reopen Nov. 30 from 9 a.m. to 9:45 p.m. For more information on the library's hours, <u>click here</u>.

FEATURED EVENTS

Still Beginning: The 30th Annual Day With(out) Art

The Newcomb Art Museum, in partnership with the Office of Gender and Sexual Diversity at Tulane and the Carolyn Barber-Pierre Center for Intercultural Life at Tulane, will host a free screening of "Still Beginning" on Dec. 3 at 7 p.m. in Freeman Auditorium. "Still Beginning" is a program of seven commissioned videos responding to the ongoing HIV/AIDS epidemic. The screening is part of Visual AIDS' 30th annual Day With(out) Art. For more information, <u>click here</u>.

View All Events

EVENTS

Nov. 28

Thanksgiving holiday

Nov. 29

Thanksgiving holiday

Dec. 1

<u>Tulane men's basketball vs. Southern</u> <u>University</u>

Dec. 2

SoPA Admissions Webinar: Public Relations & Marketing

Coastal New Orleans: Lost Communities of the Urban Delta, 1820s-1920s

IN THE NEWS

The Appeal

Tulane School of Medicine researchers found that formerly incarcerated men in Louisiana who served long sentences had trouble accessing doctors, did not trust the doctors who treated them, and were prevented from seeing specialists.

CityBusiness

Tulane School of Medicine will expand its pediatric medical education program through a new agreement between Children's Hospital and Willis-Knighton Health System.

Nola.com

Columnist Mike Scott examines the original location of Tulane University.







APPENDIX C

QEP Website Idea Submission Form

Home As part of Tulane's upcoming SACSCOC Decennial Reaffirmation of accreditation, Pr Forman is soliciting ideas for the university's next Quality Enhancement Plan (QEP). Please use the form below to submit your idea(s). The QEP must be a new or dramatically enhanced effort that will improve the learning and/or success of our students as identified by specific measurable outcomes. Please keep in mind: 1. A successful QEP must impact a significant percentage of your students, but need directly impact all. 2. It need not be focused on undergraduate students, even though most do have that focus. 3. The success of the program must be tied to precise, measurable learning outcomes which typically means specific areas of expected academic growth. These learning outcomes do not need to be explicit at this stage, but a successful proposal should itself to this kind of analysis. Submissions need not be more than a paragraph in length and are limited to 500 wore subset of the proposal submissions will be selected to be expanded on for broader ref in the spring. Flated Resources: • SACSCOC Quality Enhancement Plan (QEP) requirements • Provest Forman's Call for Idea Submissions	
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7/10/2021	Quality Enhancement Plan (QEP) OAIR	
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APPENDIX D

Provost Email – Announcement of Emerging QEP Themes – March 2020

Shedd, Je	ssica M
From: Sent: To: Subject:	Provost <provost@tulane.edu> Monday, March 2, 2020 10:31 AM Shedd, Jessica M Update on the QEP</provost@tulane.edu>
	Ψ
	Dear Colleagues,
	I am writing to provide an update on our process to determine the Quality Enhancement Plan (QEP) that we will submit as an element of our reaccreditation process with the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Thank you to everyone who submitted a proposal. Several of the proposals we received cluster around six themes:
	1. Writing and Communication: Expand our undergraduate writing center to include broader communication skills (e.g. presentation and collaboration) and/or provide more writing and communication support for graduate and professional students.
	2. Undergraduate Research: Expand the opportunities for undergraduates to participate in independent research and make it easier for students to explore these options.
	3. Active and Engaged Learning: Create more opportunities for our students to engage with academic material in more active ways. For example, we could prioritize introducing group projects into our classes - which would require both renovating classrooms to allow for students to more easily gather in small groups for project work and discussion during class time, and support for faculty who would like to offer these opportunities - and/or provide support for the creation of virtual reality and augmented reality projects and computer-based simulations to allow students explore classroom materials using digital tools.
	4. Data Literacy: Ensure that all students graduate with the ability to find, assess and analyze data and communicate their findings effectively, and to critically examine the data-based work of others.
	5. Design and Visual Communication: Designing anything - a building, an
	1



image, a business, an event, a process - typically requires the consideration of a large set of perspectives, constraints, values, and priorities, and requires that specific choices be made and that those choices be effectively communicated to others. Every student should have the transformative opportunity to design something, and to present their design to the appropriate audience.

6. Enhancing the Sophomore Year Experience: The goal is to articulate a compelling set of educational and developmental goals for the sophomore year and dedicate the appropriate resources to help our students achieve those goals. We have a well-defined set of goals for our students for their freshmen year as they transition from high school to college and substantial resources to support them in this journey, and again a clarity of purpose after they declare their major(s) near the end of the sophomore year and engage with the faculty and staff of their major department(s). However, the sophomore year lacks both the clarity of purpose ("it is the year in which you choose your major" is neither clarifying nor compelling) and the associated support mechanisms, and many students find this year to be the most challenging.

We will soon be choosing a subset of ideas to be fleshed out for further consideration. I welcome additional comments, either new ideas or reactions to these six themes. Please submit your responses by March 13, 2020 to provost@tulane.edu.

Best,

Robin

P.S. We can certainly pursue more than one of these initiatives, but the precise question is which one we present to our regional accrediting agency as an explicit university priority with the associated commitments and expectations.

Robin Forman Senior Vice President for Academic Affairs and Provost



APPENDIX E

Provost Email – Town Hall Announcement – March 2020

Shedd, Jessica M

From: Sent: To: Subject: Provost <provost@tulane.edu> Monday, March 2, 2020 2:02 PM Shedd, Jessica M Tulane Reaccreditation Town Halls



Tulane University Reaccreditation Town Halls

The Office of Academic Affairs and Provost is hosting two town halls for faculty, students, and staff to learn more about Tulane's upcoming decennial reaccreditation process with our regional accreditor, SACSCOC (the Southern Association of Colleges and Schools Commission on Colleges).

The town hall meetings are your opportunity to hear directly from Provost Robin Forman, as well as Jessica Shedd, Assistant Provost for Assessment and Institutional research, and Luann White, Senior Associate Dean of Public Health and Tropical Medicine and Faculty Chair of Tulane's reaffirmation committee, engage in dialog and ask questions about the reaccreditation process and the development of our the Quality Enhancement Plan.



1

Uptown Session

Wednesday, March 11, 2020 11:00 a.m. - 12:00 p.m. LBC 203 - Stibbs Conference Room



Downtown Session

Friday, March 13, 2020 11:00 a.m. - 12:00 p.m. Tidewater Building Room 1201



Please RSVP by Monday March 10, 2020

RSVP Here

To learn more about Tulane's reaccreditation process, please visit the <u>SACSCOC</u> <u>Decennial Reaffirmation website</u> hosted by <u>Tulane's Office of Assessment and</u> <u>Institutional Research (OAIR)</u>.



APPENDIX F

Provost Email – Follow-up Announcement of Emerging QEP Themes – September 2020





examine the data-based work of others.

5. Design and Visual Communication: Designing anything – a building, an image, a business, an event, a process – typically requires the consideration of a large set of perspectives, constraints, values, and priorities, and requires that specific choices be made and that those choices be effectively communicated to others. Every student should have the transformative opportunity to design something, and to present their design to the appropriate audience.

6. Enhancing the Sophomore Year Experience: The goal is to articulate a compelling set of educational and developmental goals for the sophomore year and dedicate the appropriate resources to help our students achieve those goals. We have a well-defined set of goals for our students for their freshmen year as they transition from high school to college and substantial resources to support them in this journey, and again a clarity of purposes after they declare their major(s) near the end of the sophomore year and engage with the faculty and staff of their major department(s). However, the sophomore year lacks both the clarity of purpose ("it is the year in which you choose your major" is neither clarifying nor compelling) and the associated support mechanisms, and many students find this year to be the most challenging.

I look forward to your responses.

Best, Robin

Robin Forman Senior Vice President for Academic Affairs and Provost



APPENDIX G

Academic Affairs Council – November 2020





APPENDIX H

Provost Email – Announcement of QEP Topic and Committee





QEP committee

- Kimberly Foster, Chair (Dean, Science and Engineering)
- Jeremy Bock (Associate Professor, Law)
- Patrick Button (Assistant Professor of Economics, Liberal Arts)
- Ruth Carlitz (Assistant Professor of Political Science, Liberal Arts)
- Aron Culotta (Associate Professor of Computer Science, Science and Engineering)
- Patrice Delafontaine (Executive Dean, Medicine)
- Brian Edwards (Dean, Liberal Arts)
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- Gary Hoover (Director of the Murphy Institute, and Professor of Economics, Liberal Arts)
- John Lefante (Professor and Chair of Biostatistics and Data Science, Public Health and Tropical Medicine)
- Scott McKinley (Associate Professor of Mathematics, Science and Engineering)
- Jessica Shedd (Assistant Provost for Assessment and Institutional Research)
- Lee Skinner (Dean, Newcomb-Tulane College and Professor of Spanish & Portuguese, Liberal Arts)
- Kentaro Tsubaki (Associate Professor, Architecture)
- Chris Watts (Professor of Practice, Teacher Preparation and Certification Programs, Professional Advancement)

Sent on 9/8/2020:

Dear Colleagues,

It seems like a lifetime ago when I last wrote to seek your input on our Quality Enhancement Plan (QEP). In the coming months we need to select the theme for our QEP and begin the process of developing a formal proposal. As you may recall, the proposals we received in the past cluster around the six themes listed below. I write to seek your guidance. Which of these, if any, seems most suitable for our quality enhancement plan? You can also suggest new possibilities. With the extraordinary experience of these past 6 months, I know that preferences may have changed, and new ideas emerged. Please let me know your thoughts.

1. Writing and Communication: Expand our undergraduate writing center to include broader communication (e.g. presentation and collaboration) skills and/or provide more writing and communication support for graduate and professional



students.

2. Undergraduate Research: Expand the opportunities for undergraduates to participate in independent research and make it easier for students to explore these options.

3. Active and Engaged Learning: Create more opportunities for our students to engage with academic material in more active ways. For example, we can prioritize introducing group projects into our classes – which would require renovating classrooms to allow for students to more easily gather in small groups for projects and discussion during class time and support for faculty who would like to offer these opportunities – and/or provide support for the creation of virtual reality and augmented reality projects and computer-based simulations to allow students explore classroom materials using digital tools.

4. Data Literacy: Ensure that all students graduate with the ability to find, assess and analyze data and communicate their findings effectively, and to critically examine the data-based work of others.

5. Design and Visual Communication: Designing anything – a building, an image, a business, an event, a process – typically requires the consideration of a large set of perspectives, constraints, values, and priorities, and requires that specific choices be made and that those choices be effectively communicated to others. Every student should have the transformative opportunity to design something, and to present their design to the appropriate audience.

6. Enhancing the Sophomore Year Experience: The goal is to articulate a compelling set of educational and developmental goals for the sophomore year and dedicate the appropriate resources to help our students achieve those goals. We have a well-defined set of goals for our students for their freshmen year as they transition from high school to college and substantial resources to support them in this journey, and again a clarity of purposes after they declare their major(s) near the end of the sophomore year and engage with the faculty and staff of their major department(s). However, the sophomore year lacks both the clarity of purpose ("it is the year in which you choose your major" is neither clarifying nor compelling) and the associated support mechanisms, and many students find this year to be the most challenging.

I look forward to your responses.

Best, Robin

Robin Forman Senior Vice President for Academic Affairs and Provost



APPENDIX I

Academic Affairs Council – January 2021

Shedd, Jessica M

Subject:	Academic Affairs Council	
	https://tulane.20011.us/j/35146506632:pwu=0yunt/VISKIDIdOKTEDVIIKTVBDEVI0109	
Start: End:	Wed 1/20/2021 9:00 AM Wed 1/20/2021 10:30 AM	
Recurrence:	(none)	
Meeting Status:	Accepted	
Organizer:Forman, RobinRequired AttendeesAlday Sanz, Ignacio N; Solomon, Ira; Meyer, David D; Edwards, Brian T; Hamm, L. Lee; Skinner, Lee J; Duitch, Suri L; LaVeist, Thomas A; Foster, Kimberly L; Bordnick, Patrick S; Nance, Agnieszka B; Hill, Amanda K; Kenney, Sally J; Reese, Thomas F; Schwartz, Kenneth A; Dattagupta, Satyajit; Piedimonte, Giovanni; Weiss, Toni L; Banush, David N; Taylor, Miriam O; Porter, James D; Smith, Meredith M; Singh, Anneliese A; Lopez, Ana M; Cunningham, Michael; Krousel-Wood, Marie A; Weingart, Kady D; Shedd, Jessica M; Hoover, Gary A; Newman, Liv KOptional Attendees:Morel, Mel'isa K; Leblanc, Gregory A; Hoff, Edna B; Cooper, Barbara A; Moore, Sharon L; Mistrot, Joseph A; Guedry, Candise A; Gromelski, Diane L; Crosby, Christy L; Shelby, Chauntrell M		
ht	Academic Affairs Council Wednesday, January 20, 2021 9:00am Join Zoom Meeting tps://tulane.zoom.us/j/95148906892?pwd=UytmcVI3RmJtaUR1TDVmR1VBbEVIUT09 Passcode: 425281	
1. Brief topics: • Spring Enro • The QEP	ollments	
2. Looking ahead to	5 Fall, 2021	
3. Open discussion		
	1	



APPENDIX J

Administrative Council – February 2021

ADMINISTRATIVE COUNCIL MEETING Thursday, February 11, 2021 9:00-11:00 a.m. https://tulane.zoom.us/j/99186110276?pwd=NUZrRURpZ2FwQ1RJcnpvb113ajIydz09 Meeting ID: 991 8611 0276 Passcode: 528112		
1. President's Undate	Mike Fitts	
 Crime Statistics 	Kirk Bouyelas	
3. Entrepreneurship Institute	Jacob Johnson	
4. Quality Enhancement Plan	Robin Forman	
5. Announcements & Achievements	All	



APPENDIX K

Data Literacy QEP Committee Membership

	Data Literacy QEP Committee Roster January 2021
•	Kimberly Foster, Chair (Dean, Science and Engineering)
•	Jeremy Bock (Associate Professor, Law)
•	Patrick Button (Assistant Professor of Economics, Liberal Arts)
•	Ruth Carlitz (Assistant Professor of Political Science, Liberal Arts)
•	Aron Culotta (Associate Professor of Computer Science, Science and Engineering)
•	Patrice Delafontaine (Executive Dean, Medicine)
•	Brian Edwards (Dean, Liberal Arts)
•	Lisa Fauci (Professor of Mathematics, Science and Engineering)
•	Xianjun Geng (Professor of Management Science, Business)
•	Tonya Hansel (Professor, Social Work)
•	Gary Hoover (Director of the Murphy Institute, and Professor of Economics, Liberal Arts)
•	John Lefante (Professor and Chair of Biostatistics and Data Science, Public Health and Tropical Medicine)
•	Aarav Louzado (undergraduate student, Economics)
•	Scott McKinley (Associate Professor of Mathematics, Science and Engineering)
•	Ralph Russo (Professor of Practice, SOPA – sub for Chris Watts)
•	Jessica Shedd (Assistant Provost for Assessment and Institutional Research)
•	Lee Skinner (Dean, Newcomb-Tulane College and Professor of Spanish &
	Portuguese, Liberal Arts)
•	Kentaro Tsubaki (Associate Professor, Architecture)
•	Chris Watts (Professor of Practice, Teacher Preparation and Certification
	Programs, Professional Advancement)
•	Ron Koshita (Graduate Student, GSSA Representative and Physics PhD student)



APPENDIX L

The Data Hub Personnel, Committees, and Space Descriptions

Executive Director

The Executive Director of The Data Hub will report to the Provost on all the activities of The Data Hub. They will be responsible for all aspects of the operations of The Data Hub, including implementing its academic vision and engaging closely with the Office of Academic Affairs, Tulane's Academic Schools, and Newcomb-Tulane College. They will chair the various Data Hub committees (implementation, assessment, and the two advisory groups), oversee staff, manage the budget, and provide leadership for all Data Hub initiatives. The Executive Director will be a faculty member with demonstrated leadership and administrative abilities, whose work engages with data in innovative ways, is passionate about spreading data literacy throughout the University, and can translate data for non-scientists. The directorship will be a half-time (50%) administrative appointment.

Senior Program Manager

The Senior Program Manager will support all activities of The Data Hub, reporting directly to the Executive Director. Their responsibilities will span the typical administrative responsibilities of a senior level position—staff and budget management—but will also include oversight and management of students working in support of The Data Hub initiatives, administration and support of assessment activities, and collaboration with faculty, administrators, staff, and students engaging with The Data Hub. The Senior Program Manager will be a capable and seasoned administrator with experience in higher education, including working directly with students.

QEP Implementation Committee

Chaired by the Executive Director, the Implementation Committee is charged with providing institutional support for the implementation of The Data Hub and will provide oversight of all aspects of that implementation in support of the Executive Director. It will include faculty, at least one from each School, as well as staff. Some founding Implementation Committee members will be representatives from the Data Literacy QEP Committee. The faculty and academic leadership in the committee will be central in the selection of the annual data theme/ data set and in recruiting faculty to teach data-themed TIDES courses in the implementation phase. Staff support will also be essential in this phase as The Data Hub staff will need to be hired, the physical space for The Data Hub will have to be built out, and the communication plan will need to be overseen, including the development of a website. Staff support will be helmed in this phase by staff from the Office of Academic Affairs.

QEP Assessment Committee

The QEP Assessment Committee, appointed by the Executive Director, will be comprised of one full-time faculty member representing each of the Tulane Schools offering undergraduate majors, as well as Newcomb-Tulane College. It will be chaired by the Executive Director of The Data Hub and the Assistant Provost for Assessment and Institutional Research, and will consist of approximately 10 faculty who will participate in the direct assessment process. The University's Director of Assessment will provide training and support for the assessment process, which will be staffed by The Data Hub's Senior Program Manager. The Data Hub staff will provide administrative support for the work of this committee.


The QEP Assessment Committee will be responsible for maintaining and updating the Data Literacy Skills Rubric and making any recommendations for improvements to the direct assessment process, as necessary. It will also be responsible for development of benchmarks once baseline data is available. The QEP Assessment Committee will provide an annual report to the Executive Director detailing results of the student learning assessment process and any recommendations for where there are opportunities for improvement. This report will inform the larger Annual Year-End Review and SACSCOC QEP Impact Report.

QEP Faculty Advisory Council

Absorbing some of the functions of the earlier QEP Implementation Committee, the Faculty Advisory Council will continue to oversee the implementation of the QEP and be a sounding board to the Executive Director, who will serve as its chair. Responsibilities of council membership are to serve as an advocate of The Data Hub QEP, and review and make recommendations for continuous improvement of all aspects of the QEP, including but not limited to: ongoing implementation of the plan, assessment, planning, and budgeting. A primary role of the Faculty Advisory Council is to continually review the evolving relationships between the resources of The Data Hub and the academic Schools—serving as mentors for those seeking to engage with the work of The Data Hub, and identifying further opportunities for cross-unit conversation, cooperation, and collaboration. The Faculty Advisory Council meets on a regular basis (monthly) to provide informed feedback to help shape implementation practices, evaluate success, and determine modifications to the project that may be required as it is fully operational. The Data Hub Director will present regular updates and reports regarding the progression of activities leading to attainment of The Data Hub's goals and objectives.

QEP Student Advisory Council

Chaired by the Executive Director, the Student Advisory Council will serve to provide an important student voice in the ongoing planning and assessment of The Data Hub. A primary goal of The Data Hub is to create an energetic campus culture of data literacy. Students will provide crucial insights on the success of this effort and will advise on how to best make further progress. Membership will include undergraduate and graduate students who are engaged with and or interested in data and will be open to nominated or self-nominated participants. The Student Advisory Council will meet at least twice per semester and serve as forum for feedback and student engagement on decision making.

The Data Hub Space

Located in the Howard Tilton Library, Tulane's main library, The Data Hub space will be in a central Uptown campus site and easily accessible by faculty and students. In addition to being a book and resource repository, the library is also a hub for students' academic endeavors and a lively space filled with individual and collaborative workspaces, a coffee shop, a lounge, classrooms, and student support services like the Goldman Center for Student Accessibility. The space designated for The Data Hub consists of five individual offices, a conference room, and a shared workspace. It is adjacent to several small classrooms and is directly linked to a mid-sized classroom that accommodates 40 students.

