

An aerial photograph of the James Madison University campus during sunset. The sky is filled with warm, golden light, and the sun is low on the horizon, casting long shadows. The campus features several large, multi-story buildings with red roofs and white walls. A prominent building in the foreground has a white tower with a blue dome. The campus is surrounded by lush green trees and a large green lawn. In the background, rolling hills and mountains are visible under the sunset sky.

Quality Enhancement Plan

EARLY STUDENT SUCCESS SYSTEM IMPLEMENTATION
AT JAMES MADISON UNIVERSITY



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Quality Enhancement Plan

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GLOSSARY/ABBREVIATIONS

- AC: Academic Council
- AIRR Framework: Anticipation, Inclusion, Responsiveness, Reflexivity
- CARS: Center for Assessment & Research Studies
- CRM: Customer Relationship Management
- ESSS: Early Student Success System
- FYRE: First year Research Experience
- ISSAQ: Incoming Student Skills & Attitudes Questionnaire
- JMU: James Madison University
- LMS: Learning Management System
- Madison Cares: Alert system within the Dean of Students Offices that handles manual referrals
- QEP: Quality Enhancement Plan
- QEP LT: Quality Enhancement Plan Leadership Team
- QEP WG: Quality Enhancement Plan Working Group
- PLT: Provost Leadership Team
- President’s Cabinet: Advisory group to the president, comprised of divisional vice presidents and selected leadership members from each division
- R2: Carnegie Classification for doctoral universities with high research activity
- Reengineering Madison: Campus-wide initiative to transform campus technology and platforms over 10 years, modernizing our systems and business processes.
- SASEM: Student Academic Success & Enrollment Management
- SACSCOC: Southern Association of Colleges and Schools Commission on Colleges
- SSLT: Student Success Leadership Team
- SALT: Student Affairs Leadership Team

EXECUTIVE SUMMARY

James Madison University (JMU) is embarking on a simple yet aspirational goal with its Quality Enhancement Plan (QEP): to improve student retention and close equity gaps by implementing an Early Student Success System. Student success is more important now than ever as JMU reflects on lessons learned during the first QEP, which focused on ethical reasoning and societal challenges, and as we continue to grapple with the implications of the COVID-19 pandemic, structural inequities, and shifting economic landscapes.

The Early Student Success System (ESSS) QEP builds on JMU's strengths of high-touch support and civic responsibility to meaningfully and directly contribute to three institutional strategic priorities:

1. Being the Change at Work and in the World
2. Advancing Diversity, Equity, and Inclusion (DEI)
3. Attracting the Students of Tomorrow

While JMU's overall retention rate of 89.2% for incoming first-time students might be the envy of many institutions, the last five years have demonstrated that JMU still has work to do. Within the high retention rate, equity gaps exist. For example, first-generation students are retained at 83.1%, Black students at 84.9%, and transfer students at 79.8%. In addition, these rates are trending negatively, with the overall retention rate declining and the equity gaps widening. Finally, students are leaving because as an institution, JMU is not as well positioned to support student success as it needs to be for today's students or for those to come.

The QEP proposes an Early Student Success System that prioritizes a positive, proactive, and asset-based framework that understands student success is not something we do to students, but work toward together. The proposed ESSS combines current and new data insights in combination with the university's new Customer Relationship Management (CRM) platform to identify students not meeting their goals and connect them with people, offices, and resources on campus so that they are better empowered and more likely to reach their goals.

A robust literature review, analysis of institutional data, interviews with peer institutions, and wide-ranging focus groups helped inform our decisions to focus on four primary factors for data collection and student success collaborations to improve student retention:

1. Well-being
2. Basic needs
3. Sense of belonging
4. Academics

A new Early Success & Enrollment Analytics Team will lead, administer, and assess the early student success system, driven by these factors. By better understanding student needs and situations in the moment, the team will leverage the Early Student Success System, in collaboration with colleagues across campus, to work toward closing equity-based retention gaps and improving overall retention by 2% over the next five years.



A. TOPIC SELECTION

Background

Established in 1908, James Madison University is a public, national, R2 Carnegie-classified university with a growing, national reputation for offering experiences that lead to an outstanding education and inclusive environment for students, faculty, and staff. The student body includes approximately 20,000 undergraduate and 1,900 graduate students, who are supported by over 1,000 full-time instructional faculty, 400 part-time faculty, and over 1,200 classified staff and administrative faculty.

The institution offers thriving programs in the liberal arts, science and technology, and professional disciplines at the undergraduate, master's, and doctoral levels. JMU is committed to expanding diversity, fostering equity and inclusion, and supporting superlative teaching and scholarship. The institution has achieved national recognition for the high quality of its academic programs, focus on maintaining strong student/faculty interaction, and innovative faculty research. At the heart of these activities, and guiding the institution, is our mission: "We are a community committed to preparing students to be edu-

cated and enlightened citizens who lead productive and meaningful lives."

JMU's first Quality Enhancement Plan, The Madison Collaborative: Ethical Reasoning in Action, was selected with wide community feedback and support; carefully developed over two years, and implemented successfully; it provided a strong model for this version. As with the original QEP, JMU's second program proposal integrates broad-based university cooperation but was selected largely based on existing comprehensive planning and evaluation efforts. The resulting project, the Early Student Success System, is a cross-divisional initiative that operationalizes JMU's existing commitment to the university's strategic goals — specifically Priority #2, Advancing Diversity, Equity and Inclusion, and Priority #3, Attracting the Students of Tomorrow — and will enhance students' academic experiences.

Process

Early in 2019, JMU's senior leadership, in collaboration with the SACSCOC Working Group, began a purposeful review of JMU's existing goals and plans, including the current JMU Strategic Plan, Strategic Priorities, Core Qualities, and University Goals, as well as financial reports, such as the institutional Six Year Plan and projected budgets. Their goal was to identify ideas and areas that were already deemed priorities for the university, as shown by their inclusion in our planning, that could be elevated through the QEP process.

In October of that year, the president and senior leaders identified four key areas for development and consideration:

- Academic Advising and Mentoring
- Racial Equality
- Student Wellbeing
- Retention

It was determined that the next step would be preparation of white papers for each topic to determine if there were ties to JMU planning, explore the potential benefits of the idea by talking with subject matter experts, and provide a solid review of the literature. Based on the selected topics, the appropriate vice presidents selected representatives from their areas with the experience and knowledge to contribute to the research. Early involvement from knowledgeable faculty and staff throughout the process contributed to broad-based support of the university community.

In an example of the cross-divisional involvement that would become a hallmark of the QEP process, the Provost and Vice President for Academic Affairs and the Vice President for Student Affairs each selected someone from their division to serve as QEP Evaluator, a role in which they would work with those writing the white papers to provide feedback and guidance.

Throughout Spring 2020, the two QEP Evaluators collaborated with the SACSCOC Working Group to develop white paper guidelines, which included:

- Summary of Major Issues, including Literature Review
- Possible proposal/s for implementation at JMU
- Brief summary of Learning Improvement Plan for possible proposal/s using LID methodology and links to Student Learning, Student Success, or both
- Essential Budget Items
- Major Works Consulted



Work began with the distribution of the guidelines during spring semester and extended throughout the summer. During this time, four groups of four to seven faculty and staff conducted research, both externally — to gather best practices and ideas — and internally — with JMU administrators — to ensure there were strong ties between JMU’s strategic and budget planning and the topics. In October 2020, the white papers were provided to senior leadership for their review.

The president and vice presidents reviewed the four proposals and discussed the merits and drawbacks of each topic. All papers had elements that were well-liked, would fit the criteria, and would benefit the institution; however, no definitive choice was evident. The group decided instead to combine elements from several of the papers into a new topic.

Retention and student support were identified as the top concepts, but there was significant support for DEI and accessibility as well. Initially, there was a concern that retention and persistence were things JMU currently did well and may not be a significant initiative. However, like all higher education institutions, JMU is already seeing gradual declinings that are likely to increase due to multiple factors. Continued discussions, primarily within Academic Affairs and Student Affairs, further refined the general idea into a topic that combined the best parts of multiple suggestions in ways that were meaningful, measurable, and allow us ensure that future decisions are data driven. In addition, this gave JMU the opportunity to incorporate and leverage important work that was already underway at the uni-

versity, such as that of the Racial Equity Task Force and the ChangeMaker Task Force.

The resulting topic was an early student alert system, a formal, proactive feedback system that sends notifications about targeted student segments to JMU practitioners who can take action to intervene early in a student’s educational career. Writers were chosen to continue developing this idea into a fully formed white paper so that it could be appropriately evaluated in keeping with the assessment of the original four submissions.

This white paper was reviewed by subject matter experts within each division and senior leaders. In March 2021, the Early Alert System was selected as the QEP topic. Please note that during the process, the name of the project evolved to the Early Student Success System.

This QEP topic, primarily a collaboration between Academic Affairs and Student Affairs, called for the design and implementation of a comprehensive early alert system that would reverse the decline in the overall retention rates and narrow the equity gap observed between Underrepresented Minorities; Black, Indigenous, Students of Color; low-income; and first-generation college students at JMU. However, the work was not planned to be done in a silo: Appropriate student support services from across the university would be involved as campus partners identified those programs and offerings most likely to benefit the target audience. The crucial first step in the project was selection of the team that would be responsible for the Early Alert System, which is detailed in section B.



B. BROAD-BASED SUPPORT

Support From the Beginning

From the outset, university leadership and the QEP Working Group (QEP WG) sought to build and identify broad-based support for the Early Student Success System (ESSS) QEP. As the selection process demonstrates, the identification of student success, and more specifically closing equity-based retention gaps and raising retention rates, is necessarily a cross division and institution effort. The process to create this ESSS QEP reflects an attempt to build broad-based support in those elements, in part through merging relevant elements of the DEI, advising, early-alert, and well-being issue papers together.

QEP Leadership

According to Banks and Dohy (2019), equitable student success and retention should be considered the responsibility of every person on-campus, and JMU is no exception. The search for the QEP Director involved:

- Provost and Senior Vice President for Academic Affairs
- Vice President for Student Affairs
- Vice Provost for Student Academic Success and Enrollment Management (SASEM)
- Academic Affairs Chief Communications Officer
- Associate Director for Assessment, Information Technology, and Finance for Student Affairs (AIF SA)

Their involvement on the QEP Director search committee is an example of the support from senior leadership across Academic Affairs and Student Affairs. Moreover, the Vice Provost for SASEM, Associate Director for AIF SA, QEP Director, and Dean of Students went on to form the QEP Leadership Team (QEP LT). The QEP leadership team met almost weekly from June 2021 through the present. Note that the QEP Director is the part-time position hired in May 2021 to serve through the QEP research and design phases, envisioned to end Summer 2023. The QEP Director and QEP WG have requested a budget initiative that includes a permanent full-time director role to lead this initiative.

QEP Working Group

The QEP Working Group membership also exemplifies the broad-based support for the early student success QEP (see Appendix A). The QEP LT, in consultation with the Provost and Senior Vice President for Academic Affairs and the Vice President for Student Affairs, designed a two-prong process to recruit and select members for the working group.

First, there was an open call to the campus community for nominations and self-nominations to serve on the QEP Working Group. Second, JMU vice presidents were encouraged to nominate someone from their division to make sure it was evident that the widely sourced representation included in the working group had support from senior leadership. The nominees for the QEP WG were then selected and invited to join, ensuring diverse institutional support across divisions, position types, and demographic social identities, with the necessary knowledge and expertise for the QEP content area.

QEP Campus Engagement

Throughout the research and design phases, the QEP Working Group and QEP Leadership Team worked extensively to build and maintain sustained broad-based support for the QEP as

well as larger institutional equity, student success, and retention goals. Regular presentations, updates, and opportunities for feedback were provided for Academic Council, PLT, President's Cabinet, SGA Academic Affairs sub-committee, SALT, SSLT, and the University Board of Visitors (see Appendix B). In addition to these regular updates, the QEP Director and QEP Working Group met with other partners and groups across campus, including the College of Business Center for Student Success, General Education Council, Parent's Council, Advancement Planning & Operations, and more.

Furthermore, the QEP Director and QEP WG sought out insights, feedback, and critical conversations through intentional facilitated conversations. These were important engagement opportunities that functioned as more than just one-way communication about the ESSS QEP; instead, they represented brainstorming sessions, feedback loops, and ways to demonstrate how the QEP was changing as a result of the growing institutional input and support. Some examples of these encounters were the Fall 2021 facilitated student forums, peer-to-peer high impact group conversations, Spring 2022 College of Health and Behavioral Studies Opening Faculty Meeting, Spring 2022 JMU Diversity Conference, ISAT 400 project workshop, Advising & Technology forums, and adviser trainings throughout the Spring 2022, Summer 2022, and Fall 2022 semesters.

QEP Early Student Success Culture & Infrastructure

The importance of building and sustaining broad-based support for closing equity-based retention gaps and raising overall retention through a program such as an early student success system was recognized early in the QEP identification process. As already mentioned, the collaboration across Academic Affairs and Student Affairs has been consistently integrated through topic selection, the search for a QEP Director, and in the working group. Moreover, as the QEP WG has done the work of researching and designing the necessary structures and cultures required for an ESSS, they have sought to integrate and build shared support for the system. For example, the recommendation for a Retention Committee is consistent with strategic enrollment management (SEM) best practices for breaking down institutional barriers, creating partner and campus community buy-in, and communication (Ruffalo Noel Levitz, 2019). The Retention Committee is made up of partners from across divisions and is charged with growing across-the-board support, distributing data-informed student success and retention insights, identifying student retention best practices oncampus across silos, and facilitating institution-wide communications about the Early Student Success System and equitable student success and retention.

The institution has also committed to building wide support through investment in PROSCI change management certification and training as Reengineering Madison, the QEP, and other major change initiatives occur on campus. Change management supports understanding that support and change don't happen overnight and cannot happen merely by adopting new technologies. Rather, support is built and maintained intentionally over time through motivation, communication, training, interventions, and reinforcement. JMU has identified key members for change management training and certification across

areas including Information Technology, Academic Affairs, Student Affairs, and University Advancement. These trained JMU change management practitioners are evidence of the current shared support for the QEP and indicative of the larger support culture being developed.

Numerous key partnerships and collaborations have been developed for the Early Student Success System to be successful. For example, the QEP Director and QEP WG have worked extensively with the Office of Orientation and Transition in the implementation of the Incoming Student Skills & Attitudes Questionnaire (ISSAQ), a survey given to each incoming group of first-year students. The process initially started for the incoming Fall 2020 cohort, but nothing was done with the data. With student success and retention in mind, the QEP Director and WG developed a new pilot for the incoming Fall 2022 cohort, involving the support and insights of Information Technology and University Advising in addition to Orientation and Transition. For the ISSAQ, the QEP WG also collaborated with The Graduate School and three different graduate programs to administer the ISSAQ to graduate students as a pilot to assess whether the ISSAQ will be as useful for graduate students as well as undergraduate and transfer students.

An additional collaboration was created for the QEP between the Office of Institutional Research (OIR) and the Registrar's Office on issues related to data access, privacy, querying, reports, and benchmarking. OIR was instrumental in developing data dashboards for retention that the working group has used for research and to understand student retention at JMU. The Registrar's Office and Information Technology assisted in developing various reports that were used on an ad-hoc basis, including rosters of incoming students for ISSAQ administration, and key components of the Early Student Success System, such as reports of students who have dropped from full-time student status (12+ credit hours per semester) to less than full-time student status (< 11 credit hours per semester).

In similar partnerships, the QEP Director and working group have collaborated with the Center for Faculty Innovation on faculty needs, expectations, and opportunities for early student success engagement; JMU Libraries to explore how Canvas, the university's LMS, may yield actionable insights for student success and retention and to understand best practices for data equity, privacy, and ethics; and Student Athletics for learning best practices from their student success and retention efforts, how the Early Student Success System can support student-athletes, and even different ways of defining retention based on NCAA recommendations.

Student Participation in the QEP

The QEP director, leadership team, and working group have intentionally and actively sought student involvement in the process of researching and designing an early student success system. Student participation was considered critical for this QEP, especially since the goals included to better understand why students leave JMU, how students are successful, and what concerns students might have about data sharing, privacy, and other issues. More than just participating in some focus groups and giving feedback, the director and leadership team believed having meaningful student involvement throughout the process was crucial. The QEP Director worked with members of the leadership team and campus community early in the process to

identify students who would be willing to be a part of the working group and be compensated for their time.

During Fall 2021, four undergraduate students committed to serving on the working group, and two of them served in different capacities for a short period of time. By the end of the semester, none of the undergraduate students remained on the working group due to other on-campus commitments, including their course work. After attempting to recruit more students into the working group, the group decided that inviting students to serve on the working group, even in paid positions, was not ideal because of time commitment, scale of conversations, and lack of general interest. Instead, the QEP Director and QEP WG chose to work with First Year Research Experience (FYRE) to identify and recruit undergraduate students for paid opportunities working with the QEP Director on research related to understanding student retention at JMU, equity gaps, and design of the ESSS. In Fall 2022, two undergraduate students participated in the QEP FYRE research opportunity. For Spring 2023, the two undergraduate students are continuing, and three new undergraduate students have joined the undergraduate research team.

During the Summer 2021 term, the QEP Director met with the Executive Director of JMU's Center for Assessment and Research Studies (CARS) to discuss having a graduate student devote some or all of their time to supporting the QEP. After meeting with a potential doctoral student, all agreed that it was a good fit in terms of need, interest, and expertise for the doctoral student to spend half of their graduate assistantship as part of the QEP WG and providing data analysis support. The doctoral student worked in this capacity throughout the 2021-22 academic year. At the end of the year, all agreed that the relationships and work were mutually beneficial and further need existed. The doctoral student continued working in this capacity into the 2022-23 academic year on a full-time basis, with all of their assistantship hours supporting the QEP through participation in the working group and data analysis. A second graduate assistant was added to the QEP WG and will provide data analysis and project support for the QEP and the Office of the Registrar. This student is supporting the QEP for half of their assistantship assignment during the 2022-23 academic year.

In addition to the sustained undergraduate and graduate student participation in the QEP through research and working group service, the QEP Director and working group sought out student feedback in various channels. For example, toward the end of Fall 2021, and prior to the IRB-approved focus groups, the QEP Director facilitated multiple informal discussions with students about student success, equity, and the use of data. Feedback from these sessions helped inform the design and implementation of the QEP focus groups held for students during Spring 2022. The QEP Working Group also presented updates and solicited feedback via a presentation at the JMU Diversity Conference, with students included in both the presentation and in the audience. Moreover, the QEP Director regularly provided updates to and received feedback from the Student Government Association via the complete governing body and their Academic Affairs subcommittee. A member of the working group also selected ESSS and data ethics as a case study for their class, providing another opportunity for students to workshop ideas, share concerns, and provide feedback directly to the working group member and QEP Director.

C. STUDENT SUCCESS

Increasing the number and diversity of students who have access to and benefit from postsecondary education is at the heart of the student success agenda (Kinzie and Kuh, 2017). Student success requires defining and illustrating how institutions commit to ensuring that students stay and succeed. The student success goal of the ESSS QEP is to close equity-based gaps in retention rates and increase overall retention rates at JMU through a data-informed early student success system. This section provides an overview of the proposal, the framework for moving forward, and the process used to arrive at these recommendations.

Overview

The proposed Early Student Success System is designed to leverage data and technology to provide early insights and indicators that can connect students with resources, people, and offices on campus prior to students not meeting their goal. Early refers to early insights, not waiting until an end-of-semester grade or withdrawal from the university, rather than early students, e.g., a student in their first or second year at JMU. The ESSS QEP proposes the implementation of five components to build the infrastructure and personnel necessary to move toward a more equitable culture of student success and retention at JMU. The five components are Early Student Success System, Early Success and Enrollment Analytics Team, Advisers, Retention Committee and Data Committee.

Infrastructure

The framework guiding the selection, design, and implementation of these five components represents a shift from a deficit mindset to a student empowerment and success framework, viewing students as active agents and asset-based. This is most evident in the change in the language used to title this initiative. Its original proposal described the initiative as an “early alert system,” which evolved to an “early student success system.” With this shift in mind, the working group based its decisions on foundations, frameworks, and values that:

- Are evidence-informed (using research, data, stories to inform our design and implementation)
- Use an empowerment framework (empowering students as active agents; asset-based)

- Require instilling Culture Change (technologies are necessary, but not sufficient; is institution ready for students?)
- Follow an AIRR framework for responsible innovation (Anticipation, Inclusion, Reflexivity, Responsiveness)

The data included in the first phase of the Early Student Success System includes:

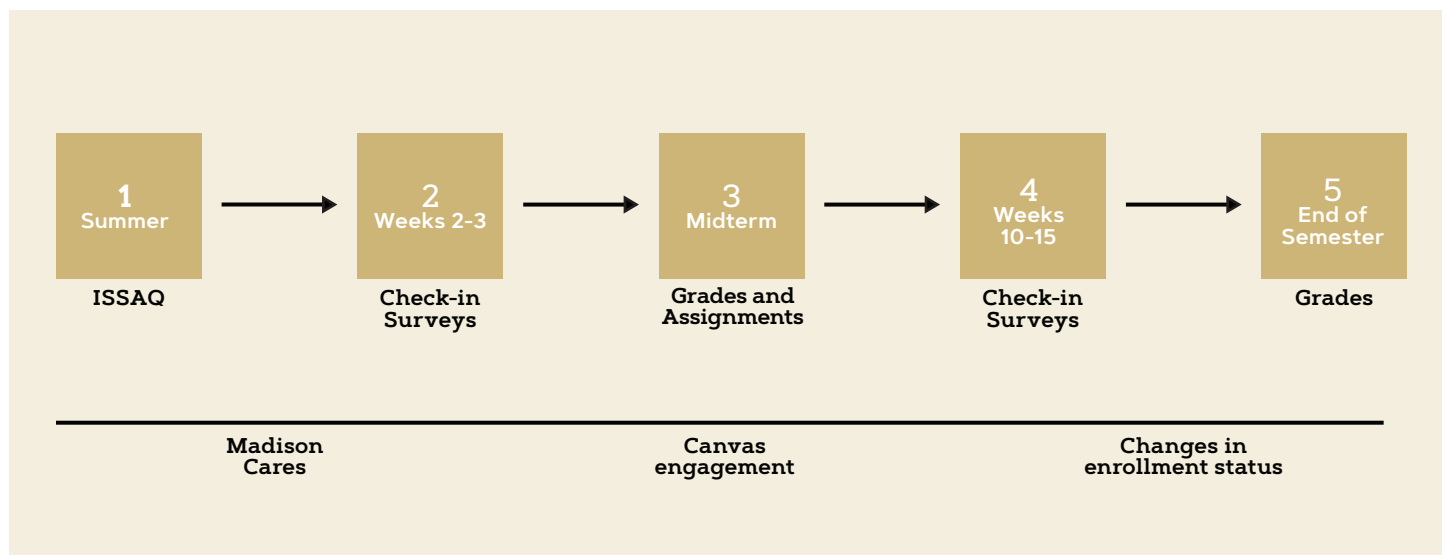
- ISSAQ survey data: student-reported survey data across 12 non-cognitive factors as students on-board to JMU
- Check-in survey data: student-reported survey data that checks in on students throughout the semester across four factors
- Midterm grades: faculty-reported data submitted based on students’ grade performance at the mid-point of the semester
- Semester grades: faculty reported data submitted based on students’ grade performance at the end of the semester
- Madison Cares referrals: individually reported data that refers students for follow-up by the Dean of Students office for any reason
- Canvas LMS data: Libraries-reported data from the Canvas LMS based on student activity, engagement, and grade performance in each class
- Student status: Registrar’s Office-reported data indicating when students drop from full-time student enrollment status (12 credit hours or more) to part-time student enrollment status (11 credit hours or fewer).

The technology for the ESSS is based on a CRM¹ that enables communication, case management, referrals, dashboard creation, data collection, and other collaboration across campus.

Figure 1 demonstrates the anticipated timeline in the first iteration of the system, assuming students initially enter JMU for the fall semester. Data streams within the boxes represent moments in time; the data streams underneath the line (Madison Cares, Canvas engagement, Changes in enrollment status) represent actions that may occur at any time, all the time. This timeline would restart each semester, so students beginning spring semester would receive the ISSAQ as part of their orientation and on-boarding during late December or early January.

¹Acquisition of a customer relationship management system and its integration into the JMU culture are parts of the Reengineering Madison initiative. On Jan. 26, 2023, Salesforce was awarded the CRM contract. More information is included in Appendix C.

Figure 1. Early student success system semester timeline



Personnel

Early Success & Enrollment Analytics Team: The early success and enrollment analytics team will design, build, and oversee the early student success system; facilitate early student support across campus from data-informed insights; and help lead equitable student success and retention initiatives across JMU. The team includes the following new positions and will report to the Vice Provost for Student Academic Success & Enrollment Management:

- Director
- Data Scientist (2)
- Student Success Coordinator (2)
- Data Engineer

Adviser Positions: Advisers play an essential role in the day-to-day and individual approach to student success and retention. Four new adviser positions are requested across five years to help provide additional advising support for students and reduce adviser/student caseloads.

Retention Committee: The retention committee is a new university-wide committee that would help ensure that retention efforts across the institution are aligned, with divisions collaborating, sharing data, frequently communicating, and facilitating the use of best practices for equitable student success and retention. The retention committee would be co-chaired by leaders within Academic Affairs and Student Affairs.

Data Committee: The data committee is a new university-wide committee that would help strategize for the equitable collection, use, and communication of data to inform decision-making and programming across campus, particularly related to student success and retention.

Process

Overall Design Process

In summer 2021, a QEP Working Group was assembled, consisting of 20 faculty, staff, and graduate and undergraduate students who were nominated or volunteered during the search for “members with interest and enthusiasm for student support and progress, as well as a history of supporting JMU’s diversity, equity and inclusiveness goals.” The QEP Working Group began formally meeting during Fall 2021 and focused on researching and designing an early alert system (EAS) that would address the equity-based retention gaps and increase overall retention at JMU. Early working group discussions recognized the possible negative outcomes of a data-analytics system targeting social equity and that the ethical implementation of such a system would require an ethical design process. As a result, the QEP WG applied an equity-minded design through its adoption of its SETI values and the AIRR framework (Culver, Harper & Kezar, 2021).

The working group first adopted an equity-minded orientation with four guiding values (SETI) as defined below:

1. Student-Centeredness: As beneficiaries/stakeholders, students should be included and regarded as experts in the creation process (Brown Wright, 2011; Serin, 2018)
2. Equity: Nebulous systems of power and oppression exist and must be actively critiqued and opposed in our work (Watt, 2015).



3. Transparent: The practice of keeping the public informed of conversations being had and decisions being made is important and required.
4. Improvement-minded: Application of the three steps of learning improvement: assess, intervene, reassess (Fulcher & Prendergast, 2021; Fulcher et al., 2014)

These values were formed based on the perspectives and values of working group members as well as in response to the needs and wants of stakeholders, including students, faculty, staff, and administrators.

The QEP WG’s initial work was guided by the SETI values. As a result of the literature research conducted in Fall 2021, the working group discovered the AIRR framework (Stilgoe et al., 2013) and elected to apply it as a more formal framework to guide the project.

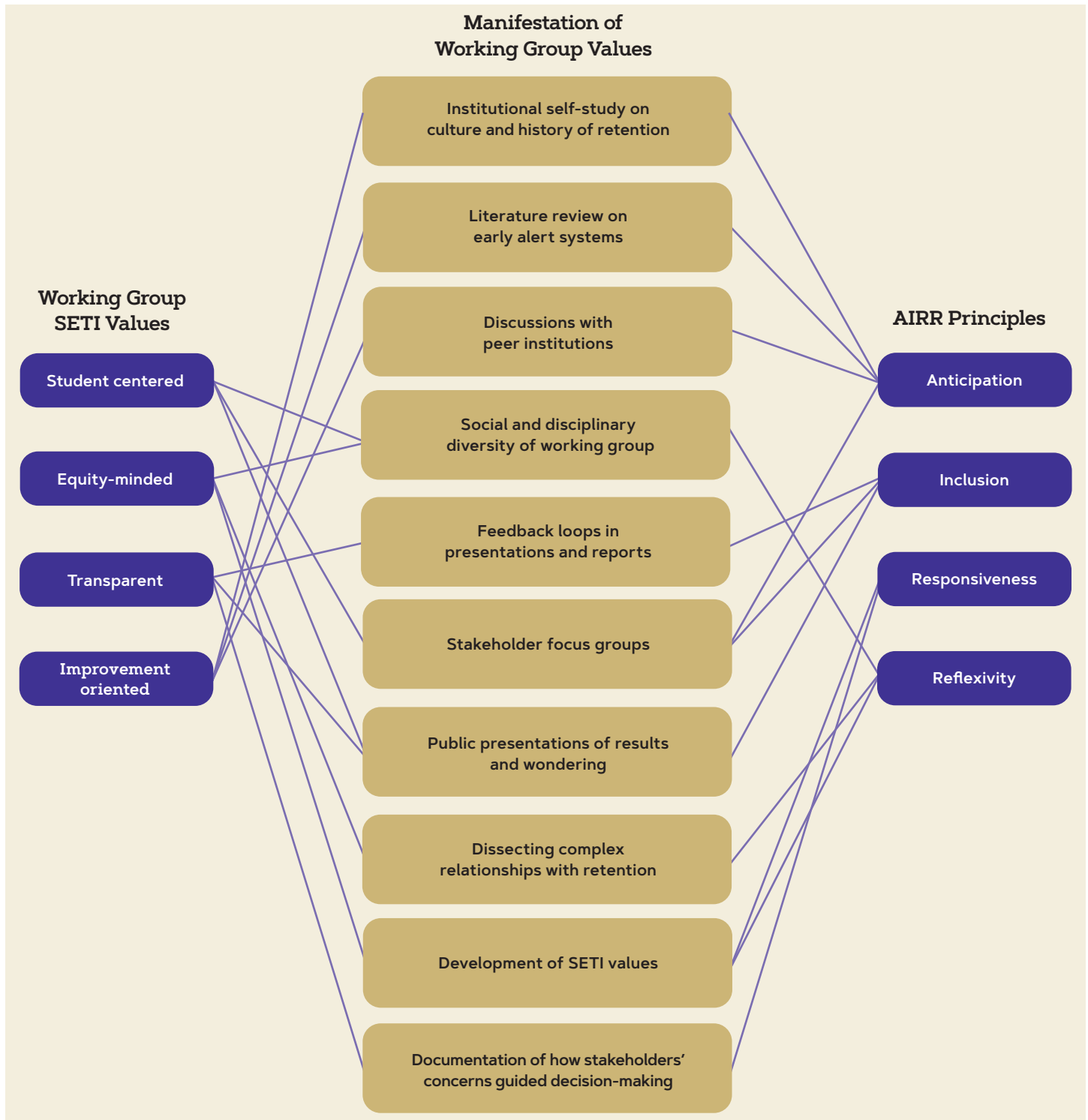
The AIRR framework has been applied in science and technology fields as a framework for responsible innovation, with the letters of the acronym each representing an evidence-based practice that creates a more equitable and ethical design process:

- Anticipation: foreseeing consequences to design and implementation decisions
- Inclusion: engaging with all relevant stakeholders and allowing stakeholders to question innovation, design and implementation, as well as group processes

- Reflexivity: addressing stakeholder concerns and integrating stakeholder ideas into group processes, product design, and implementation
- Responsiveness: the practice of positioning one's social identities and values with the project and realizing that each singular positioning is limited

Figure 2 depicts the relationship between the SETI values and AIRR framework and how these values and practices were implemented in the working groups' research and design process (Patterson et al, in press).

Figure 2. Mapping of AIRR Principles to SETI Values



Overall Research Process

During the 2021-2022 academic year, the QEP Working Group conducted research that included an examination of institutional data, stakeholder focus groups, consulting leaders at peer institutions, and a review of the literature on equitable student success and retention, early alert systems, and the use of data analytics in higher education. Working group members divided into sub-groups focused on each of these research tasks while continuing to regularly meet as a whole to share research updates and insights and to collaborate on research questions. A summary of research findings follows.

Literature Review

The literature review sub-group worked to identify and analyze existing literature and scholarship related to the ESSS QEP, including equitable student success and retention, data analytics, learning analytics, early alert systems, data privacy, and data governance. Their research generated an annotated bibliography and two drafts — one on implementation considerations for learning analytics and big data and a second on values and ethics to guide the system development. These documents served as critical resources for the work done by other sub-groups and informed the frameworks and values of the QEP WG moving forward, including the identification and adoption of the AIRR framework.

Annotated Bibliography Excerpt

In working through the extensive literature, the QEP WG research literature subcommittee identified three critical areas of the early alert design process: values and ethics, learning analytics and big data, and responses and interventions in support of equitable outcomes. They decided to capture “everything else” in an annotated bibliography as much of the research covered topics not covered in separate reports yet could be relevant to the work moving forward. The annotated bibliography is organized into the following topics:

- Predictive Analytics: Overarching Resources
- Preparing for & Enacting Institutional Change
 - ◆ Institutional Readiness for Change
 - ◆ Approaches to Enacting Institutional Change
- Situating Early Alert within a Multi-dimensional, Institutional Approach to Justice, Equity, Diversity, and Inclusion
 - ◆ Institutional Policy Needed in Support of Student Success
 - ◆ Completion Outcomes Are Impacted by Representation
 - ◆ Fairness and Institutional Communication to Students May Impact Persistence
 - ◆ The Importance of Collecting and Connecting Comprehensive, Disaggregated Data
- Increasing Accuracy and Transparency in Predictive Models
- Promoting Agency: The role of Faculty, Advisers, and Students in LA Design & Intervention
 - ◆ Engaging Students
 - ◆ Engaging Advisors and Faculty
- Ethical Considerations in Learning Analytics
- It’s Only As Good As How You Use it: Best Practices in Student Success to Inform Intervention
 - ◆ Strategies for Learning: Metacognitive, Motivational, etc.
 - ◆ The Importance of Addressing Well-Being and Promoting Help-Seeking

- ◆ Leveraging the Power of Networking: Professional Networks and Peer-to-Peer Networks
- ◆ Designing and Refining Interventions Based on Predictive Models
- Other Resources

Value and Ethics Excerpt

The Early Alerts system is intended to identify students who may be at risk of withdrawing from the institution to support interventions that would increase retention rates and closing equity gaps. As such, it will integrate multiple forms of student-generated data, and this data will necessarily be identifiable. To design and implement such a system in ways that protect student privacy and well-being, and that promote JMU values, will require care and commitment throughout the design, implementation, and deployment phases.

The Early Alerts system can be understood as one form of learning analytics, which refers to “the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing [sic] learning and the environments in which it occurs” (Jones, 2019, 2, quoting Long & Siemens, 2011, 33). In the case of Early Alerts, the focus is not on classroom learning per se, but the entire learning environment—the campus—within which students’ academic process is linked to a number of other factors in the context of retention. In this sense, it can also be understood as institutional analytics, or an institution-wide analytics system that enables administrators to access data and dashboards to track students across individual courses and to compare students (Jones, 2019, 4). Because systems geared toward retention may be designed to incorporate a wide variety of data, from classroom-based learning analytics to enrollment data to social media analytics, this section will use the umbrella term of “data analytics”, which should be understood in this context as data analytics implemented and used by the university.

Effectively implementing an ethical data analytics benefits from an ethical design process. This section recommends an evidence-based framework for responsible innovation that highlights four distinct categories of praxis: Anticipation, Inclusion, Responsiveness, and Reflexivity (AIRR) (Owen, et al., 2013). While the AIRR framework has been applied to many different areas related to innovation and technology, from genetically modified crops (MacNaghten, 2016) to STEM education (Tomblin and Mogul, 2020), to our knowledge it has not been applied to help universities navigate the complex challenges related to responsibly developing and implementing data analytics. One affordance of the AIRR framework is that it translates easily across the diverse group of actors and stakeholders that are involved in such projects, it is broad enough to be tailored to institutional needs, and it aligns with well-established practices for stakeholder-engaged development of projects and programs within a university setting.

One question for this system, then, is how it can achieve its goals while supporting student agency and avoiding harm. According to Prinsloo and Slade, “Student-centered learning analytics proceeds from the basis that students are not data-providers or data-points, but that they are and should be involved in determining what data would be valuable for them to make better informed decisions within their loci of control” (Prinsloo and Slade, 2018).

Could an early alerts system be designed not just to enable appropriate interventions, but to support student learning and agency in relation to their own success at JMU?

Recommendations:

1. Define an institution-wide set of principles and policies concerning learning analytics at James Madison University and make these publicly accessible
2. Frame 'Early Alerts' as a student-centered success support system that foregrounds student agency and utility in supporting their own learning and success
3. Proactively educate students on the benefits and risks of learning analytics, as well as their rights with respect to data usage at JMU
4. Identify which data should be opt-in, which should be opt-out, and which should be neither. These decisions should be documented and should be aligned with the stated principles and policies
5. Document all design decisions with rationales
6. Implement a plan for evaluating and monitoring the system once it is live

Learning Analytics & Big Data Excerpt

Learning analytics plays a key role in the improvement and personalization of education. Students desire real-time feedback as they learn, and believe analytics positively impact their academic performance, but transparency and communication are vital to the success of a learning analytics initiative (Boyer & Bonnin, 2016). Current research provides a solid foundation for higher education institutions to consider implementing a learning analytics framework, but strongly suggests doing so with caution. The purpose of this report is to provide a broad review of the research pertaining to implementation considerations for an early alerts system.

As institutions and their student populations evolve, so should the analytics system to remain sustainable, relevant, and accurate; therefore, evaluation is required (Villano et. al., 2018). The selected system must create a cultural change and reinforce students as agents of their own learning. The following are identified as key stakeholders and important influencers in the adoption of an early alert system.

■ **University leadership** — Implementing an early alert system requires strong public support by senior leadership (Villano et. al., 2018).

■ **Faculty/Advisors/Students** — Participation by the campus community is vital to the program's success. To increase buy-in, communicate and involve these key stakeholders early in the process and provide continuous updates connecting their contributions to the impact on the program.

■ **User Experience** — The model must be perceived as effective and easy to use by anyone, student, educator, or decision maker. Additional information on this topic is included in the dashboard section below.

■ **Objectives** — JMU identified the purpose of implementing an early alert system as improving retention and closing the retention equity gaps. Establishing such a focused objective is vital to implementing an early alert program.

■ **Intervention Pathways** — A clear link between early alerts and suggested interventions are essential.



Developing algorithms for a predictive learning model is a complex endeavor and one that is unique to each university, so no two systems are the same. The complexity of code is dependent upon the objectives, available hardware and software and user experience. Research identifies three areas of data most used in predictive learning analysis: static, activity and achievement data (Alhadad et. al., 2015). However, it is imperative that students are informed of what data is collected and how it is being used, as well as establishing data governance policies and processes for managing that data.

■ **Activity Data** is considered the most significant predictor of student success.

◆ Learning management system — LMS data examples include total login frequency, course absences, time spent in the system, number of downloads, interactions with peers, number of exercises performed, number of forum posts, duration of engagement with materials in the system, and assignment grades (Dietz-Uhler & Hurn, 2013, Mwalubwe & Mtebe, 2017).

◆ Library systems and e-Textbooks — Newly identified contributors to learning analytics includes login frequencies, downloads, time spent within these systems, books checked out, and study rooms reserved (Oakleaf et. al., 2017).

■ **Achievement Data**

◆ Assignment/Mid-term grades — Student achievement data includes college-level course completion rates, assignment grades and mid-term grades (Swaak, 2022).

■ **Static Data** is beneficial but is considered the least effective predictor of student success (Sclater et. al., 2016).

◆ Past academic performances — Past academic performances is a contributing factor when considering college level

course work.

◆ Student survey data — Annual student survey data is included in many early-alert systems (Johnson et. al., 2012).

◆ Student Information Systems — Data including courses undertaken, residency on-campus or off, and demographics with caution (Villano et. al., 2018).

Institutional Data Research

The institutional data sub-group worked with the Office of Institutional Research and the Office of the Registrar to generate a data set of all students over the last five years for the purpose of identifying trends related to equitable student success and retention at JMU (see Appendix D). The resulting data set consisted of 28,556 students who attended JMU between Spring 2017 and Fall 2021. Using this data set, the sub-group sought to answer three questions:

1. What portion of students leave JMU?
2. When are students leaving JMU?
3. Why do students leave JMU?

Analysis of this data set showed that although not many students leave JMU (8.2% of students who enrolled over the past five years) as compared to peer institutions, there is disparity in the proportion of students leaving JMU by identity groups and there is insight that can be gained on when and why students leave JMU. The data show that students may leave JMU at any point, though over half of those who left did so in their first two years. Analysis of reasons why students leave JMU revealed three key points, as shown in Table 1:

- Mental health is a top concern for all students, regardless of identity.
- Historically marginalized students are more affected (proportionally) by finances and sense of belonging.
- Academics alone are rarely a point of worry for students who choose to leave JMU.

Table 1. Reasons students have left JMU (Spring 2017-Fall 2021)

Reason	Frequency	Percent
Transfer	230	15.7%
Psychological	204	14.0%
Leave of Absence	190	13.0%
Fit/Belonging	157	10.7%
Health	136	9.3%
Personal	115	7.8%
Finances	105	7.2%
Home	79	5.4%
COVID	65	4.4%
Family	59	4.0%
Medical	48	3.3%
Academics	35	2.4%
Job	20	1.4%
Major/Program of Study	19	1.3%
Extenuating	4	0.3%

Together, these results indicate two key ideas:

- JMU would benefit from a system that is suited for at least the first two years, though there would be no harm in a system that addressed the whole student life cycle
- Given that noncognitive factors can often lead to poor academic performance and ultimately the decision to leave JMU, JMU would benefit from a system that targets students when they first report struggles in the identified noncognitive areas.

Peer Institution Research

The peer institution sub-group conducted interviews with colleagues at three peer institutions (George Mason University, University of North Carolina – Asheville, and Ohio University) on questions relating to early alert systems, interventions for closing equity-based success and retention gaps, and the use of data analytics for student success. Later, the QEP Director also conducted site visits to Virginia Tech and Georgia State University. All institutions were selected based on their history of success regarding early alert systems, data analytics, and/or equity-minded student success initiatives; contacts at these institutions; or similarities in terms of size, student body, or institution type.

Insights from these conversations contributed to both changes in the design process and recommendations for the first phase of the Early Student Success System. For example, colleagues at several institutions made it clear how important it was to collect student-reported insights as students started their college career. Colleagues also shared some of the concerns and opportunities that arose when starting a new CRM or EAS (early alert system) with an outside vendor, such as the ability to access raw data, to customize, and to leverage national trends or benchmarks with their other clients. Later conversations enabled colleagues to provide feedback on the system elements the QEP WG was piloting and proposing, as well as the construction of the early success and enrollment analytics team.

Focus Group Research

The focus group sub-group coordinated and conducted a total of 37 focus groups that engaged 132 stakeholders, including faculty, staff, administrators, and students. The purpose of the focus groups was two-fold: 1) to engage stakeholders in the process of designing and implementing an EAS and 2) to gather information about the needs and perspectives of stakeholders to inform the design.

Through analysis of the focus groups results, the working group gained a better understanding of stakeholders' perceptions of retention at JMU and institutional readiness and responsibility to ethically implement an EAS targeting social equity. Furthermore, the importance of student agency, system integration and usability, and continued stakeholder engagement was elevated. Focus group participants made it clear that there is:

1. a lack of community and cohesion primarily felt by targeted student segments;
2. no clear understanding of existing student resources/ services and a perception that JMU is not sufficiently resourced to be able to offer the necessary assistance to all students who may need it; and
3. a desire for a system that provides access to meaningful data and information so long as any system prioritizes ease of use and student agency.

As a result of this research, it was recommended that the QEP WG and university leaders consider the readiness of JMU to commit to the infrastructure, cultural, and policy changes needed to support such a system. Results also supported the importance of noncognitive factors, such as student engagement and sense of belonging, on student success and retention.

In summary, the QEP WG identified four main factors (well-being, basic needs, sense of belonging, and academics) that explained why most students left JMU and were thus the areas where an early student success system would need to gather data to generate insights for connection and intervention. The working group came to these conclusions based on the research conducted via literature review, institutional data analysis, talking with peer institutions, and through focus groups. The group determined that the next step was to try to design an early student success system that aligned with and mapped back to these research findings.

These four main factors were also later validated externally by the findings of three different student success reports. First, the JMU campus climate study, conducted by Rankin & Associates Consulting, identified sense of belonging, lack of diversity, mental health, disability, academic concerns, and self-efficacy driving student experience of a cooler campus climate, both overall and along various equity-based segments. Second, the State Council of Higher Education for Virginia’s (SCHEV) “What Matters Most” report identified four factors impacting student success; college life/preparedness, sense of belonging,

basic needs, and mental health and well-being. Third, the Boyer 2030 Commission Equity Imperative argued that equity and excellence were intertwined and advocated for accessible high impact practices and pro-active, holistic advising.

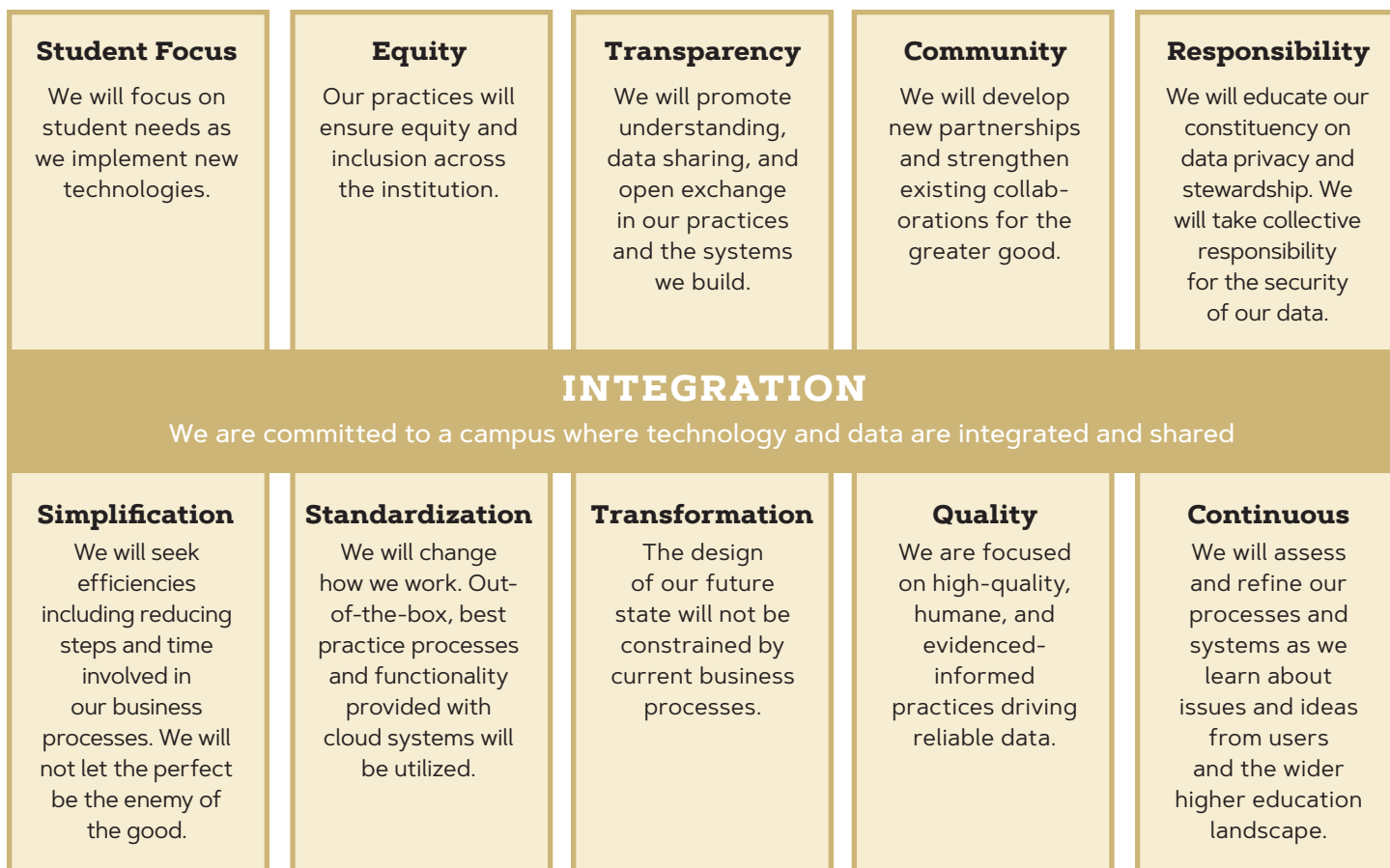
System Design Process

At the end of the Spring 2022 semester, the working group shifted from a focus on research to beginning the design process. Based on the research evidence and institutional context, and in alignment with the adopted framework, they identified four key pillars of design for the first phase of designing the Early Student Success System: 1) data ethics, transparency, and communication design, 2) Incoming Student Skills & Attitudes Questionnaire (ISSAQ non-cognitive student survey), 3) student check-in surveys, and 4) rethinking mid-term grades.

Data ethics, transparency, and communication

This design sub-group began work to identify the principles, values, and frameworks that will guide the design and implementation of the Early Student Success System. Their work has included a review of existing JMU policies and procedures, principles, and language guiding learning analytics use and implementations at other universities. From this review, this sub-group plans to make recommendations for the ethical use of data analytics at JMU, including a communication plan for how students can opt-in/out of their data collection and use. The group identified the values created within Reengineering Madison as a good starting place for the QEP work to align (Figure 3).

Figure 3. Reengineering Madison Values



Incoming Student Skills & Attitudes Questionnaire (Fall 2022 pilot of ISSAQ non-cognitive student survey)

The Incoming Student Skills & Attitudes Questionnaire (ISSAQ) is a survey, developed by DIA Higher Education Collaborators, that measures student aptitude on 12 noncognitive factors that address the behavioral, motivational, emotional, and social domains of student success. The ISSAQ was initially administered to new JMU students in Fall 2020. The data collected from the first pilot in Fall 2020 was used to generate a student success index specific to JMU for use with students beginning Fall 2022, identifying four factors that influenced the probability of student success in their first semester and first year at JMU. The four factors are (Appendix E):

- Organization
- Engagement
- Goal Commitment
- Sense of Belonging

Because of the elevation of the importance of noncognitive factors during the research phase of this initiative, the working group collaborated with JMU Orientation and Transition and University Advising to administer the assessment with all incoming first-year and transfer students during their Summer 2022 orientation. A total of 4,703 unique survey responses were generated (approximately a 91.8% completion rate).

Students received a copy of their report in August, and advisers received a roster view of their students' scores in September. The student report reminded students that knowledge and

attitudes change, that seeking help is encouraged, and then shared resources mapped onto each factor, enabling students to seek out support and growth. The adviser report provides factor-by-factor score for each student and also provides the student success index status according to those four validated factors. In Fall 2022, advisers were encouraged to use that information to prioritize outreach and support to advisees.

Student Check-In Surveys

Student success literature and results from the focus group study both highlight the importance of the first six weeks of a student's first semester. Midterm grades, which are issued in the seventh week, are currently the first formal insight into student progress and engagement. JMU has some systems, such as Madison Cares, that help to identify students in need of assistance. However, midterm grades and other systems are perceived as reactive and often occurring too late.

In the Fall 2022 semester, this sub-group piloted brief check-in surveys that were sent to first-year students (via text using Signal Vine) in the second and fourth weeks of the semester. These surveys literally checked in on four critical areas: basic needs, well-being, academics, and sense of belonging (Table 2). Additionally, students were texted a single question they could respond to with a Likert scale following fall break and prior to spring registration. Both the surveys and texted questions gave students the option to be connected to an individual or resource on campus that could assist with any needs they shared. Only if students indicated this were they asked to share their identity and contact information; otherwise, their data was collected in aggregate.

Table 2. Select responses from week two & four check-in surveys at residence hall (n=419)

Week 2 Statements	% of respondents (43/47)
I made the right choice to attend JMU.	81% agree
I can manage my time and stay organized.	77% agree
I am not sure if I will have housing or access to food over break.	79% disagree
I have received needed accommodations to be successful at JMU.	16 people agree, 5 people disagree
I have been experiencing a level of stress, anxiety, or sadness that has been difficult for me to manage.	49% agree, 18 people disagree
Week 4 Statements	% of respondents (16/17)
I feel that I belong at JMU.	72% agree, 2 people disagree
JMU is welcoming to students of all backgrounds.	88% agree
I am satisfied with student orgs offered at JMU.	88% agree
I have at least one class I am worried about passing.	63% agree, 5 people disagree
I have had interactions with faculty outside of the classroom.	56% agree, 7 people disagree
I am certain that I will complete my degree at JMU.	88% agree

During the texting pilot after the mid-point of the semester, the results were a bit more favorable than expected. For instance, the use of texting was feared because of concerns that students would opt-out at a high rate. Of the 419 within the sample, only seven opted out of receiving the texts. Forty-eight students responded to the micro-survey about feeling ready for enrollment and registration, more than the number of students who responded to the first check-in survey email during week two. Moreover, students were grateful and used emoticons to convey that they were enjoying the engagement.

Rethinking Midterm Grades

Currently, midterm grades are issued only to first-year students shortly before the mid-semester withdrawal deadline. Assignment of midterm grades are an expectation rather than a requirement for faculty at JMU, and they are only intended for students with fewer than 28 credit hours. Though midterm grades are a conventional indicator of academic progress in a course, issues with the current midterm grade system at JMU were widely discussed during QEP Working Group focus groups conducted in the research phase. In particular, faculty and academic advisers expressed concerns about the lack of reliability, consistency, meaningfulness, and timeliness of midterm grades as a method of gauging student progress. During Fall 2022, about 74% of all stu-

dents eligible to receive a midterm grade received one. Despite concerns, there was recognition that some meaningful system for reporting student progress should exist as a part of an early alert system. A desire was also expressed for the system to be scalable, to include more than just new students.

During Fall 2022, this sub-group began researching other models of midterm grading and progress reports used by special populations at JMU (e.g., Athletics, Centennial Scholars) and at other universities. The sub-group also continued to work to understand the perceptions of midterm grades at JMU by surveying academic unit heads. The survey asked academic unit heads to seek the consensus of their faculty, regardless of whether faculty currently report/use midterm grades or not, and then complete the survey. The data revealed two key insights:

1. There seems to be a lack of understanding among faculty of the benefit of midterm grades to students, relative to the cost to instructors.
2. Midterm grades should be a developmental opportunity that provides students with information that empowers them to interpret and act on their current progress.

The sub-group has identified alternative models of midterm grading that center student agency, empowerment, and development, which will be piloted in the spring 2023 semester with faculty and advisers who primarily teach/advise new students.



Timeline

Establishing the anticipated timeline was given high priority for multiple reasons. First, it helped to establish target goals for developing the system, having the team in place, and being able to reach student success outcomes appropriately aligned. Second, it demonstrated how elements of the system, team, and outcomes are each scaled up slowly. This slow and scaffolded build is consistent with best practices identified in the literature and in consultation with peer institutions. It allows the team and institution to have enough time to gather evidence, learn from failures, and adapt to improve the system, collaborate on interventions, and re-allocate resources as necessary. Moreover, there was concern that rolling out the complete system at the start might be overwhelming in terms of changes in culture, expectations, resources, and systems. Third, establishing and communicating the timeline helped to build buy-in,

credibility, and trust while simultaneously providing a mechanism for accountability.

Table 3 represents the anticipated timeline for rolling out the elements of the Early Student Success System. The timeline is intentionally conservative as the QEP Director and QEP WG acknowledge some of the significant challenges inherent in building out a home-grown institutional system. A major challenge was the unknown timeline for the university's CRM, an essential component as the technological backbone of the system. To accommodate this major unknown, the QEP WG has been testing and piloting different aspects of the system to better understand scale, scope, and impact. The elements selected aligned with data streams identified in the literature, by peers, and through institutional research at JMU, and the initial core elements of the ESSS can be administered manually with the requested team as the CRM is developed, implemented, and integrated into JMU.

Table 3. Early student success system five-year plan

	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
ISSAQ	All incoming first-year and transfer students	All incoming first-year and transfer students	All incoming first-year and transfer students	All incoming first-year and transfer students	All incoming first-year and transfer students
Check-ins	Two dorms	Half of all first-year & transfer	All first-year & transfer	All first-year & transfer	All first-year & transfer pilot expansion to rest of campus
Midterm grades & Progress Reports	Expected firsttime on-campus students	Expected firsttime on-campus students; open all students	Required firsttime on-campus students; open all students	Required first-time on-campus students; open to all students	Required first-time on-campus students; expected all students
Semester grades	All students	All students	All students	All students	All students
Madison Cares referrals	Early student success handles academic	Early student success handles academic	Early student success handles academic	Early student success handles academic	Early student success handles academic
LMS Canvas Data	Zero-activity report	Zero-activity report and explore other indicators	Zero activity and other indicators	Zero activity and other indicators	Zero activity, other indicators, and explore other interactions
Full-time to Part-time Report	All students	All students	All students	All students	All students
Triangulation of data points & Insights			Triangulation of data points & insights	Triangulation of data points & insights	Triangulation of data points & insights
Other system developments		Explore other data streams, eg. curricular analytics, campus involvement	Integrate new and explore other data streams, eg. curricular analytics, campus involvement, admissions	Integrate new and explore other data streams, eg. curricular analytics, campus involvement, admissions	Integrate new and explore other data streams, eg. curricular analytics, campus involvement, admissions

D. RESOURCES

JMU has already committed significant resources to the ESSS QEP through initial budget approvals, including personnel, the technological commitment to the CRM, and the time and attention QEP efforts have received at all levels across campus. These resources have been critical for the QEP Director and QEP Working Group to initiate and accomplish the milestones to this moment.

The resource proposal for the next five years reflects the institutional commitment to implement and complete the ESSS QEP

(Table 4). The QEP Director worked closely with the Associate Vice President for Academic Resources within Academic Affairs, Vice Provost for Student Academic Success and Enrollment Management, and University Budget Director within the Office of Budget Management to commit to ongoing planning and evaluation of resources given the QEP Working Group recommends an agile system and team, as well as the possibility that increased retention may also yield increased tuition revenues.

Table 4. QEP Five-year Budget Proposal

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	6-year Totals
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	
Personnel							
QEP Director		155,316	155,316	155,316	155,316	155,316	776,580
Data Scientist		118,980	118,980	118,980	118,980	118,980	594,900
Student Success Coordinator		100,811	100,811	100,811	100,811	100,811	504,055
Data Engineer			155,316	155,316	155,316	155,316	621,264
Data Scientist			118,980	118,980	118,980	118,980	475,920
Student Success Coordinator				100,811	100,811	100,811	302,433
Advisors (1 FTE/Year)			86,277	172,554	258,831	345,108	862,770
Temporary Non-teaching salary	43,554						43,554
Doctoral Assistant	0	18,348	18,348	18,348	18,348	18,348	91,740
Graduate Assistant	0	9,343	9,343	9,343	9,343	9,343	46,715
Undergraduate students	0	10,000	10,000	10,000	10,000	10,000	50,000
Research fellows	0	10,000	10,000	10,000	10,000	10,000	50,000
Equity champions	0	15,000	15,000	15,000	15,000	15,000	75,000
CSPA practitioner placement	0	5,000	5,000	5,000	5,000	5,000	25,000
Non-personnel	131,000	85,014	85,014	85,014	85,014	85,014	556,070
New position support	0	15,000	30,000	40,000	45,000	50,000	180,000
Re-Engineering Madison CRM Student Success/Advising	0	475,000	475,000	475,000	475,000	475,000	2,375,000
Totals	174,554	1,017,812	1,393,385	1,590,473	1,681,750	1,773,027	7,631,001

Initiation

JMU demonstrated resource commitment to the QEP from the beginning through dedicated leadership, time, and personnel support. Senior leaders have been involved since the QEP topic selection process, with some serving on the QEP Director search committee; meeting regularly with the QEP Director; and providing opportunities for QEP awareness, collaboration, and advocacy. In committing to the QEP, leaders supported the search for a part-time QEP Director, served on and recruited for the working group, and provided budgetary support for graduate assistants to support and initiate the QEP. While permanent funding didn't exist for fiscal year 2022, the senior leaders identified funding where appropriate as the QEP Director and QEP WG made requests and recommendations for things like a survey pilot and travel related to research.

Implementation

As the QEP Working Group researched and designed the ESSS and its team, the institution continued to commit significant resources toward the QEP. For fiscal year 2023, JMU provided the first permanent funding for the QEP, nearly \$175,000. This new permanent budget would initially go toward temporary part-time salaries for the part-time director, graduate students, and undergraduate students.

Furthermore, the funds would support pilots like the non-cognitive survey distribution and analysis, use of a text messaging platform, and travel for conference and professional development opportunities. To fully begin implementing the ESSS QEP, the data scientist position was requested and approved early in the process because of its importance for data infrastructure and ecosystem development as JMU builds the system from the ground-up. The student success coordinator position was also hired initially because they will

play a pivotal role by providing everyday support for the Early Student Success System. Also, hiring the student success coordinator early enables that person to build relationships across campus and cross train with colleagues in the Dean of Students Office as they will work closely together on student case management and establishing communication between the ESSS and Madison Cares.

The budget proposal makes permanent a director line to lead the early student success team and be an advocate for equitable student success and retention across campus as well as requests permanent graduate student support, with both a doctoral student and graduate student requested. In addition to the funds for personnel within the permanent budget, the allocation included non-personnel funds to support continued use of the non-cognitive survey, texting platform, conference travel and professional development, research and pilot programs, and position support.

Completion

To make progress toward leveraging the ESSS toward increasing retention rates and closing equity-based retention gaps over the next five years, the budget proposal requests additional personnel support over the next five years. The request for a data engineer, second data scientist, and student success coordinator is included early in the budget proposal in anticipation of the scaling this new initiative, but also recognizing that adjustments might be made based on what is accomplished within the first year and what the ESSS team learns from the data insights. Furthermore, the request for four dedicated advisers to help with the anticipated increased advising and student success support load is staggered across the five years to use the time, data, and insights generated early on to inform and influence later budget requests.



E. ASSESSMENT

The proposed assessment plan includes observing, benchmarking, and using the results of formative and summative direct and indirect measures to determine the efficacy of the Early Student Success System. Moreover, insights will be used to make changes along the way to improve equitable student success and retention at JMU. While JMU and other higher education institutions are still identifying what new enrollment and retention trends are poised to occur after the COVID-19 online pivot during the spring 2020 semester and the anticipated enrollment cliff (Grawe, 2018), Table 5 represents JMU's cur-

rent retention baseline and targets over the next five years specifically for the QEP.

Note that the targets over the next five years focus particular attention on raising the retention rates for specific student populations that are currently experiencing lower retention rates than the overall student body. Retaining 20% more of the currently unretained students within these identified student groups will also increase the overall student body retention by 2%. This section will describe what measures are used to assess student success as well as how they will be implemented.

Table 5. QEP retention direct measure assessment baseline and targets

	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	Benchmarking	Benchmarking	Direct measure goal	Direct measure goal	Direct measure goal	Direct measure goal
Overall Retention	89.2%	TBD	89.6%	90.2%	90.2%	91.2%
Black students	84.9%	TBD	85.7%	86.4%	86.4%	87.9%
First-Gen students	83.1%	TBD	84.0%	84.8%	84.8%	86.5%
Hispanic students	86.8%	TBD	87.5%	88.1%	88.1%	89.4%
More than 1 race/ethnicity students	84.8%	TBD	85.6%	86.3%	86.3%	87.8%
Out of state students	87.3%	TBD	87.9%	88.6%	88.6%	89.8%
Pell-eligible students	88.5%(2020)	TBD	89.1%	89.7%	89.7%	90.8%
Transfer students	79.8%	TBD	80.8%	81.8%	81.8%	83.8%



Direct Measures

Undergraduate student retention is the most direct measure of student success addressed within the ESSS QEP, with student retention defined as the percentage of first-time students entering JMU that return the following fall. At JMU, first-time student retention is calculated separately from transfer-student retention, though both are important for the institution and ESSS. Overall undergraduate student retention is one direct measure that is included in the QEP assessment plan, where the overall undergraduate student retention rate is a singular number representing the entire first-time, first-year cohort. To get a more accurate measure of student success and retention, we also disaggregate retention rates among various social identities.

Disaggregated retention rates of specific student populations are another direct measure included within the assessment plan. As the goal is not just to increase retention rates, but also identify and close equity-based retention gaps, the assessment plan is particularly focused on the retention rates of those specific student populations that have been identified as having observably larger gaps with the overall undergraduate student retention rate. This group represents a reasonably large number of students within the student population group, and evidence-informed reasoning as to why that student population leaves JMU could arguably and successfully impact that group's retention rates. Through disaggregation of retention data, JMU can learn which students are more likely to leave the institution. Combining this disaggregated data with other indirect measures, the ESSS team can learn why specific student populations might be more likely to leave JMU and intervene proactively.

Through disaggregating data via various social identities and further institutional self-study, we identified the following indi-

vidual groups may benefit the most from the early student success system and QEP:

- Black students
- First-generation students (students whose parents did not obtain a four-year degree)
- Hispanic/Latinx students
- Multiracial students
- Out-of-state students
- Pell-eligible students
- Transfer students

These groups have been identified as having low retention rates when compared to the JMU student population (See Table 6).

Table 6. Undergraduate student retention rates at JMU

	Overall	Black	First- Gen	Hispanic	More than 1 race/ ethnicity	Out of State	Pell-eligible	Transfer
2013	92.4%	87.1%	91.3%	92.3%	93.2%	89.4%	91.5%	86.1%
2014	91.0%	85.9%	88.4%	91.3%	91.7%	89.8%	85.1%	85.9%
2015	91.2%	87.4%	89.2%	92.8%	94.1%	89.3%	87.5%	86.4%
2016	90.2%	90.5%	88.7%	91.3%	91.5%	87.5%	88.4%	82.8%
2017	90.3%	87.2%	86.8%	85.5%	90.3%	88.8%	88.3%	84.9%
2018	89.1%	86.4%	85.3%	88.0%	88.0%	86.1%	84.8%	86.3%
2019	89.0%	88.9%	84.2%	88.4%	87.1%	85.0%	86.5%	85.9%
2020	90.9%	91.9%	88.5%	87.3%	87.1%	89.7%	88.5%	92.7%
2021	89.2%	84.9%	83.1%	86.8%	84.8%	87.3%	TBD	79.8%

In addition to identifying student groups experiencing retention rates lower than the overall student body, reporting results is an important factor in how action is taken. Scholars and practitioners alike recommend against comparing different historically minoritized student populations against a historically dominant student group (i.e., comparing Black student retention to white student retention; Castillo & Gillborn, 2022). Within the QEP assessment plan, different student retention rates are compared to the overall retention rate rather than another student group's rate. The proposed assessment plan will also report and benchmark each of the above student group's retention data against their own group's historical trends. This is done to avoid comparing socially marginalized to privileged groups, resulting in the creation of deficit-based reporting, and to control for the overrepresentation of certain groups, like white students, that may skew overall retention data.

Understanding and predicting retention rates, whether overall or for specific student populations, has proven difficult the last few years due to the COVID-19 pandemic and economic and other socio-political factors across American higher education (Conley & Massa, 2022). JMU is no exception as the Fall 2020 institutional retention rates, both overall and in most demographic groups, experienced an unanticipated increase. The slight increase in Fall 2020 retention rates appear to be an exception, as retention rates for 2021 decreased and returned to pre-COVID rates. The temporary increase in Fall 2020 retention rates could be due to changes in academic policies at JMU to accommodate extreme cir-

cumstances during the height of the COVID-19 pandemic. For example, JMU offered credit/no credit as a course grading option to more students. Next, almost no students were placed on academic suspension or probation. Furthermore, students who may have been impacted or reflected in lowering retention rates may have decided or not been able to attend JMU or pursue higher education during that time period because of health, family, or structural inequality reasons. While the Fall 2021 retention rates were disappointing because they represented a decrease from Fall 2020, their return to Fall 2019 trends provides more confidence in our ability to understand and predict retention rates moving forward. However, establishing and understanding retention rate trends during the next two to three years of the ESSS QEP and assessment plan will prove critical.

The assessment plan for retention rates as a direct measure focuses on benchmarking during 2023-24 (year 1) while establishing seemingly reasonable and accomplishable goals for increasing overall retention rates and closing equity-based retention gaps over the first five years of the early student success QEP (Table 7). The method used to establish goals for retention rates focuses on student count and retention rate to better understand what is needed in terms of more students retained to move the needle on retention rates. Please note that while all data referenced here assumes the Fall 2021 retention rates, Fall 2020 data for Pell-eligible students is used due to the complications and delay with reporting federal financial aid data.

Table 7. QEP assessment retention rate goal benchmarking

	Sample Size	Retention Rate	Students not retained	Overall cohort	Overall retention rate	Current retention gap
1st Gen	544	83.1%	92	4770	89.2%	6.1%
Out of State	1009	87.3%	128	4770	89.2%	1.9%
Hispanic	341	86.8%	45	4770	89.2%	2.4%
Black	205	84.9%	31	4770	89.2%	4.3%
Transfer	774	79.8%	156	N/A	89.2%	9.4%
Pell-Eligible (2020 data)	616	88.5%	71	4452	90.8%	2.3%
More than one race/ethnicity	256	84.8%	39	4770	89.2%	4.4%



Using first-generation students as an example to understand the method, their Fall 2021 group size was 544 and retention rate was 83.1%. This means that about 92 first generation students were not retained by JMU. If the Early Student Success System was able to help increase retention of unretained first-generation students by 5%, that would mean

retaining about five first-generation students above and beyond those currently retained (Table 8). That reflects a 5% increase from the 92 first-generation college students not currently retained. That same method, based on the Fall 2021 retention data, is used such that a 10% increase retains nine more students.

Table 8. QEP assessment retention rate projected targets increasing unretained students

	5% increase	5% retention rate	5% retention gap	10% increase	10% retention rate	10% retention gap
1st Gen	5	84.0%	5.7%	9	84.8%	5.3%
Out-of-State	6	87.9%	1.7%	13	88.6%	1.5%
Hispanic	2	87.5%	2.2%	5	88.1%	1.9%
Black	2	87.7%	4.0%	3	86.4%	3.6%
Transfer	8	80.8%	8.8%	16	81.8%	8.2%
Pell-Eligible (2020 data)	4	89.1%	0.6%	7	89.7%	0.4%
More than one race/ethnicity	2	85.6%	4.1%	4	86.3%	3.7%

This method of calculating the number of currently unre-tained students, new retention rates, and equity-based retention gaps was used to project out to the five-year targets (Table 9 below). In analyzing the data, the QEP Director and QEP WG recognized that a reasonable five-year goal is increasing unre-tained student retention for each identified group by 20%, which would increase JMU's overall retention by 2%.

This method to project retention rates and set goals for the number of increased students retained has two limits currently. First, it assumes that there is no other impact on the retention rates of other student groups. While the increased number of students retained in the identified specific student group populations is taken into consideration for calculating a new overall retention rate, it holds all other student populations stable. For example, the 5% equity goal produces a new overall retention rate of 89.6% because about 21 new students are retained than are currently retained. This does not reflect increases in transfer students

because they are not calculated currently as part of the overall rate of first-time students returning for the following fall semester.

This new overall retention rate for the 5% equity goal is then used against the new student specific retention rates for the 5% equity goal to identify a new equity-gap assuming the 5% equity goal is met. For example, using Fall 2021 retention data, there is an equity gap of 6.1% for first-generation students when taking the overall retention rate, 89.2% and subtracting the first-generation student retention rate, 83.1%. The equity gap decreases to 5.7%, assuming the 5% equity retention goal is met. This is calculated with the new overall retention rate for the 5% equity goal, 89.6%, and the new first-generation student retention rate, 83.9%, for the 5% equity goal. So, for first-generation students, within five years of the ESSS QEP, the goal is to retain about 18 more first-generation students each year. This would increase the first-generation retention to 86.5% and decrease the equity-based retention gap to 4.4%.

Table 9. QEP assessment retention rate five-year targets

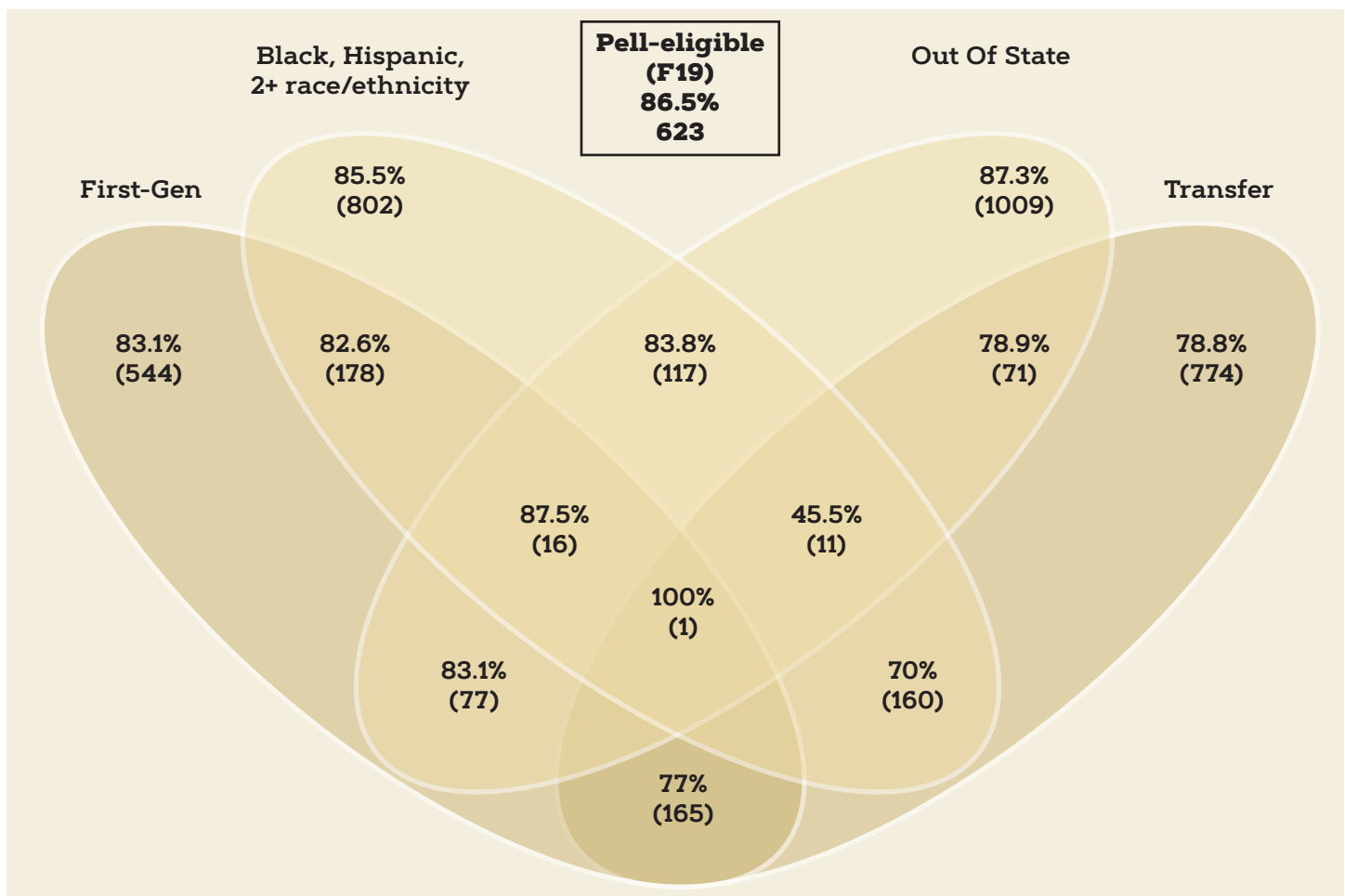
	2022 - 2023 (Year 0)				2027 - 2028 (Year 5)			
	Sample Size	Retention Rate	Students Retained	Equity Gap	Retention Rate	Students Retained	Equity Gap	Increase In Students Retained
Overall Retention	4470	89.2%	4255	N/A	91.2%	4350	N/A	95
Black Students	205	84.9%	174	4.3%	87.9%	180	2.9	6
First-Gen Students	544	83.1	452	6.1%	86.5%	471	4.4	18
Hispanic Students	341	86.8%	296	2.4%	89.4%	305	1.5	9
More Than 1 Race/Ethnicity Students	256	84.8%	217	4.4%	87.8%	225	3.1	8
Out-Of-State Students	1009	87.3%	881	1.9%	89.8%	906	1.1	26
Pell-Eligible Students (2020)	616	88.50%	545	2.3%	90.8%	559	0.1	14
Transfer Students	774	79.8%	618	9.4%	83.8%	83.8%	7.1	31

Second, this method for calculating, projecting, and benchmarking retention rates is limited because it does not account for students' multiple, intersecting social identities (Figure 4). This method assumes each student is discrete, i.e., that a first-generation student is not also Black and out-of-state, etc. Of course, this influences the numbers and projections, but we believe the goals for specific student populations and overall retention rates are still obtainable because they build slowly and are reasonable over time.

For example, in examining the Fall 2021 retention rates for specific student populations, first-generation, out of state, Hispanic, Black, and more than one race students account for 2,355 students if we assume no intersectionality among identities. But in

working with the Office of Institutional Research, we identified that if we do account for intersectionality, there are 1,998 unique individual students among these same demographic categories. Among first year students, this does not account for Pell-eligible students because that data lags one year. To increase the overall first year retention 2% over five years at the 2021 rates, we would need to retain about 95 additional students from these specific student populations to raise the overall retention rate, a reasonable goal within five years given the institutional commitment demonstrated in this QEP. Moreover, the ESSS team, alongside others at the university, will continue its work to identify additional ways to calculate retention rates that account for student intersectionality and adjust goals appropriately.

Figure 4. Retention rates and sample population by intersectional demographic identity. Note retention rates shown are Fall 2021 with exception of Fall 2019 for Pell-eligible students.



Indirect Measures

Indirect measures collect data important for use in the evaluation of the ESSS QEP's success, but do not directly measure student retention or success. Our indirect measures capture data on things that either influence retention indirectly or are important measures to assess the early student success system, which itself has an indirect impact on student success and retention. Monitoring and observing these indirect measures may provide insights into things that can be changed or adapted to improve the Early Student Success System, leading to higher retention rates.

The indirect measures initially included in the assessment plan are included in Table 11. Note that many of the initial indirect measures align to the Early Student Success System. Early student success can only have the potential to be impactful if we are collecting, analyzing, and acting on data that provide snapshots of what students are thinking, doing, and feeling in a given moment. For instance, the early student success team needs students to complete the ISSAQ survey as they join the university community and for faculty to complete and submit midterm grades. Once this data is collected, the early student success team is able to generate insights that can be shared

with advisers, faculty, practitioners, and others to act on to help students accomplish their goals. Like more direct measures, the goals for indirect measures have intentionally been established such that they build and increase over time along with the changes in cultural norms and institutional expectations. Examples of these flexible indirect measures include the midterm grade completion percentages (as norms about completion change) and adviser caseloads (as adviser lines are added and different frameworks or expectations for advising change across campus).

Finally, some indirect measures have been identified because their role in student success and retention is understood to be important, but more research and time is needed to better explain and benchmark. For example, a student’s sense of belonging and growth mindset are well established as contributing to student success and retention (Tinto, 2022), but little research has been done at scale at JMU. The ISSAQ provides an avenue to pursue this research, align with programming interventions, and function as a benchmark, but will need to be developed during the early part of the ESSS QEP assessment plan. Student GPA and DFW rates are similar as they have been studied in some departments and colleges, but still more time is needed to research, create shared understanding, and generate support for setting appropriate goals for GPA and DFW rates as indirect measures.

Assessment Responsibility

The Early Success & Enrollment Analytics Team, particularly the director, is responsible for tracking, analyzing, reporting, and using the assessment data collected to improve the Early Student Success System and collaborations with campus partners for impacting equitable student success and retention. Of course, the team will not work alone on these assessment efforts but will collaborate with colleagues across campus.

- The Office of Institutional Research will support and collaborate on student retention data direct measures.
- Departments within Academic Affairs and Student Affairs will support and collaborate on ISSAQ and check-in survey indirect measures.
- JMU Libraries will support and collaborate on the LMS Canvas data.
- The Registrar’s Office will support and collaborate on midterm grades, semester grades, and student status (full-time to part-time) reports.
- University Advising and individual colleges will support and collaborate on advising indirect measures.
- The Center for Assessment & Research Studies and Information Technology will support and collaborate throughout the assessment plan given their roles and expertise on campus.
- Information Technology will support and collaborate throughout the assessment plan given their roles and expertise generally, but especially as they build out the CRM and early student success system.

Table 10. QEP retention indirect measure assessment baseline and targets

	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	Benchmarking	Benchmarking	Indirect measure goal	Indirect measure goal	Indirect measure goal	Indirect measure goal
ISSAQ response rate first year & transfer students	91%	?	91%	92%	93%	95%
First year student faculty midterm completion percentage	74.40%	?	80%	85%	90%	90%
Transfer student faculty midterm completion percentage	N/A	?	50%	75%	90%	90%
Non first year/ transfer student faculty midterm completion percentage	N/A	?	10%	15%	25%	50%
Check-in survey sample size	491	?	2,500	5,500	5,500	8,000
Check-in survey opt-out percent	1.70%	?	10%	15%	15%	15%
Primary (professional) adviser caseload average	166-764 range	?	TBD	TBD	TBD	350
Faculty adviser caseload average	18- 202 range	?	TBD	TBD	TBD	35



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