CASES FROM THE FIELD

Leveraging Data to Promote Student Success: A Case Study

By Lisa Azure, Sheridan McNeil, Leah Woodke, and Monte Schaff

Indigenous Students in Postsecondary Education

Kateri grew up on a Native American reservation located in a rural, remote area of the United States. She and her brother were raised by her grandmother, and she spent most of her time with her cousins and other extended family. She feels a sense of security in her community but is also aware of the challenges that result from high poverty, addiction, and limited economic opportunities. Kateri wants to make a difference in her community and knows that a college education would help her do that. Kateri is a Native American, first generation (neither of her parents have earned a college degree), low income, single, and female. She represents a composite of the "typical" student who attends United Tribes Technical College (UTTC). And she is like many other American Indian and Alaska Native (AI/AN) students across the country who want to make things better in their communities and for their families.

Enrollment of American Indian and Alaska Native (AI/AN) students in postsecondary education in the United States has been increasing over the past three decades (Chee, Shorty, and Robinson Kurpius 2019). However, AI/AN students have historically performed below other ethnic groups in postsecondary education in the United States with persistence and retention rates lower than all other ethnic groups (Atwell, Manspile, and Bridgeland 2021; Fish, Livingston, VanZile-Tamsen, and Patterson Silver Wolf (Adelv unegv Waya) 2017). Several factors contribute to lower persistence and retention rates for AI/AN students. Federal policies of forced assimilation and boarding schools have created historical mistrust of educational systems (Fish, *et al*. 2017, Martinez 2014). First-generation students are often unaware of how to navigate the systems associated with college, including admissions and financial aid. Schools in reservation communities often are not able to provide advanced academics designed to prepare students to be academically ready for college. Native students from rural and close-knit communities can struggle with being away from home and in an environment where few of their peers look like them or understand their culture. For AI/AN students, cultural identity within the

context of postsecondary education has been identified as a critical component to having a positive experience within their campus community (Dabdoub, Snyder, and Cross 2023). It is important for AI/AN students to have both academic and cultural support in higher education. Typical mainstream institutions do not provide the cultural or academic supports needed to foster a sense of belongingness and promote a college-staying culture for AI/AN students (Bryan 2019; Harrington and Harrington 2011; Martinez 2014).

The lack of culturally-relevant education opportunities and academic supports within mainstream postsecondary institutions was an impetus for the development of tribal colleges and universities. The Tribal College Movement began more than 40 years ago with the establishment of the first tribally-controlled community college in 1968. UTTC was established in 1969. Today, there are 37 tribal colleges and universities (TCUs), many of which are located on Native American Indian reservations. TCUs, including UTTC, are specifically designed to support the cultural and educational needs of AI/AN students, many of whom come to college with several factors that put them at risk to college success.

About UTTC

Located just outside the city limits of Bismarck, ND, UTTC was founded as a workforce development training center. The purpose of this workforce development training center was to provide a community in which American Indian people can acquire an education and obtain employment. UTTC is operated by the five tribes in North Dakota, which include the Three Affiliated Tribes of Fort Berthold, the Spirit Lake Tribe, the Sisseton-Wahpeton Oyate, the Standing Rock Sioux Tribe, and the Turtle Mountain Band of Chippewa Indians. UTTC was regionally accredited in 1982 and designated as a 1994 Land Grant institution. Today, UTTC offers three certificate/diploma programs, fourteen associate degree programs, and four bachelor's degree programs. UTTC is currently accredited through 2031.

The institution has served students from more than 75 federally-recognized Indian tribes. Serving about 650 students annually, the student body is typically 90 percent or more AI/AN with more than 70 percent low income and about 65 percent first generation. First-generation students generally need higher support to understand and navigate higher education systems. The college provides a wide range of wraparound services including childcare, an elementary school, food pantry, personal and career counseling, housing, and student health services. UTTC's location offers students the amenities of city life and the supports and sense of community of a small campus.

Using Technology to Address Challenges to Student Persistence

UTTC uses the Jenzabar enterprise data management system. The college has been refining its data collection processes as well as its use of data to drive decisions. A priority was to use data to better promote student success. As a result, the college recognized that too many students were leaving the college before completing a degree. Persistence and retention rates are indicators of student success and serve as metrics that lead to graduation. Persistence is measured by the percentage of full-time students who start at the college in a fall semester and either graduate or continue in the following spring semester. Retention is measured by the percentage of full-time students who start at the college in a fall semester and either graduate or continue to the following fall semester. The persistence rate for students who entered in Fall 2015 was 45 percent, and the retention rate was just 19 percent, which was below the retention rates of other TCUs. It was important to develop a systematic way to identify students at-risk for attrition and to assess the impact of retention processes that were implemented.

A decision was made to purchase the Jenzabar Retention Management System (RMS), which integrates seamlessly with the college's Jenzabar data management system. The RMS includes an early alert system as well as modeling to identify risk factors unique to UTTC's student population. The RMS supports the college's focus on improving persistence and retention rates, which are precursors to improving student completion or degree attainment.

RMS Implementation included a wide range of stakeholders, comprising staff from enrollment management, wellness, academics, student services, housing, safety and security, and IT departments. Jenzabar worked with UTTC to develop a retention model specifically for the student population. A regression analysis conducted on the previous five years of student data identified seventeen factors that contributed either positively or negatively to a student's persistence at UTTC. These factors included having unmet financial need, state residency, marital status, being first generation, having dependents, and how early they applied to college, among others. The model was applied to entering new and transfer students who were full time and had not previously enrolled at UTTC. The RMS modeled students as safe, at risk, or high risk depending on their individual risk factors.

In addition to development of the retention model, UTTC configured the companion early alert system (EAS). UTTC worked with stakeholders to first identify what constituted an early alert and to define the workflow and communication flow for alerts as well as how these would be managed. This included who would receive the EAS messages, how the alerts would be initiated, what actions would be taken and by whom, when alerts would be closed, and who would be responsible for closing alerts. Initially, the college developed six alert types. Three alert types were related to academic performance (grades, attendance, general concerns); two alerts were related to financial aid (overdue bill, general concern); and one was "other," which could encompass concerns that did not fit into the other five alert types.

UTTC launched the RMS in the fall of 2016. Entering students were modeled based on their risk factors, and faculty and staff began using the EAS. The EAS allowed faculty and staff to access the RMS and submit an alert on a student simply by logging into the college's information system web portal (My.UTTC). Training on the early alert submission processes was provided at the beginning of the fall 2016 semester, and included faculty, advisors, wellness counselors, and other relevant staff. The alert process started with faculty (or other staff) submitting an alert. The student's advisor and wellness counselor would be notified by email and see a notification in the RMS dashboard. The student who was the subject of the alert would receive an email that was sent from the system on behalf of the personnel who submitted the alert (*see* Figure 1, on page 42).

Faculty were the earliest adopters, and by the end of that academic year, 169 alerts had been submitted on students. The two largest categories of alerts, all submitted by faculty, were related to attendance and grades. Using the RMS appeared to be making a difference. The persistence rate for students who entered in Fall 2016 increased to 52 percent (up from 45%) and retention increased to 26 percent (up from 19%) the previous year. More progress was made the following year. The persistence rate for full-time students who entered as new or transfers in Fall 2017 increased to 68 percent, and the retention rate increased to 49 percent.

But then the persistence and retention rates began to decrease. The college needed to take a closer look at potential reasons for these dips. The student population at UTTC was changing. Students coming to the college were less likely to be married; they were younger and closer to the typical college age; and fewer students had dependents. Institutional changes designed to address student risk factors identified in the RMS model had also been made. UTTC had established a tuition waiver program, which helped to address unmet financial need and promote earlier completion of admissions applications. To be eligible for the tuition waiver, students were required to complete admissions requirements at least four months before the semester started. The college's retention team suspected that because of these new supports and interventions, the retention model would need to be revised. The early alert messaging and workflows would likely need to be updated as well.

Refining the System and the Process

In 2019, a new regression analysis was completed. UTTC had made several changes to support services provided, policies that impacted students, and other systems designed to address the risk factors identified in the previ-

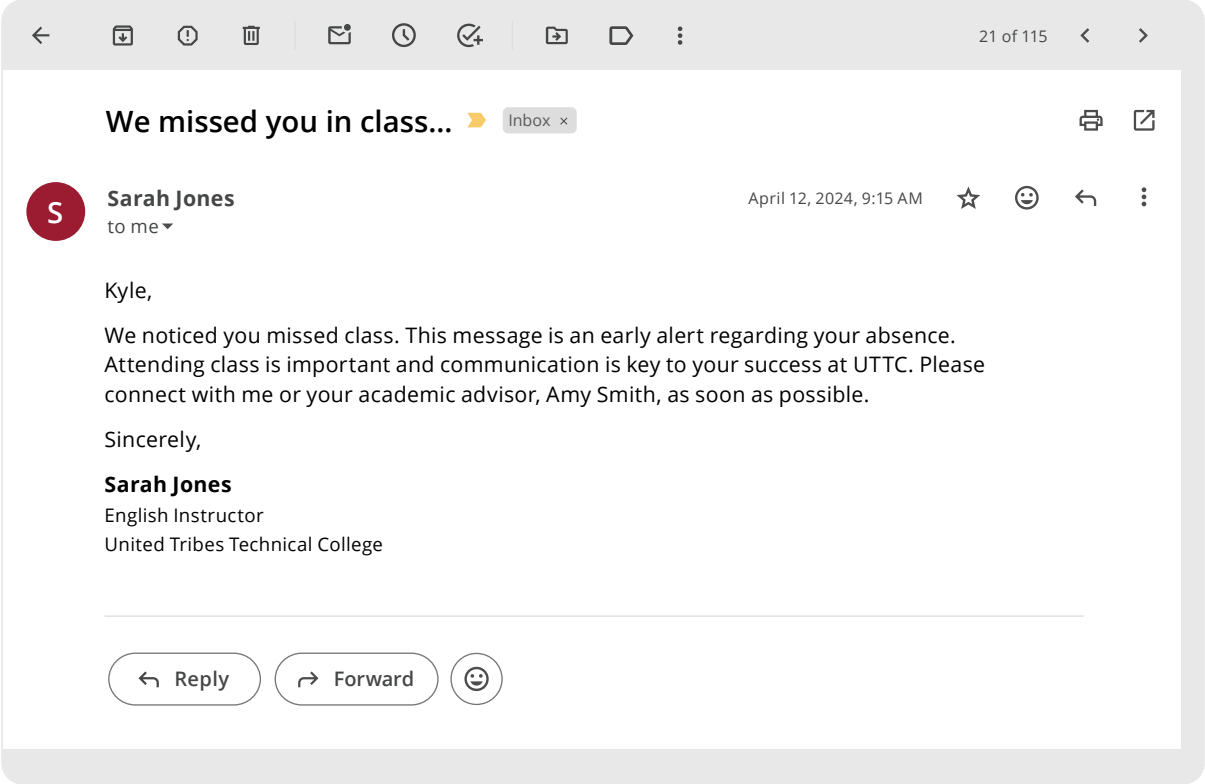

FIGURE 1 ➤ Original System Generated Level 1 Alert Email to Student

ous modeling. Data from the students who entered from 2015 to 2018 were used to develop a new model. This updated cohort of students more closely represented the characteristics of current students because they had experienced some of the systems changes. As suspected, the new model identified just three factors that impacted student retention compared to the seventeen in the previous model. These factors include state residency (from in or out of North Dakota), the number of college credits the student transferred in, and whether the student transferred into the institution on probation because of previous experience in higher education.

The college now regularly engages stakeholders to update the configuration of the EAS and to refine processes and use of early alerts to better support students. These stakeholders include faculty, the institutional research office, student support staff, and students. Discussions with faculty yield information about their experiences with the EAS as well as their suggestions for improvement. Data walks and discussions with students yield information about the student experience with early alerts as well as their ideas about how the system could better support them. For example, students shared that early alert emails often generated feelings of anxiety and fear, especially when they would receive multiple alerts in a day. Discussions with counselors provide information about how to best connect students to support systems as well as how counselors can best support faculty advisors. These data engagement strategies reveal areas where the early alerts, communications, and workflows can be enhanced. Some of the refinements made to the EAS include:

- Alert types have been revised to emphasize non-cognitive factors that are designed to support student success. The revised alerts relate to work habits regarding assignments, attendance, classroom conduct,

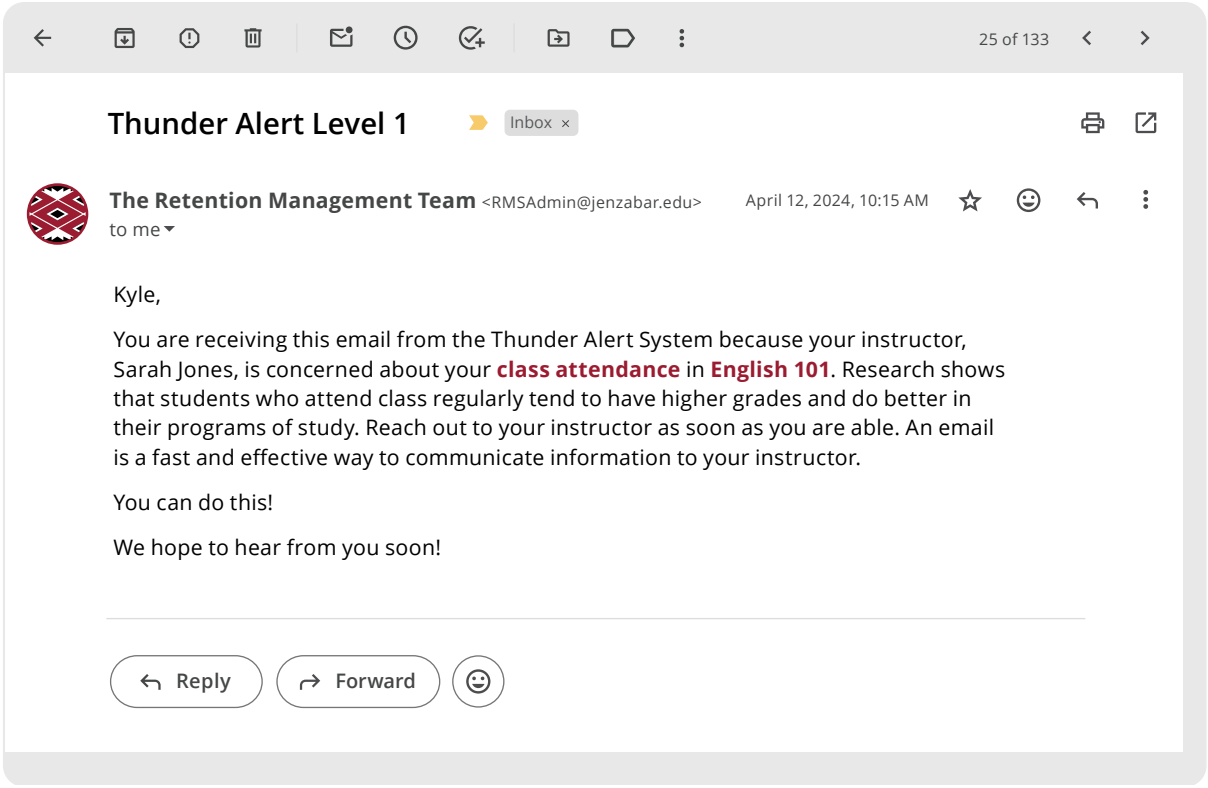

FIGURE 2 ➤ Revised System Generated Level 1 Alert Email to Student

and communication as well as mental health and wellness concerns and a general category that can be used for other general concerns.

- Levels of alerts have been created to triage concerns. Level 1 is handled by the course instructor if it is an academic concern. Level 2 is initiated when the Level 1 concern is not resolved or if the student does not respond to the Level 1 alert. Level 2 concerns are handled by advisors, who may bring in counselors or other supports as appropriate. Level 3 is initiated when the Level 2 concern is not resolved or if the student continues to be unresponsive to the early alert concern. Level 3 alerts are used when the student will be withdrawn from a course or the institution.
- Thunder Alert guidance has been clarified to help faculty, advisors, and counselors better understand when to submit each type of alert as well as the communication and workflows for each level of alerts. The guidance is included in the faculty handbook, and helpful hints are provided within the RMS for convenient reference.
- Alert messaging to students has been revised to be more student friendly, reflect that they are system-generated rather than from faculty, and provide helpful information. In addition, the alerts have been rebranded as "Thunder Alerts" and now include the college's mascot, Thunder. An example of a revised alert that a student may receive through email is shown in Figure 2.

Leveraging Data for Continuous Improvement

A wealth of data is collected in the RMS about alerts, actions, and outcomes. The data collected from the RMS can be tied directly to the college's information

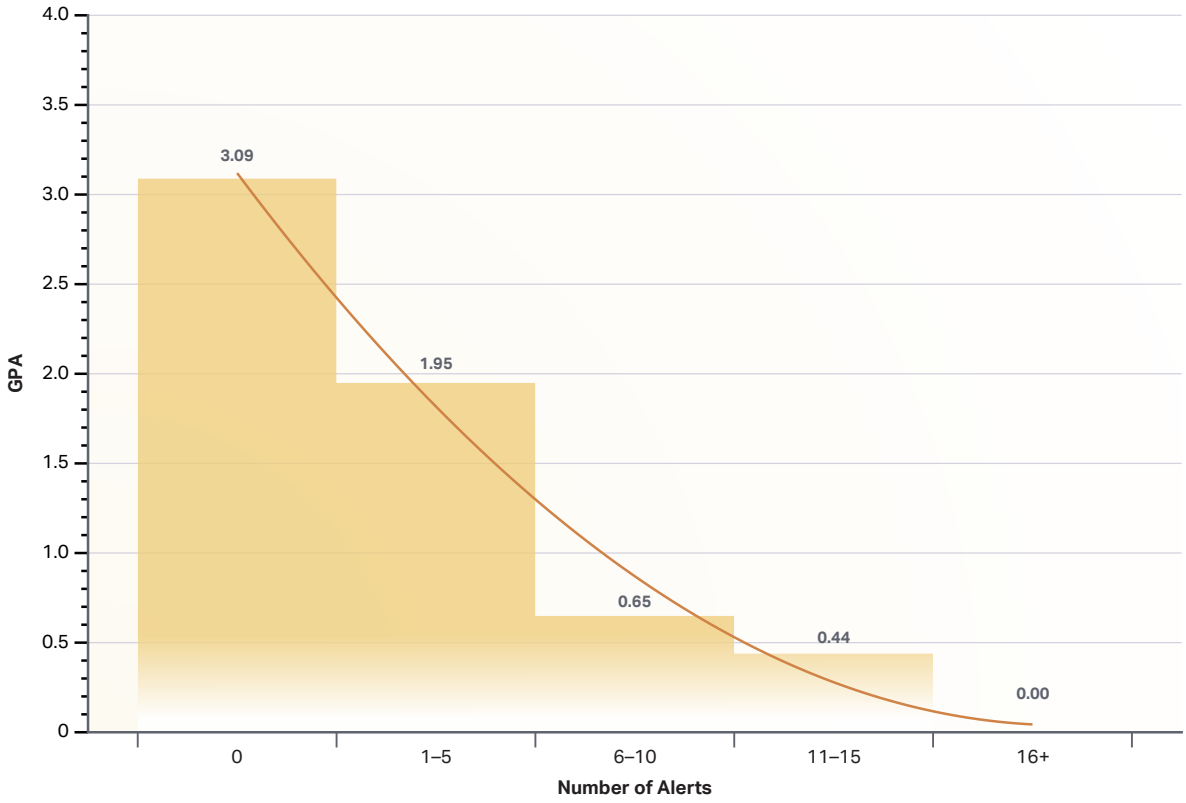

FIGURE 3 ➤ Correlation Between Alert Frequency to GPA

management system because of the integration with the college's student management system. The RMS data is combined with student grade and attendance data and then disaggregated by student characteristics to identify equity gaps. These data are analyzed to help the college better understand patterns of behaviors and the effectiveness of the retention processes. Retention managers, faculty, and other stakeholders get a clear picture of what kinds of issues students struggle with, which student groups struggle the most, what types of courses students struggle with most, and other patterns that help inform decisions about how to best support students. The data also helps students see how their own actions contribute to their success. An example of a visualization that shows the relationship between the number of alerts and grade point average developed for a student data walk is provided in Figure 3.

The college continues to refine and expand its capacity for institutional storytelling through data visualization. A retention dashboard has been developed in Power BI, which allows retention managers to see all the Thunder Alerts data in a snapshot. The dashboard includes information about who is submitting the alerts, how long the alerts are open, types and levels of alerts, and patterns over time. This interactive dashboard allows the user to drill down into the data to learn more about who is submitting the alerts when they are being submitted, and why. Retention managers use the data to support faculty and advisors and to coordinate resources to support student retention efforts when appropriate. A sample of the dashboard is provided in Figure 4 (on page 45).

The result of these efforts has been encouraging. Sharing data, garnering input from a wide variety of

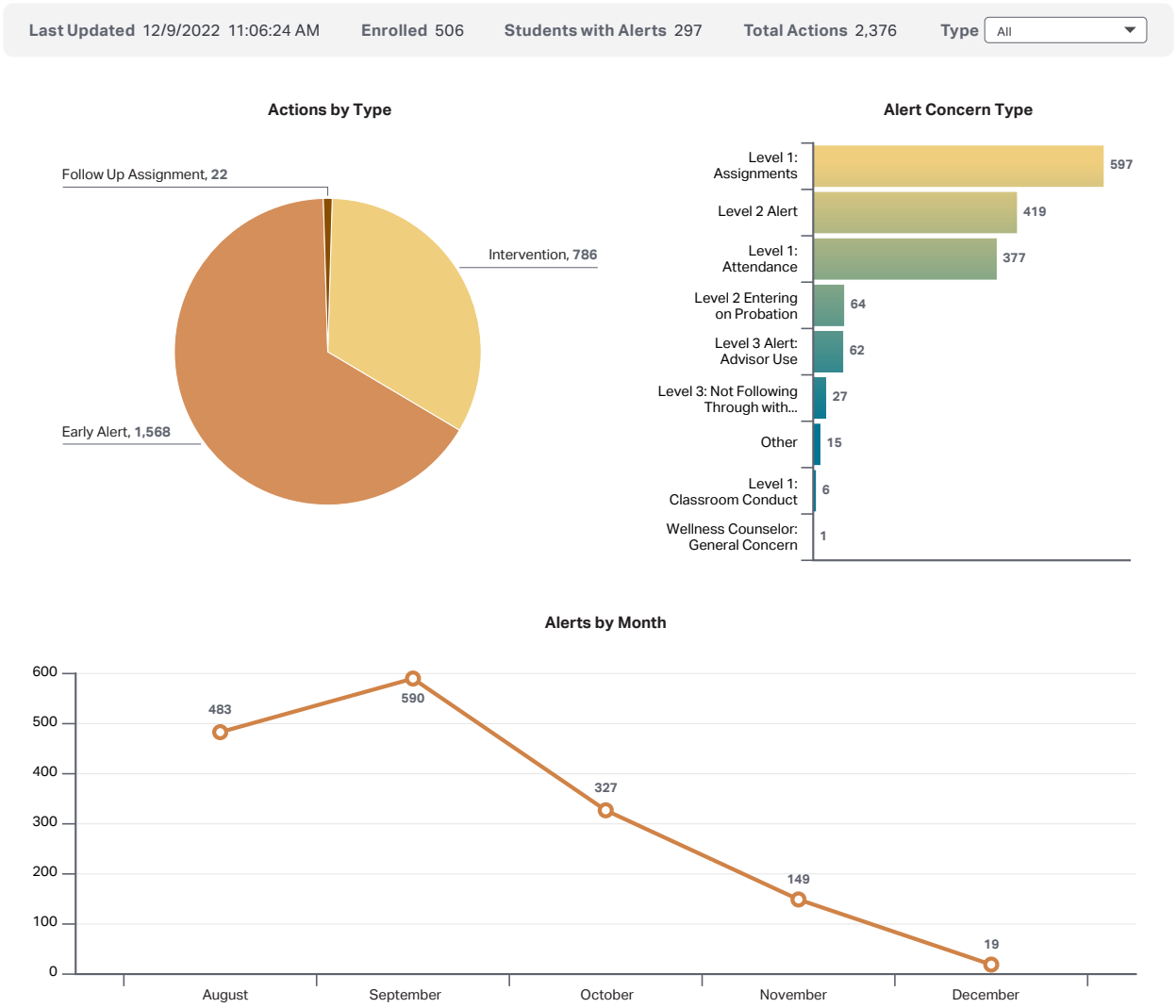

FIGURE 4 ➤ Sample Dashboard Report

stakeholders, and clear guidance has created substantial engagement with the RMS. There were 1,570 Thunder Alerts submitted in Fall 2022 compared to 169 in the first year of implementation. Students said they know and appreciate that UTTC cares about them. The impacts from this engagement are also evident in the institution's persistence and retention numbers. The fall-to-spring persistence rate for full-time, new students has exceeded the institutional goal of 70 percent two years in a row. The fall-to-fall retention rate more than doubled from 19 percent in Fall 2015 to 56 percent in 2020 and 50 percent in 2021.

Next Steps

While the college is pleased with the improvements in student persistence and retention, the Thunder Alert and RMS usage is continually evolving. The college is working on providing a dashboard for faculty advisors similar to one used by retention managers. The advisors' dashboard will provide a convenient snapshot for advisors to see alert data on their advisees in one real-time report. In addition, the college will continue to disaggregate the data across a variety of characteristics such

as age, gender, and locale to identify potential equity gaps that can be addressed.

The college also plans to continue to enhance professional development for using Thunder Alerts. Professional development on culturally-responsive support and teaching strategies are regularly offered to help support decisions about communications and workflow strategies. In the future, the college plans to leverage the Thunder Alert data as part of the institution's co-curricular assessment. The data will be used to establish benchmarks for Thunder Alerts associated with work habits. The college plans to share data associated with student work habits (attendance, assignments, and communication) with students so they can contribute to the process of meaning-making. In this way, students will play a meaningful role in determining next steps and have agency in their own success.

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About the Authors

Lisa Azure

Lisa Azure, Ph.D., is the Vice President of Academic Affairs at UTTC. She is in her 30th year of employment at UTTC, starting as a Kindergarten teacher at the campus elementary school, serving as Teacher Education Chair/faculty from 2000–2022 and Vice President of Academic Affairs from 2015 to the present. One of the dominant themes in Dr. Azure's dissertation, *Actualizing the Seventh Generation Prophecy in Teacher Education: A Case Study of Preparing Teachers at a Tribal College*, was student success as defined by the case study participants, who were all students at a tribal college.

Sheridan McNeil

Sheridan McNeil, Oyate Ohowicada Win (Respects the People Woman), is the former Dean of Instruction at UTTC. Ms. McNeil graduated from Sitting Bull College with her master's degree in curriculum and instruction and is a strong advocate for Indigenous people's rights on the local and national level. She has been employed at UTTC for almost seven years. Ms. McNeil is originally from the Cannon Ball community at Standing Rock.

Leah Woodke

Leah Woodke, Ph.D., has nearly 40 years of experience in education ranging from early childhood to higher education; with more than 20 of those years in work related to Tribal higher education. She has extensive experience as a program evaluator and has worked with organizations in the private, public, and tribal sectors. Dr. Woodke currently serves as the Institutional Research Director at United Tribes Technical College. Her responsibilities include supporting institutional planning and goal setting by collecting and analyzing data related to student success and momentum. She believes the key to improving student outcomes is to involve the right stakeholders, including students and faculty, in the data meaning-making process.

Monte Schaff

Monte Schaff serves as the Dean of Enrollment Management. His responsibilities include overall leadership for the enrollment services staff, including admissions, registrar, financial aid, transfer and career services, and retention. Prior to his current role, Schaff most recently served as institutional research analyst in the Office of Institutional Research. He began his career at UTTC in 2010 and has worked in a variety of departments including academic affairs, IT, educational outreach, as well as serving as an adjunct instructor. Schaff holds a master's degree in educational technology from the University of British Columbia and a bachelor's in business administration from the University of North Dakota.