



The Student Resilience and Well-Being Project: Opportunities, Challenges, and Lessons Learned

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Abstract

The Student Resilience and Well-Being Project (SRWBP) was a collaborative effort to address concerns about college students' resilience and well-being involving academic researchers and student affairs professionals at four private higher education institutions. In this paper, we provide a practically oriented, high-level description of three major components of the project. Each concludes with a brief discussion of significant challenges and how they were addressed. We begin with an overview of the project that emphasizes administrative challenges associated with coordinating and deploying the efforts of multiple researchers and practitioners at four schools with no prior experience working together on similar projects. We next describe the four-year longitudinal study that became the centerpiece of the project, emphasizing the challenges associated with coordinating researchers' interests, recruiting and retaining student participants, and incorporating information from student records into the data set. Effective use of the resultant large and complex data set necessitated systems and policies for its management, storage, documentation, and sharing of the large amount of data, which is summarized in the next section. The paper concludes with a summary of the broader challenges and lessons learned from the SRWBP and recommendations for teams considering similar efforts.

Keywords College students · Data stewardship · Research–practice partnership · Resilience · Translation

The proportion of students on college campuses seeking mental health services has been on the rise for more than a decade (Lipson et al., 2019). Increases in students' reports of generalized anxiety, depression, and social anxiety (Xiao et al., 2017),

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coupled with a decrease in the stigma associated with seeking mental health services (Lipson et al., 2019; cf. Debate et al., 2018), have contributed to this trend. In addition to the need for increased investments in college mental health service availability and access (Fu & Cheng, 2017), more research is needed (Brewer et al., 2019) that focuses on student characteristics and aspects of the college experience that have contributed to the increased demand for mental health services and apparent decline in college students' psychological well-being.

In this paper we describe a fruitful partnership involving administrators and other academic professionals in student and academic affairs and research-active faculty members in psychology departments at four schools, funded by a private foundation to address the need for evidence-based programs and services that support college student resilience and well-being. The aims of the five-year project were to use survey and administrative data to (a) characterize the general level of resilience among students at partner institutions; (b) identify the factors that enhance or undermine student resilience; and (c) adjust existing policies and programs and design new ones that foster student resilience and well-being. In the next section, we provide an overview of the schools and personnel involved in the project and the key activities in which the project team engaged. We then provide an overview of the four-year longitudinal data collection effort, including the addition of administrative data from selected records maintained by the schools. The description of this effort is followed by a section on managing the privacy, security, and sharing of project data.

Given the complexity and duration of the project, these descriptions are necessarily selective. We focus primarily on aspects of the project that required creative and collaborative problem-solving with the goal of providing practical ideas and solutions for practitioners, researchers, and funders considering similar projects. We conclude with a discussion of the benefits and challenges of a partnership involving practitioners and researchers at multiple universities.

Description of the Project

The *Student Resilience and Well-Being Project* (SRWBP) was a multiyear, multi-site project initiated by student affairs professionals at four private higher-education institutions at the invitation of a foundation that supports educational access and success under its higher education program area. Support of the project was unique for the foundation in three significant ways. First, researchers at the four schools worked closely with practitioners and the foundation from the outset. The involvement of these team members made possible a second unique characteristic of the project: a focus on collecting new data from students attending the four schools, which would serve as a basis for developing and evaluating policies and programs relevant for students' well-being. Finally, practitioners, researchers, and their teams at the four schools would develop an infrastructure to enable a coordinated and collaborative effort sustained over multiple years. This effort departed considerably from the foundation's typical higher-education project, and thus it required considerable flexibility and clear communication between all parties.

Table 1 Description of schools involved in the student resilience and well-being project

School	Type	Class			
		Size ¹	% Women	% Nonwhite ²	% On Campus
A	Historically Black Liberal Arts University	265	57	91	91
B	Liberal Arts College	470	53	33	100
C	Liberal Arts University	762	59	12	100
D	Research University	1,745	52	54	100

¹Full-time, first-time, first-year students

²Undergraduate student body in 2020

Basic information about the four school, arbitrarily designated as A, B, C, and D, is provided in Table 1. The inclusion of these schools invites comparisons; however, the project team decided at the outset that between-school comparisons would not be made. The schools were not selected to represent populations of school type. Moreover, they differ in myriad ways that preclude rigorous interpretation of observed differences in resilience and well-being and their causes. The foundation requested that the schools and their students not be formally compared using data from the project, a principle that the project team endorsed and honors.

A defining feature of the project is its evolution in scope and duration from initial discussions to the project described in this article. Before the project was formally launched, the foundation convened a series of conversations with student affairs administrators from the four schools to discuss how they might partner to promote intentional, holistic student health and wellness on each campus. The group initially defined its goal as increasing *student resilience*, which they defined as “the ability to thrive in the face of adversity and other difficult circumstances.” Next, the foundation invited School D to assemble a team and submit a proposal for funding to determine the level of resilience among undergraduate students on campus and ways to address the causes of students’ increasing use of mental health services. A senior student affairs professional, four faculty members, and a postdoctoral researcher—building on an existing, smaller-scale research–practice partnership established at School D (see Asher & Weeks, 2012)—developed a proposal focused narrowly on the interests expressed by the foundation. Upon receipt of the initial proposal, the foundation invited the School D team and comparable teams from Schools A, B, and C to a meeting to discuss the potential for a collaborative project. Practitioner leads at each school identified faculty members in social, clinical, developmental, health, and educational psychology whose interests and expertise aligned with the broad focus of the project, and invited them to participate. A postdoctoral researcher was also selected to play a major role in directing and coordinating the project. On the basis of discussions at the meeting, the project timeline was extended from three to four (and later, five) years, with an initial year set aside to develop a structure and procedures for collaborating on three years of data collection and resilience-supportive programming. With input from teams at Schools A, B, and C, the range

of constructs to be assessed was broadened considerably to increase the breadth of generalizable knowledge about college student health and well-being produced by the project. To bring students into the research effort, a faculty-led, residential summer research experience for undergraduates was added. The SRWBP was formally launched on receipt of the award notice approximately 18 months after conversations were initiated by the foundation.

With no history of the schools working collaboratively in a researcher–practitioner partnership, a major focus of the first months of the project was developing and refining processes to enable communication between the 11 researchers at the four schools and between the researchers and the 14 practitioners within and across the schools. A small central staff (data manager, research assistant, data analyst) and the project director were located at School D and worked on behalf of the full team. In the first three years of the project, these 29 team members were joined by foundation staff for quarterly, day-long, in-person meetings focused on planning and coordination. Between those meetings, two small groups coordinated the collaborative work. A *Steering Committee* comprising one researcher and one practitioner from each school and the project director, communicated with the foundation. A *Research Committee*, comprising one researcher from each school and the project director, met regularly to communicate ideas and concerns. In addition to coordinating the efforts of these committees, the PhD-level project director, was charged with overall management of the project, including regular communication with the full team, management of central staff, and setting priorities and goals to keep the project on schedule. The appointment of a project director whose responsibilities spanned the four schools, and establishment of Steering and Research Committees that included researchers and practitioners from partner schools, proved to be critical components of the project.

The primary activities of researchers and staff members were conducting surveys of all entering first-year students, a final survey of all graduating seniors, and designing and running a four-year longitudinal study of a single entering class of students at the four schools. The longitudinal study is described in the next section. We simply note here that the project grew from an initial plan for three years of work to five years, with twice-per-year assessments of a subsample of students across four years at each school. This increase in the scope of the research component of the SRWBP was driven by the researchers, supported by the practitioners, and made possible by a foundation willing to reconsider project priorities when new opportunities and needs became evident. A benefit of this broadened scope was a rich set of data suitable for modeling stability and change over time (e.g., Weeks et al., 2021). A drawback, at least in the short term, was the shift in focus from primarily developing policies and programs based on new data from the project to the generation of new knowledge that would inform policies and programs late in the project period. We address the tradeoffs between prioritizing research and prioritizing practice in the discussion section.

One point to emphasize is that practitioners were centrally involved throughout the life of the project. In addition to regular interactions with researchers at their respective schools, practitioners met together and with the full team of researchers at quarterly meetings hosted by the foundation. At these meetings, practitioners

discussed and shared with researchers concerns related to student well-being across the four schools. They worked with researchers to: (a) develop recruitment and enrollment strategies to ensure maximum participation by, and retention of, students in the longitudinal study; (b) select constructs and measures to be included in Fall and Spring assessments each year; and (c) identify research results that would inform programming designed to provide support for student well-being. Later in the project period, practitioners helped connect researchers with administrative units that maintain student records (e.g., Registrar, Student Health) that could be merged with data from the longitudinal study using appropriate data security measures (described below) and with student consent. As data collection progressed, descriptive information was provided to the practitioners and the foundation on request and, more formally, in extensive annual reports. Based on their reading of the descriptive information, practitioners requested specific information that might prove useful in program design and evaluation. Toward the end of the project period, practitioners worked with researchers to frame the research results and develop ways of presenting them that could be distributed to student affairs staff across the schools to facilitate evidence-based decision making about policies, priorities, and programs.

A distinctive feature of the SRWBP was an eight-week, residential research experience for undergraduate students from the four schools each of the first three summers. The lead faculty researcher at School B ran the program, which included two students from each school. With guidance from the faculty lead, the students worked on a group project using SRWBP data. They also worked on individual projects mentored by a faculty member at their home institution. Participants in the program presented the results of their work to the full project team at a gathering hosted by the foundation at the end of the summer and at summer undergraduate research conferences. In addition to its benefits for the participants, this program resulted in timely analyses of project data that stimulated discussions between researchers and practitioners about additional analyses that might be done and implications of the findings for practice.

Challenges and Lessons Learned

Allow Ample Time for Developing Operating Principles and Procedures

The SRWBP was unlike any higher-education project the foundation had funded. Moreover, it was unlike any project the large group of researchers and practitioners had experienced. As such, the structure and scope of the project, as well as operating principles and procedures, emerged as the project unfolded. A major challenge was mobilizing and optimizing the efforts of 11 researchers and more than a dozen practitioners at four schools, all of whom were fitting SRWBP commitments into already busy professional lives. Additionally, because the funded proposal did not include a detailed budget, the distribution of funds for research and practice purposes across schools was an ongoing and occasionally challenging aspect of the collaboration over the first three years of the project. The primary lesson learned, and a cautionary note for teams taking on similar projects, is that this work took considerable time,

effort, and communication over an extended period of time. It was well into the second year of the funding period before the team reached a common understanding of how the content and administration of the regular assessments would be undertaken at the four schools. How researchers at Schools A, B, and C would access central project staff required reaching consensus on the roles of these team members and priorities governing their effort on the project. Having a project director to supervise project staff and manage requests for support from central staff generally addressed this concern. Concerns about how the researchers would work jointly and productively on a research protocol were effectively addressed by the Research Committee. The Steering Committee, with researcher and practitioner representatives from the four schools, interacted with the foundation on behalf of the team and dealt with budget amendments and proposals to expand or shift the scope of the project. Finally, the foundation requested regular reports and updated timelines, which occasioned regular assessments of progress and, as necessary, adjustments to priorities and timeline.

Ensure a Steady Flow of Information from Research to Practice

Another challenge, which grew as the project progressed, was how to leverage the data to inform practitioners wanting to make evidence-based decisions about whether to continue ongoing programs, adjust those programs to better support student resilience and well-being, or develop new programs (see Penuel et al., 2020, for a discussion of “synchrony” challenges in research–practice partnerships). As data became available in the second year of the project, researcher presentations at quarterly meetings of the full team was one means by which information of potential value for practice was shared. Also beginning in Year 2, extensive descriptive information was provided in annual reports. As the project began to transition from a primary focus on data collection to data analysis and translation, researchers provided information to practitioners in multiple ways. At each school, researchers and practitioners met regularly to discuss research results and their implications for practitioner planning. Researchers produced a number of one-page documents describing in nontechnical terms a potentially actionable finding. Practitioners were encouraged to make specific requests for analyses, which were performed by central staff. Practitioners and researchers together served on panels at the Symposium on Academic Resilience in Higher Education (Weeks et al., 2018) and an American College Health Association meeting (Ringle et al., 2019). As the project moved into the fourth year, senior practitioners increasingly led the effort to use the data to focus their efforts aimed at supporting student resilience and well-being.

The Longitudinal Study

A major focus of the SRWBP was a longitudinal study designed to identify and understand the factors that contribute to the development of healthy and fulfilling lives for students in college. Broadly, the longitudinal study focused on (a) sources of challenge and stress in students’ lives, (b) potential underpinnings of risk and

resilience, and (c) psychological, social, achievement, and health outcomes relevant to students' lives in college. Potential underpinnings of risk and resilience encompassed a diverse set of characteristics and processes that research suggests may either promote or undermine student well-being in the face of stress (e.g., Campbell-Sills et al., 2006; Carver, 1998; Leary & Derosier, 2012). Within these three overarching categories, constructs studied cut across domains including academics and college life; stress and coping; dispositions and personality traits; needs, motives, goals, and values; self and identity; self-regulation; relationships and social life; psychological well-being and mental health; and physical and behavioral health.

In the initial phases of research planning, researchers from each school—with expertise in social, clinical, developmental, health, and educational psychology—submitted constructs and measures to be considered for inclusion in the longitudinal study, and final decisions were made by the research team at School D. As the project continued, the Research Committee described earlier was created to ensure more equitable representation of partner schools in such decisions. At each wave of data collection, the set of survey items included: (a) items related to the central focus of the project on student resilience and well-being; (b) up to 20 items requested by individual researchers connected to their relevant areas of expertise; (c) items addressed to time-specific topics such as navigating the transition to college, major declaration, the 2016 US presidential election, and post-college life; and (d) school-specific items addressed to particular areas of interest or concern for each school. The first three categories of items were administered at each of the four schools. Each assessment included 450–600 items, and took about an hour for students to complete online using the Qualtrics platform.

Each school sought and received approval from their Institutional Review Board (IRB) for the study, drawing from a template protocol prepared by project staff and approved by School D's IRB. Data collection, storage, and management activities were covered centrally under School D's protocol. For the first baseline assessment, parents received information about the project and were given the opportunity to ask questions of the researchers. Consistent with federal guidelines [45 Code of Federal Regulations 46.116(d)], a waiver of written parental consent procedure was approved by each institution's IRB, and parents of students who were under 18 were given the opportunity to opt their student out of the study by contacting the researchers. Subsequent assessments were open only to students who were 18 or older, and students responded to an informed consent form before deciding whether to participate in each assessment.

The study began with two complementary baseline assessments in which all members of the incoming class of full-time, first-time, first-year students at each school were invited to participate ($n = 3550$). The first baseline assessment opened over the summer before students began college, and the second opened when students arrived on campus at the beginning of their first year. Enrollment for incoming students at School A was not finalized until shortly before the beginning of the semester, so the two baseline assessments were administered back-to-back, beginning when students arrived on campus for orientation. Also, because School A was smaller and had higher rates of attrition over time as compared to the other three schools, data were collected from a second cohort of students. To ensure adequate

statistical power and precision, data from the two cohorts are combined for most analyses. Students at the four schools did not receive payment for their completion of the two baseline assessments. Instead, they received incentives such as t-shirts, small prizes (e.g., sporting equipment, dorm room essentials, sunglasses), small-denomination gift cards for local restaurants, and food.

Students who completed both baseline assessments ($n=1,500$) were invited to enroll in a longitudinal panel study ($n=953$), in which they would complete one-hour online assessments each semester across their four years in college.¹ Assessments were conducted during the Fall and Spring semesters of each academic year, and participation rates for each wave ranged from 55–90%. Panel members were paid \$15–\$20 for completing each assessment and received a bonus payment of \$20–\$25 for completing all assessments in a given year. In addition to payment for participation, the SRWBP team employed diverse methods to retain students in the panel and to encourage participation at each wave. Some examples include delivering care packages to students during exams, working with resident assistants as a point of contact for students to distribute payments and encourage participation, having free food available for students when they picked up study payments, and providing events (e.g., trivia night) and experiences (e.g., a hike at a local state park) available only to panel members.

Finally, at the end of the fourth year, the entire class was invited to participate in the study by responding to a 20- to 30-min end-of-college assessment ($n=1,732$). Incentives for participation varied across schools, but included gear with school logos such as sweatshirts and tumblers, or monetary payments. The primary goal of this end-of-college assessment was to collect data on key study variables from a larger and more representative sample to complement the larger volume of data from the smaller longitudinal panel sample and to secure modest longitudinal data on students who completed the baseline assessments but did not participate in the longitudinal study. An additional goal of the population-wide sampling at baseline and senior-year was the acquisition of large samples suitable for high-powered cross-sectional analyses and psychometric modeling. In addition to collecting self-report data, students gave permission for their survey responses to be linked to institutional data in the form of student records from sources like the Registrar and Admissions Offices. The consent to link to student records was included in the informed consent form for each assessment, and if students did not want to have their project data linked to selected student records they could choose not to participate. These administrative data provided crucial complementary information to the self-report data students provided in the surveys. At the end-of-college data collection, students at Schools C and D were also asked to sign a privacy rule authorization to release information from their Student Health and Counseling Center records. This authorization was presented at the very end of the study, and students could choose whether

¹ In addition to the assessments common to the four schools, School C administered summer surveys and assessed participants at four different time points in their first year based on practitioner feedback of “critical” time points for first-year students in the college transition, sorority/fraternity recruitment, and academic process.

or not they wanted to sign the authorization (approximately 60% of participants did so).

Although the primary focus of the project was the longitudinal study, funds were available to teams of researchers and students within and between schools to conduct “focused studies.” These studies allowed for targeted exploration of specific resilience-related processes and experiences that could not be addressed in the larger longitudinal study without risking participant burnout or that required objective data measurements. For example, one focused study examine the impact of failing to gain acceptance into one’s sorority or fraternity of choice on well-being immediately after rejection and three months later (Martin et al., 2018). Others examined predictors of the development of metabolic syndrome, coping with challenging friendship tasks, and structured interviews for clinically significant mental health problems. Focused studies allowed researchers, with significant input from practitioners, to take advantage of the infrastructure and collaborative relationship enabled by the project to explore specific resilience-related processes and experiences at a level of depth not possible in the longitudinal study.

Challenges and Lessons Learned

Develop a Transparent and Inclusive Decision-Making Process

One key challenge was developing a process for research decision-making across the four schools that was transparent and equitable, while also being timely. Moving from a decision-making process centralized at one school to one led by the Research Committee—which developed a transparent process for creating and finalizing content for each wave of data collection and codified authorship guidelines for presentations and publications with project data—did a great deal to facilitate trust and positive working relationships among research team members (see Henrick et al., 2017 for a discussion of the importance of trust and relationship quality in research–practice partnerships). For example, prior to each assessment the Research Committee solicited input from researchers about the content of the survey—new items or scales that might be included and which content could be eliminated or reduced to make room in the survey—and facilitated decision-making about final survey content. The Committee also coordinated timing of assessments and duration of the assessment period, taking into account breaks, opportunities associated with activities or programs, and other assessment activities at the schools. Although it took time to develop and refine these procedures, once they were in place the process for developing and finalizing content for each wave of data collection worked smoothly and efficiently. We recommend working toward consensus about decision-making processes and the parameters of the research collaboration early in projects like ours to establish trust among partners and facilitate a smooth and productive collaboration.

Give More Attention to Recruitment Than You Think Is Necessary

A second major challenge was recruitment and retention of participants into the longitudinal sample. The goal of the SRWBP team was to recruit as close to 100% of students as possible to complete baseline assessments for the study. In the end, about two-thirds of students at the four schools completed at least one baseline assessment; fewer than half completed both. Enrollment in the longitudinal sample comprised just over a quarter of enrolled students. Samples were generally representative of the populations from which they were drawn, though women were overrepresented, particularly in the longitudinal panel sample. Although smaller than would have been ideal, final sample sizes combined across the four schools were fairly large and were in the range that previous research suggests should not lead to biased estimates (Fosnacht et al., 2017). Still, small sample sizes limit the school-specific analyses that can be conducted with adequate precision and statistical power, especially when breaking findings down by demographic categories. The SRWBP team—both practitioners and researchers—invested considerable time, energy, and resources in planning and implementing multifaceted recruitment and retention strategies. The team's rate of success may be near the limit of what can be expected given the number of times students are asked to provide information about themselves by administrative offices and participate in academic research during the typical school year. How to maximize participation rates for studies like ours requires intention and creativity with input from students about survey length and format, timing, and incentives.

It Takes a Village

Finally, a key lesson learned from SRWBP effort was the importance of institutional buy-in and support to project success. Getting access to student and parent contact information, sharing information about the study in institutional communications to incoming students, integrating school-supported authentication into Qualtrics surveys, gaining access to campus facilities for recruitment activities, and working with resident assistants and residence coordinators to distribute payments and care packages were just some of the many ways in which institutional support made the project possible. Furthermore, it was important to develop relationships and coordinate efforts with school research and assessment units to ensure that SRWBP data collection efforts were not interfering with their work advancing institutional priorities. Likewise, working with stewards of administrative data sources to ensure that consent processes for the release of student data were consistent with institutional standards enabled the transfer, merging, and storage of administrative data in a secure manner consistent with their standards. The success of the longitudinal study hinged on the cooperation, support, and goodwill of institutional units from Information Technology (IT) to Housing to Admissions to the Registrar to Institutional Research. Teams embarking on similar efforts should plan for time and effort to develop working relationships with school partners beyond those on the immediate project team.

Data Privacy, Security, and Sharing

As the scope of the SRWBP expanded to include a four-year longitudinal study with the potential for incorporating student records data, it became evident that the result would be an exceptionally valuable data set likely to pay scholarly and practical dividends well beyond the end of the project period. It also became evident that the data set would be large, complex, and include sensitive information. The promise and the challenges of stewarding the data meant investing significant time and resources in data processing, archiving, and sharing. The overriding concerns were how to (a) make the data available to researchers on the team as soon as possible after they were collected in a suitable format and location, (b) ensure that data privacy and security were protected,² and (c) make the data available for continued use after the project period. Solutions to these concerns can be in tension, so the team developed a set of policies and procedures for working with the data that aimed to balance access and protection with an eye toward longevity.

A critical component of the data stewardship plan was early access to a protected data network (PDN) managed by IT staff at School D and also available to researchers at Schools A, B, and C through guest accounts. Features of the PDN that ensured secure storage of and access to project data included access only by encrypted connections, login with multifactor authentication, and daily encrypted backups. Within this computing context, researchers were able to work with potentially identifiable data, but with restrictions. Only software available on the PDN could be used for working with the data. Although some software needed by researchers and staff was available, an unexpected cost to the SRWBP was the purchase of additional software with licenses that allowed multiple users. A significant restriction was that, for all users except the data manager, no files or output produced within the PDN could be transferred or printed. The PDN provided ideal space for securing project data but a less-than-ideal computing environment for using the data for research.

To improve access to the data and software for manipulating and analyzing them, the team developed a protocol for moving deidentified data from the PDN to a secure, cloud-based computing environment. This environment retained encryption of file transfers and storage while allowing access to software on the computer used for access as well as printing and sharing of folders for collaborative work. Stripping the data sets of identifiers before moving them from the PDN to cloud storage reduces but does not eliminate the possibility that individual participants could be identified. Given the relatively small size of samples in the longitudinal study, especially samples from Schools A and B, the identity of individual participants could potentially be deduced from combinations of variables such as school, gender, first-generation status, and race/ethnicity (O'Rourke et al., 2006). To reduce the likelihood of deductive disclosure, data sets could only be moved from the PDN to cloud storage if values of demographic variables in the data set, alone or in combination,

² To allay any concerns participants might have about the confidential handling of sensitive information they provided (e.g., use of illicit substances, mental health status), the team secured a Certificate of Confidentiality from the National Institutes of Health (NIH Grants & Funding, n.d.).

included five or more participants. If the data manager determined that this criterion could not be met, demographic categories were aggregated or excluded from the data set (O'Rourke et al., 2006). With these stipulations, the cloud-based computing environment is where the project data have typically been analyzed.

A consideration related to data privacy that became apparent as the team began submitting papers for publication based on the data was how to handle the now common requirement that the data on which a paper is based are made available for public access. Following consultation with School D's IRB, the team adopted a set of rules for data sharing to meet journal requirements while protecting participants' privacy and limiting access to the full data set.

- The data set includes only the participants and variables used for analyses reported in the paper.
- The data set does not identify participants' school. If a variable corresponding to school is used in the analysis, in the shared data set it must be coded with arbitrary values.
- Even if used in the analyses, demographic variables with values that, in combination, would describe fewer than five participants are not included.
- Health information used for analyses reported in the paper is not included if it could lead to identification of participants.

Although data sets meeting these criteria would be shared, they would be accompanied by a statement that the data are made available for the purpose of reproducing the results or validating conclusions based on the results. Any analyses focused on questions not addressed in the paper would require permission from and collaboration with one of the SRWBP researchers. These criteria and stipulations balance the need to meet data sharing requirements while guarding participant privacy and team members' plans for using the data.

A strength of the SRWBP data is the merging of selected student-records data with the longitudinal survey data, with student permission. Because records data are explicitly identified, their access and management required specific privacy protections. Of particular concern was the means by which data merges were accomplished. For this work, the SRWBP enlisted an *honest broker* (Choi et al., 2015) in the research institute managing the PDN on which project data were stored at School D. The honest broker, who was not otherwise involved in the project, merged and deidentified all sensitive data, ensuring that even researchers working within the PDN could not identify individual participants from student records.

As the data set grew, with new measures and administrative data added throughout the four years of data collection, maintaining thorough, accurate, and usable documentation became a particular challenge. A data set that included all participants from whom data were collected on any occasion and all data from regular assessments plus grade point average pulled from student records comprised nearly 3,000 participants and 11,000 items from surveys and student records. Updated versions of the full data set were made available as data from each assessment or student-records source were added or corrections were made. Because a component of each assessment was school-specific, and access to student records varied across schools,

it was also necessary to have separate data sets for each school. These were made available to researchers in SPSS and SAS system formats with support for converting subsets of the data for analyses using other software. Importantly, with each new data set a detailed codebook was developed and made available alongside the data in the PDN or cloud-computing space. Higher-level codebooks that documented which measures were administered on which occasions at which schools also were developed. Finally, copies of the survey as administered were included alongside the data and codebooks. Central staff were vital for this essential work, which made an otherwise overwhelmingly large and complex data set usable for data queries and analyses for papers and presentations.

Challenges and Lessons Learned

Up-Front Investment in Data Curation Pays Off Down the Line

Although the SRWBP originated as a three-year project, its scope and duration were extended to include a four-year longitudinal study. The study required most of the effort of central staff members, who devoted substantial effort to acquiring, managing, and documenting the resultant data. The result is a remarkable data resource that continues to support research and decision making. The team faced many challenges and learned valuable lessons in stewarding the data, some of which continue as the data are made available beyond the funding period to team members for addressing the research questions that were at the heart of their motivation for devoting extensive time to the project and to the larger community of students and researchers who study college student resilience and well-being.

Don't Rely on Memory for Data Decisions—Document!

It became evident with the first assessments that scrupulous documentation would be essential if the data were to be useful for meeting the aims of the project. Evidence of that need increased as the data set grew in terms of assessments and additions of information from student records. With the study now complete, data analysis continuing, and support staff no longer in place, detailed documentation of the data is more important than ever. We strongly recommend a commitment to ongoing thorough documentation even for well-being data sets smaller or less complex than ours. Guidance on documenting data can be found online (Inter-university Consortium for Political and Social Research, [n.d.](#)), including software that generates detailed documentation during the process of data management (e.g., Arslan, [2019](#)).

Take Data Stewardship Seriously

Other lessons learned can be grouped under the general headings of *data stewardship*, defined as “mechanisms for responsibly acquiring, storing, safeguarding, and using data” (Rosenbaum, [2010](#), p. 1443), and *data governance* (Olavsrud, [2020](#)). Two keys to our early stewardship of the data were acquiring space on a protected

data network and enlisting the services of an honest broker. The PDN, though cumbersome for working with the data, provided a secure environment within which the data could be stored, manipulated, and merged with tight access controls. Working within the PDN, the honest broker implemented data merges that required using identifiable data in ways that typically would fail ethical review for individual researchers requesting IRB approval. The provision of guidelines, training, and certification for honest brokers is becoming more common (e.g., University of Pittsburgh, 2020) and essential for projects such as the SRWBP. It also bears mentioning that many aspects of data stewardship require review and approval from an IRB, which is likely to require technical details about the computing environment and procedures and invite input from IT specialists. We recommend the development of policies that are subjected to IRB review for sharing data with parties not on the research team.

Plan for Data Governance During and After Project Completion

Data governance is more forward-looking and is now the more salient concern. During the funded life of the project, decisions about who could access the data and how they could be used were made by the researchers, who also were involved in all uses of the data. With the project now completed, a challenge yet to be addressed is governance of the data going forward. A typical strategy is to create a steering committee charged with interacting with PDN staff when decisions related to data storage and security are required; authorizing level and duration of permissions to access and work with the data; and reviewing proposals to use the data (Olavsrud, 2020). The development of robust data stewardship and data governance policies is not standard practice for projects like the SRWBP, but it is clear that data sets such as ours will be underutilized, especially by the larger community of well-being researchers, without them.

General Discussion

The Student Resilience and Well-Being Project was a five-year partnership between researchers and practitioners at four private higher-education institutions. The primary aim of the foundation-funded project was to develop evidence-based policies, programs, and services in support of student resilience and well-being. The SRWBP project began with modest plans for collection of new data and a goal of new or reworked policies and programs within three years. The involvement of additional researchers and a recognition that more evidence guiding how best to improve student resilience and well-being was needed led to the development of an ambitious longitudinal study—the centerpiece of the project. The study brought both opportunities and challenges, the results of which are many lessons learned. Key components of the project, processes developed, and lessons learned are summarized in Table 2. In the remainder of this section, we reflect on broader concerns relevant for collaborative work between practitioners, researchers, and funders focused on improving the resilience and well-being of college students.

Table 2 Summary of key components, processes, and lessons learned

Component	Processes	Lessons Learned
Project scope	<ul style="list-style-type: none"> • prioritize full participation by researchers and practitioners at the participating schools through regular face-to-face meetings • collect new data from students on a broad array of potentially actionable factors that support or undermine resilience via an hour-long, online survey each semester • involve a small number of students in an intensive summer research experience using study data and focused on project priorities • develop mechanisms for communication to ensure a unified effort across schools and between practitioners and researchers • create representative committees to liaise with the funder, coordinate collaborative data collection, and promote exchange of ideas between practitioners and researchers • employ a full-time central research and administrative support staff managed by a project director that works in space dedicated to the project 	<ul style="list-style-type: none"> • start-up for projects involving researchers and practitioners at multiple schools requires considerable time and attention; planning spanned 18 months prior to receipt of funding and development of operating principles and procedures unfolded over most of the first two-years of the project • as researchers and practitioners at the participating schools work together, the scope of the project naturally changes to reflect the interests and experiences of team members in the context of the funders' priorities • a true partnership between researchers and practitioners at multiple schools requires careful attention to communication channels, representative decision-making, and coordination of time and attention to the project • having a full-time staff, a project director, and dedicated space gives projects an enduring identity recognized by the host school and the funder • as scope and focus evolve, the allocation of funds changes as well; a transparent mechanism for funding decisions that involves input from all schools and both researchers and practitioners is essential
Data collection	<ul style="list-style-type: none"> • assemble a survey that reflects the interests and priorities of 11 researchers, 14 practitioners, and the funder and can be completed online within one hour • obtain IRB approval at the four schools for a protocol that requests consent to complete the online survey, access academic records, and, for some schools, access health records • recruit the entering class at each school to complete two baseline surveys, one prior to matriculation and one soon thereafter • enroll at each school a subset of students who completed the baseline surveys to complete one survey per semester across four years • for the final survey in the fourth year, invite all students in the focal class to participate, yielding data at two time points for a large number of students not in the sample surveyed each semester • invite teams of researchers to run smaller, one-off studies focused on specific resilience-related processes and experiences 	<ul style="list-style-type: none"> • a committee of researchers from each school is essential for making final decisions about survey content; exchanging ideas for recruitment and retention of participants; and setting dates for survey administration • the allowance for both common survey content and content specific to schools and researchers within schools provides a balance between the broad interests of the project and interests specific to schools and researchers • the goal to get baseline data from full entering classes is untenable; getting full baseline data from less than half of eligible students and retaining students in the longitudinal survey subsample required substantial communication and incentives beyond money, including experiences, food, apparel, and outings • institutional buy-in is critical to the success of data collection, providing means of communicating with all students in a class, ensuring coordination of project data collection and school assessment activities, and supporting retention through direct contacts with students in residence halls and elsewhere on campuses

Table 2 (continued)

Component	Processes	Lessons Learned
Data use	<ul style="list-style-type: none"> • secure space on a protected data network (PDN) that meets IRB requirements for storing and analyzing sensitive data • develop a process for generating deidentified data sets that allow researchers to work with project data without the constraints of the PDN • provide extensive documentation suitable for navigating a data set comprising nearly 3,000 participants and 11,000 items from surveys and student records • develop a plan for making data on which published papers are based available as required by publishers • collaboratively develop authorship guidelines to ensure fairness and equity in data use for publications and presentations; to promote collaboration between researchers; to provide guidance for authorship inclusion and order; and to settle authorship disputes 	<ul style="list-style-type: none"> • the importance of personnel and plans for data curation cannot be overstated; very quickly the data set can become so large and complex that navigating it effectively is not possible without extensive documentation and access to technical support • develop a process for working with sensitive data in a manner that meets IRB requirements (e.g., honest broker to manage merges) and an accompanying process for moving deidentified data into computing space that can be readily accessed and analyzed by team member • update documentation with each new wave of data; correct and amend documentation when errors or omissions are discovered; ensure that documentation can stand alone for uses of the data after the funded project period has ended • develop a plan for data governance during the funded project period and especially after the funding period has ended
Translation	<ul style="list-style-type: none"> • quarterly face-to-face meetings of the full team hosted by the funder for early sharing of results with a focus on their potential relevance for policies and practices at the participating schools • produce an annual report that provides a high-level view of the data for each school in a format that could be shared with the funder and read by practitioners with an eye toward how the data might be used to inform their work • researchers and members of the central staff produce occasional one-page, nontechnical descriptions of key findings that could be actionable for use by practitioners 	<ul style="list-style-type: none"> • ensure that exchange of ideas runs in two directions: from researchers to practitioners and, importantly, from practitioners to researchers • be mindful of discipline- and profession-specific language that undermines clear and effective communication between researchers and practitioners • accept that findings from observational research rarely translate directly to policy or practice; instead, look for ways that findings can <i>inform</i> policy or practice by suggesting programs or activities that could be adjusted or eliminated to promote resilience or reduce the likelihood of undermining resilience

A feature of the SRWBP that is rare in research on student well-being was the full and equal partnership between researchers and practitioners from the beginning to the end of the project period (Henrick et al., 2017). The partnership yielded many benefits. Foremost among them was the quick transfer of knowledge between professionals charged with studying student resilience and well-being and professionals on the front lines of student services (Tseng, 2017). Typically, knowledge transfer between these groups in university communities is sporadic at best and most likely to flow from researchers to practitioners only after research findings have been formally presented in manuscripts or presentations. In the SRWBP, interactions between researchers and practitioners were frequent, often resulting in specific requests for new analyses that were provided within days. Researchers benefited from immediate access to experienced student affairs professionals with first-hand knowledge of the range of services, programs, and policies likely to influence students' psychological health. These ranged from housing to Greek life to counseling and wellness services. The result was practice informed by research and, importantly, research informed by practice—both within the day-to-day operation of the project.

A significant challenge of practitioners and researchers working in full partnership was translation. *Translation* in this context could refer to at least two aspects of knowledge transfer. One, about which much has been written, is the translation of research findings into specific practices and policies (Glasgow & Emmons, 2007). The other is more mundane but perhaps more fundamental: translating terminology used within each group so that communication is effective between the groups (e.g., Colusso et al., 2017). Frequent interactions between researchers and practitioners coupled with interactive presentations of research findings at quarterly meetings attended by the full project team provided ample opportunity for translating jargon typical of academic research papers and presentations and making more salient to everyone the relevance of certain processes and outcomes that researchers study. More challenging was the bi-directional research-to-practice-to-research translation required if a project like the SRWBP is to have direct impact. For researchers on the team, the frequent practitioner-to-researcher communication helped with the selection of constructs to measure, patterns in the data to examine, and hypotheses to test. The researcher-to-practitioner communication rarely provided practitioners with specific directives for program or policy changes; however, practitioners were frequently able to extract from researchers' presentations and the ensuing discussions ideas and themes that informed planning and decision making. Ideally patterns in the survey data would have been the basis for focused studies involving randomization to treatments that correspond to conditions subject to change through new policies or programs. Because of the demands on SRWBP staff, practitioners, and researchers given the expanded scope of the project, that important work was not feasible. As such, the SRWBP is best conceptualized as a critical first step in the evidence-based development and testing of potential policies and programs that support college student resilience and well-being.

An effort such as the SRWBP is not possible without funding that allows for flexibility in staffing, timeline, and scope. Early in the project period, flexibility was particularly important as the large, multi-site team developed a structure and plans

for operation that moved the increasingly complex project forward with input from team members and stakeholders at the four schools. In order to ensure that faculty researchers could give the project priority, funding was available to cover a portion of their effort, thereby protecting time needed to develop and implement the ambitious research agenda. Critical to all aspects of operation was a central staff, headquartered at one school but available for support to all team members. A staff of two to four full-time employees—a project director and three research-support staff—was funded by the foundation and located in a suite of offices provided by School D. This arrangement gave the project an identity that transcended the four cooperating schools while providing dedicated support for day-to-day operations and centralized communication and coordination with researchers and research-support staff at the schools. These essential qualities of the SRWBP were made possible by flexible funding and institutional support that allowed the project infrastructure to develop as the aims and scope of the project evolved.

Although the project period has ended, the data continue to be used and researchers continue working collaboratively on papers and presentations (e.g., Stutts et al., 2018; Stutts & Blomquist, 2021; Weeks & Strauman, 2019). A challenge that remains to be met is finding the resources necessary to maintain access to and security of the data. The team has been successful in securing an ongoing, no-cost agreement with the research institute that manages the protected data network on which the raw and processed data with identifiers are stored. Thus, the data are secure and accessible to researchers who were part of the SRWBP team. Absent, however, is the centralized support for navigating the secure environment, including moving output files or deidentified data from the PDN to more user-friendly computing environments. Also absent is a project director or designated committee of researchers to manage permissions, and documentation to accompany any data sets that include new student records data or emergent variables that might be of interest to future users of the data. Although these obstacles to data access and use might be overcome by researchers who worked on the project, such is not the case for the broader community of student resilience and well-being researchers or student affairs professionals. Efforts to secure the minimum infrastructure needed to allow for future use of the data are ongoing (e.g., School C has engaged a university statistician to conduct additional analyses requested by student affairs staff and administrators). With secondary data analysis increasingly used to generate new knowledge from extant data (Johnston, 2014), a cross-project mechanism for archiving the SRWBP data and other data sets focused on resilience and well-being in college students would be a wise investment.

The initiation of papers and presentations based on project data, and the appropriate acknowledgment of contributions to them, are governed by a set of authorship guidelines developed by the project team to ensure fairness and transparency.³ These guidelines acknowledge the individual intellectual contributions of each researcher and the collective ownership of the data by the research team. Under the guidelines, any researcher may initiate manuscripts that pertain to their area of scholarly

³ Apart from the stipulation noted earlier, that schools would not be formally compared, the funder imposed no limits or priorities with respect to publishing or presenting findings from the data.

expertise and that involve variables that they advocated during the design of the project. If a researcher initiates a paper or presentation that includes variables advocated by a another researcher, the initiating researcher is expected to specifically invite that researcher to collaborate or, minimally, to ensure that the researcher does not have plans to initiate a similar paper or presentation in the future. Beyond these matters of coordination, the guidelines address specific matters such as determining order of authorship (drawing from APA guidelines; <https://www.apa.org/research/responsible/publication>), acknowledgment of contributions that do not warrant authorship, and management of authorship disputes (see Frassl et al., 2018, for additional recommendations for managing multi-authored papers). The guidelines also address the appropriate use of corporate authorship, which acknowledges the contribution of all researchers to the project in papers or presentations about the project as a whole (e.g., this paper). Alongside a data governance policy, these authorship guidelines ensure that the SRWBP data are used in a coordinated, transparent manner that recognizes the unique intellectual contributions of each team member and encourages productivity and collaboration.

Conclusion

The SRWBP was an informative attempt to bring together researchers and practitioners to address growing concerns about the resilience and well-being of college students. The project was, in many respects, a success. A large team of researchers and practitioners worked together in such a way that practice informed research and research informed practice. A treasure trove of data were collected that have served, and will continue to serve, both academic researchers and student affairs professionals. Programs and priorities are in place at the four collaborating universities that were informed by knowledge gained from the project. Notably, several of these single-school efforts build on the collaborative relationships developed through the SRWBP partnership, and are supported by the same foundation. The significant investment of resources by the foundation, and the investment of time, effort, and expertise by the participating researchers and practitioners, resulted in the development of cross-school and within-school relationships that will continue going forward and provide a model of how an investment of resources can facilitate inter-school connections and practitioner-researcher partnerships.

Despite these considerable successes, the project brought many challenges, not all of which were fully met. The work of translation is hard and, though both researchers and practitioners on the project were cooperative and motivated to share ideas and needs, evidence of direct translation from specific research findings to specific practices is scant. Recruitment and retention of student participants proved challenging in ways that differed between universities, resulting in smaller, less representative samples than desired. Although stewardship of the data was managed effectively during the funded life of the project, it remains unclear how data stewardship and governance will be managed going forward. Yet, despite these limitations, the project has had significant impact on practices and policies relevant for student resilience and well-being at the four schools. The researchers, practitioners, students,

and funder involved in the project know from first-hand experience—the highlights of which we have shared in this paper—the promise and challenge of collaborative, evidence-based work on college student resilience and well-being.

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Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

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