



Building Capacity, Expanding Pathways: Accelerating the Growth of Credential Innovation

A Higher Education
Playbook

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BACKGROUND

Enrollment in certificates, badges, microcredentials, and other alternative credentials are top of the list of growth areas in higher education. [UPCEA has summarized enrollment trends](#) based on recent data from the [National Student Clearinghouse](#) and other sources, showing that post-pandemic growth in undergraduate education results from “an uptick in community college enrollments, transfer students, dual enrollment high school students and credit certificate completers. Contrary to the growth, first-time student enrollments have actually declined by 3.6%.¹

Further, UPCEA states

“many colleges and universities will need to re-examine not only their primary product, the degree; but how it serves the student of the future via the delivery of education, the credentials they offer, and how they engage prospects and enroll them into their processes.”²

Partnering with local, regional, and statewide businesses is key to develop and deliver noncredit and other microcredentials that are effectively directed at the workforce. To support institutions in these efforts, Walmart provided funding to UPCEA in July, 2023, for a one-year “proof of concept” project. This project aimed to accelerate college and university capacity to engage local and regional businesses in order to create and deliver noncredit, workforce credentials.³ Specifically, the project’s deliverables were to

- 1 Conduct national benchmarking research to establish the landscape for interest in higher education/business partnerships on such programming.

¹ <https://upcea.edu/migrating-the-headwinds-of-higher-education-how-upcea-partnered-research-helps-guide-the-way/>

² Ibid. In addition, Brower & Specht-Boardman (2022) outline and expand a similar view of higher ed’s future: <https://www.igi-global.com/book/new-models-higher-education-unbundled/286666>

³ *Building Capacity, Expanding Pathways: Accelerating the Growth of Credential Innovation in Higher Education* grant project, funded by Walmart June 30, 2023 through July 31, 2024.

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Bring together ten institutions of higher education and support their engagement with local/regional/statewide businesses. Support to each institution included custom market opportunity research, interviews with local businesses, and one-on-one “mini consultations” that provided individual assistance and encouragement. The product of these engagements were ten local business connections that generated an outline for at least one custom or semi-custom noncredit training program.

3

Create a “Playbook” of lessons learned and promising practices that would be made available to all institutions as they sought to accelerate their own abilities to produce noncredit microcredentials working with their local/regional/statewide businesses. This document is that Playbook.



THE CONSORTIUM OF COLLEGES AND UNIVERSITIES

Ten institutions were selected from about 40 who applied to participate in this year's project. These ten were selected because they represented different regions of the country, different institutional types (both public/private and Carnegie category), and varying sizes. One was an HBCU, one was a community college, and one represented its state system. All ten were selected because these institutions already demonstrated some success in their microcredential activity. We considered them microcredential "second stagers" (vs. start-ups) who were actively seeking ways to scale their successful microcredential programming. The ten institutions are listed below, with more information about them [here](#):

- ▶ [Kansas State University](#)
- ▶ [National University](#)
- ▶ [North Carolina A&T State University](#)
- ▶ [Schoolcraft College](#)
- ▶ [University of California, Davis](#)
- ▶ [University of Maine System](#)
- ▶ [University of North Texas](#)
- ▶ [Vanderbilt University](#)
- ▶ [Villanova University](#)
- ▶ [Virginia Commonwealth University](#)

LESSONS LEARNED AND PROMISING PRACTICES

National Benchmarking Research and Focus Groups

To better understand the landscape of microcredentials and the programmatic and business models that sustain them, in fall, 2023, UPCEA surveyed 100 individuals from 100 institutions, supplementing those quantitative results through six follow-up focus groups. The [full report can be found here](#), with major findings below:

- ▶ Institutions overwhelmingly embrace microcredentials, including noncredit and professional certificates, badges, bootcamps, and MOOCs. Institutions surveyed offered an average of 64 such microcredentials, though this number varied widely among the institutions.
- ▶ Still, a significant portion of institutions (20%) did not include microcredentials as a strategic priority, and only 69% said that senior leadership at their institution has embraced microcredentials.
- ▶ Although the process is inconsistent, most institutions (94%) used their existing faculty to create microcredentials, with many deconstructing existing for-credit courses to do so (72%). Many institutions cited employer engagement as a priority and a challenge to the development of microcredentials: Employers were strategic partners and consumers of the content, but often multiple parties were responsible on campus for employer outreach, which caused confusion.
- ▶ Institutions saw the value in creating microcredentials that are stackable towards degrees, with larger institutions, and those that have been offering microcredentials for longer periods of time, having a greater number of stackable microcredentials in their portfolios.
- ▶ Public research universities and two-year institutions have been offering microcredentials longer than other types of institutions.
- ▶ Very few institutions used the same business models for their microcredentials as for other noncredit offerings. Large institutions were least consistent in their use of business models. The range of business models varied significantly, with fee-based (75%) and revenue-share (65%) models predominating.
- ▶ 52% of institutions believed their business model was financially sustainable, but only 6% considered revenue, revenue sharing, and budget when setting price. Price varied considerably and showed very little consistency in how it was determined.

- ▶ Many institutions did not have a centralized office or system to keep track of microcredential activity across that institution. As a result, most (71%) were unable to share gross and net revenue figures holistically across their institution because those data were not easily collected. Additionally, few institutions were able to describe their entire portfolio of microcredential offerings.

From the benchmarking survey and focus groups, UPCEA offers the following actionable items:

- 1**
First, microcredentials should be part of the strategic program portfolio for all institutions of higher education. Additionally, institutions should resource their microcredential activities appropriately for sustainability and growth.
- 2**
Second, program ideation and development should routinely include employers and corporate partners. Employer and corporate partnerships create buy-in and can cultivate demand for the credentials as well as help market the offerings.
- 3**
Third, institutions should determine the right business model for their microcredential portfolios, and include the revenue from microcredentials as part of their portfolio to ensure sustainability. Further, they should have one tracking system for the entire portfolio of microcredential offerings, along with one system that keeps track of gross and net revenue.

As stated in the concluding paragraph of UPCEA’s December 2023 report, “The demands on higher education are continually evolving. As institutions compete for a decreasing number of traditional students, new audiences will be essential to long-term institutional health . . . Microcredentials provide additional value to existing students, facilitate engagement with other learners, offer diverse revenue streams for institutions, and have the opportunity to help employers fill existing skills gaps.”

Customized Market Opportunity Research and Interviews with Local Businesses

Between December, 2023 and February, 2024, UPCEA conducted custom research for each of the ten consortium institutions, identifying market opportunities and skills gaps for each institution’s regional workforce. This quantitative research was supplemented with 30 business opinion leader interviews who were local to each of the ten consortium institutions.

The custom research was informed by each institution's specific requests, institutional history, and existing relationships within their communities. Notably,

- ▶ Villanova and UNT asked for their custom research to explore opportunities they thought would fit their institutional identities. Villanova was interested in opportunities in the pharmaceutical industry, and UNT wanted to explore interests from the oil/gas industry. While neither Villanova nor UNT ended up pursuing programs in their "specialized" areas, the exploration into those areas was helpful to that institution.
- ▶ UC Davis and K-State have large medical centers in their communities, and each institution plays a role in being major employers in their region. Interestingly, while the custom research identified healthcare opportunities for both institutions, both ultimately pursued projects supporting the tech field (Davis in cybersecurity and K-State in aerospace).
- ▶ Because the University of Maine System represented all institutions within its state system, their influence over programming was different (by design) from the other nine consortium members. Their custom research necessarily took a statewide approach, and their project and project goal were likewise statewide and strategic for the entire system.
- ▶ National University is a large private nonprofit institution that is designed to focus on working adults and other nontraditional students. Because of their special focus, they were able to draw on significant operational structures and capacities that could be a model for other institutions.
- ▶ NC A&T is an HBCU, which shapes its mission and role in its community. This federal designation also provided regional access and prestige that was leveraged in their project.
- ▶ K-State is its state's land-grant university, and VCU is a public R1—both likewise shaping their missions, reputations, access, and regional opportunities.
- ▶ Schoolcraft is a community college, with a long history of connection to industry, which it leveraged to jumpstart partnership discussions for their project.
- ▶ Villanova and Vanderbilt are in large urban centers. They are not the only universities in their urban centers, which provided both opportunities and competition which was different from some of the other members of the consortium.

The [full summary of results from the custom research can be found here](#). Major findings are summarized below:

- ▶ First and foremost, all institutions found their custom research extremely helpful, either to directly identify market opportunities or to validate opportunities previously identified.
- ▶ Market opportunities varied considerably, even as some "top level" categories of employment gaps were identified across the nation:
 - ▶ Nursing was the top in-demand occupation for all regions researched. (Note that a nursing credential is not attainable through microcredentials.)

- ▶ The following five categories of credentials were identified across regions: Computer Science & Technology; Management & Leadership; Business & Finance; Sales; Healthcare Support.
- ▶ Regional differences in demand appeared within categories. For example, within the need for more nurses, one region needed nursing managers, while another needed specialization in infectious disease. Likewise, some regions needed leadership in retail while others needed leadership in technology.
- ▶ The following in-demand occupation-agnostic skills (sometimes called “soft skills” or “human skills”) were identified across all regions: communication, customer service, management, operations, sales, and leadership.
- ▶ Opinion leaders identified communication, customer service, professionalism, and adaptability as their top in-demand workforce skills.
- ▶ Artificial intelligence (AI) was neither mentioned by opinion leaders nor identified through the market opportunity research, though adaptability to emerging technologies was identified.
- ▶ Opinion leaders overwhelmingly valued microcredentials as a way to upskill/reskill their current employees and as an important signifier on a resumé, signaling that their presence indicated that a candidate was committed to self-improvement and pursuit of specialized skills.

Project Leadership Observations Throughout the Year

The following summarizes the lessons learned and promising practices learned through the year.

- ▶ It is tempting for institutions to try to engage in all important activities at once; that is, develop a suite of new programs that will all generate large enrollments and revenues, simultaneously badge them and build them all into credit-based programs, and build internal processes optimized to microcredential work. Instead, we implore institutions to do “first things first,” and to pursue this work in a strategic, stepwise manner.
- ▶ It is important for an institution to understand its own strengths and weaknesses. One tool for institutional self-awareness is [UPCEA’s Credential Maturity Index](#), which asks institutions to reflect on the [UPCEA Hallmarks of Excellence in Credential Innovation](#) which outline eight pillars of excellent practice for successful credential innovation.
- ▶ Campus outreach very often requires having critical conversations that may be difficult at times. Some examples of these discussions include standardizing instructor compensation; establishing a business model based on realistic enrollment growth and break-even projections; determinations of who will make program and administrative decisions; and how to sustain the additional efforts required as programs and enrollments grow. Transparency and honesty in these discussions are fundamental to the sustainability of this (and any) enterprise.
- ▶ It is important to shore up internal support within and across the institution, including identifying and cultivating “champions.” Some of these champions should be central decision-makers within an institution who can make decisions campuswide.

- ▶ Businesses should be engaged in credential ideation (in addition to program and curricular validation) to assure that the right programs are built. Additionally, UPCEA can be contracted to interview specific local/regional/statewide businesses on behalf of an institution, and as part of customized market research.
- ▶ Honest market research and saturation analyses are required for this work, unfettered by stakeholder biases, competition with national peers, and outright wishful thinking. It is easy to fall into the mindset of “build an excellent program and they will come.” But if there is one truism in this work, it’s that program demand cannot be manufactured.
- ▶ We recommend having another type of critical conversation early in the process, related to how revenue will be distributed. For most campuses, existing faculty and instructional staff will be the subject matter experts and the instructors for the microcredential. Hence, it is important not only to engage individual faculty/instructors, but to directly engage their departments and their schools/colleges. It is critical to establish trust by working with, and not around, existing institutional administrative structures as programs are developed and implemented, including revenue sharing with departments and schools/colleges. Again, transparency engenders trust, which engenders solid growth and sustainability.
- ▶ Other elements specific to sustainable business models include:
 - ▶ Building business models that accurately account for all expenses, including the fixed costs of existing technology, as well as staff and faculty salaries. When existing faculty and staff are utilized (from marketing to instructional design, to instruction itself) it is important to expense their time estimates or percent of workload into the program pro forma.
 - ▶ We encourage institutions to generate multi-year break-even enrollment/revenue projections for each program established. These projections became important “touchstones” for year-to-year assessment of program growth and health.
 - ▶ Those institutions creating comprehensive marketing plans, unique for each new program established, had the best success in their marketing efforts. A useful marketing tool is to generate “personas” to better understand the likely population who will be attracted to particular programs.
 - ▶ The use of formal and signed Memos of Understanding (MOUs) early in program development were important to clarify and solidify partner expectations. Additionally, MOUs were a valuable vehicle to discuss and ultimately settle the important program and budgetary topics above.
- ▶ We learned that an institution’s alumni were an underutilized resource to explore and establish community partnerships. A few consortium institutions, once they identified businesses they want to engage, reached out to alumni working in those businesses to personalize the contact. Since alumni relations is most often a separate unit in a university, a relationship with the institution’s Alumni Office became another important partnership to cultivate.

- ▶ It was important to define microcredentials, both within an institution and when talking to colleagues across the country. This became a topic of discussion through much of the year. Microcredentials are still new enough in the field that the nation has not settled on standard terminology. In the national benchmarking research, “alternative credentials” were defined as non-degree credentials, whether credit bearing or non-credit, that indicate an individual’s competencies and skills within a particular field. And beyond the research, project staff began using “microcredentials” as the umbrella term for this work. Establishing a clear set of definitions and taxonomy is an early priority.
- ▶ As stated above, the custom market opportunity research was valuable to all institutions. However, it was equally important for institutions to develop capacity to undertake competitive/saturation analyses. Ultimately, institutions must be able to identify their program’s niche within an often crowded market. UPCEA has developed its own capacity to help institutions do these kinds of customized “supply side” research and analysis.
- ▶ Almost to the institution, each reported streamlined program development and approval processes, many of which were internal to the office that oversees online and professional continuing education. As noncredit and microcredential programming continues to grow and prosper, and as it becomes an established revenue stream for the institution, it is not clear how long these streamlined processes will continue. But while they do enjoy these flexibilities, institutions should create policies to formalize them.
- ▶ Finally, and this is a broader lesson learned confirmed by this year’s project: those institutions thriving within the changing landscape of higher education continue to make it easy for people to unbundle and rebundle their education and training, allowing them to personalize and best meet their career and personal goals. In the area of microcredentials, “stackability” arose as a feature more than any other—designing credentials to stack towards other, larger credentials and as pathways towards credit-bearing degrees. While some of our consortium institutions were further along than others in this regard (for example, National University only builds programs from components that are stackable), all ten institutions embraced the intent to make all new programs stackable. UPCEA believes that stackability is critical to the success of both microcredentials and degree-granting programs. Students are demanding these options. In addition, allowing rebundling and stackability requires strong operations and advising, which are critical areas for institutions to cultivate.

Individual Approaches Required Individual Supports

Our ten consortium institutions were selected because they represented diversity on a variety of dimensions and because they were already successful in the microcredential space. We considered them “second stage” (vs. start-ups) who were actively seeking ways to scale their already-successful programming.

As a result, these institutions were familiar with the fundamentals in this work: the need for careful market opportunity research, the need to detail curricular content and establish connections across their university, the need to create MOUs and a clear business model and business case for each new program established, and the need to broker relationships with local businesses. That isn't to say each was equally expert across all fundamentals, but we did not have to convince any institution about the importance of these elements.

Accordingly, each institution needed different types of direct support—no one-size-fits-all tool or pursuit emerged—which leads to the final lesson learned in this section. To truly “move the needle” in higher ed's ability to offer microcredentials, to move beyond the subset of institutions already scaling in the microcredential space, institutions will need direct and individualized support to help them overcome their unique obstacles and take advantage of their unique opportunities. UPCEA is uniquely positioned to provide that support.

One design element of this year's grant that proved to be very successful were monthly 1:1 video meetings with each institution. These meetings were structured as mini-consultations, where the grant team provided whatever help we could based on the unique opportunities and challenges faced by each institution.

These meetings were each scheduled for an hour. An hour was a luxury, particularly post-pandemic when many video calls run an average of 30 minutes. While we did not belabor the time together (if meetings ended early, that was completely fine) we communicated clearly that if they wanted the full hour, that time was already set aside for them.

At the end of countless video 1:1s, as meetings were wrapping up, we were asked, “Do you have another minute or two for just one more question . . . ?” We'd then talk for another 20 minutes about some of the real challenges and concerns that were on that person's mind. These discussions allowed us to provide concrete solutions from our own experiences, connect one institution with another grappling with a similar issue, and connect an institution to our broader network of peers across the country who could provide other examples and a bit of advice. The structure of these hour-long 1:1s proved invaluable to the depth of productive relationships formed throughout this year's project.



TEN CASE STUDIES

The overarching goal for this project was to accelerate higher ed’s capacity to engage businesses and develop microcredentials. The institutions in our consortium were already successful, and poised to scale.

We have previously stated that there was not one size fits all road to success in this sector of the marketplace—our ten institutions succeeded in ten different ways. Accordingly, we offer these ten case studies to share important nuances along with their individual approaches.

▶ [**Kansas State University**](#)

(Submitted by Debbie Hagenmaier, Interim Director, Program Development and Management, Global Campus and Sarah Tortella, Director, Professional Education and Outreach)

▶ [**National University**](#)

(Submitted by Susan Zukowski, Vice President Professional and Continuing Education)

▶ [**North Carolina A&T State University**](#)

(Submitted by Tonya Amankwatia, Assistant Vice Provost, Distance Education and Extended Learning)

▶ [**Schoolcraft College**](#)

(Submitted by Jodie Beckley, Associate Dean, Occupational Programs)

▶ [**University of California, Davis**](#)

(Submitted by Alex Lowrie, Senior Director, Strategic Partnerships)

▶ [**University of Maine System**](#)

(Submitted by Claire Sullivan, Assistant Vice Chancellor for Innovation in Digital Badges and Micro-credentials)

▶ [**University of North Texas**](#)

(Submitted by Benjamin Brand, Senior Director, New Ventures, Digital Strategy and Innovation)

▶ **Vanderbilt University**

(Submitted by Amanda Harding, Director, Strategic Initiatives & Partnerships, Office of Learning Innovation)

▶ **Villanova University**

(Submitted by Sasha Haddoun, Director of Professional Education and Pete Watkins, Director of Teaching, Learning and Assessment)

▶ **Virginia Commonwealth University**

(Submitted by Tinsley Jones, Associate Director for Continuing Education Programming)

NEXT STEPS

Based on our collective experiences, here is what we believe is needed to continue to move the field forward, and to support institutions across the country as they engage businesses to develop workforce-related microcredentials.



What has become clear throughout this work is that institutions are at varying stages of progress with regard to their work in microcredentials. Moving from design and planning to implementation can be challenging for many. Looking ahead, UPCEA will work with the ten consortium institutions, and any interested UPCEA member institution, to scope a specific project to help them implement a key part of their plan.



Additionally, but not surprisingly, institutions struggle with university to business outreach to effectively engage employers and corporate partners in this work. UPCEA has built strength in this area to support institutions in their outreach to businesses.



All institutions in this project very much appreciated custom market research, either to highlight/fine-tune new program areas to pursue, or to confirm their own market research. UPCEA will continue to promote its ability to provide this service to members.



Similarly, all institutions appreciated the opportunity to use UPCEA's new Credential Maturity Index as a pre- and post-project self-assessment tool to help them identify areas of institutional strengths to lean into, and areas of need for which they can advocate for resources to address.



All institutions appreciated that we interviewed their local businesses. They were interested to know who was interviewed, and some appreciated direct introductions to these business leaders. This speaks to UPCEA's ability to identify specific potential business partners and broker relationships between them.



If there was a component of program development where institutions needed help, it was how to efficiently conduct competition/saturation analyses. Likewise, about half of the institutions needed business model support to fully expense their programs and generate projections. Providing these specific supports are areas that UPCEA will continue to promote in the microcredential space.



Some of our consortium members were part of offices that were more or less directly involved in their campus strategic plans. Some were led by a dean or director who reported directly to the provost, some were not. Some were service centers and some were revenue centers. Some were recognized as the center of microcredential activity and some were not. How the office responsible for microcredentials is situated clearly impacts its relationships across campuses. UPCEA believes that the office that oversees online and professional continuing education should be centrally organized and academically decentralized for its noncredit and microcredential work as well as for its for-credit programs.



Almost all consortium members described that their institutions were going through reorganizations that directly impacted them. This may reflect that higher education is living through an especially volatile time; the “new normal” is adapting to continual change.



Not surprisingly, “traditional” institutions, those who primarily serve residential undergraduate and graduate students, were most likely to approach their projects using legacy processes. That is, they approached their noncredit and microcredential work similar to how they approach for-credit programming: driven by academic departments and using business relationships to validate curriculum rather than in the ideation process. Likewise, these institutions were hamstrung by legacy campus operations tailored to their traditional audiences rather than flexible to educational products, new audiences, and new community partnerships. Those traditional institutions who were most successful were hardest to navigate. This is not to say that consortium members were unsuccessful, because they weren’t—each of the ten consortium institutions generated successful projects. But some of the consortium members had harder hills to climb.



Finally, and this is a thread throughout this playbook: there was no one-size-fits-all route to success in the microcredential space. Each consortium institution became successful in its own way. Institutions across the nation have their own opportunities and barriers. And while many tools and models exist in the field to support microcredential activity and innovation, how those tools and models are used is as unique as each institution. UPCEA will continue to fulfill its mission by supporting all institutions individually and directly, and through its rich network of convenings and relationships.

Appendix



Kansas State University

Submitted by Debbie Hagenmaier, Interim Director, Program Development and Management, Global Campus and Sarah Tortella, Director, Professional Education and Outreach

Project Summary

Kansas State University has offered alternative credentials in the form of microcredentials since 2022, including a pilot phase during academic year 2022-2023. K-State microcredentials can be offered for credit or noncredit and in multiple formats, including online, in-person and hybrid.

The initial maturity index survey for this project was submitted as K-State was beginning only its second year of offering microcredentials. K-State's strongest scores on the survey were in the areas of entrepreneurial initiative, faculty experience and digital technology. As the microcredential initiative matures, there is the expectation that self-reported scores will be higher for other maturity index indicators.

Senior leadership at K-State have embraced alternative credentials. For the most part, faculty have also embraced them, but some have limited understanding about microcredentials and competency- and skills-based learning. This is being addressed through virtual and in-person information sessions and the [K-State Microcredentials website](#).

Consortium Project Industry Partnership

For the Credential Innovation Consortium project, Kansas State University chose to partner with a leading aerospace and defense company to develop a technical writing noncredit microcredential. The potential audience for this industry partnership microcredential (partner employs more than 15,000 people worldwide) includes current employees seeking to advance

their careers, professionals in other aerospace/technical industries looking to join the partner company, and those transitioning out of the military.

The microcredential will be offered through the K-State Salina Aerospace and Technology campus. This project aligns with K-State Salina's mission to develop global leaders and foster innovation and talent development in aerospace, technology and specific needs of the region.

A K-State Salina communications faculty member and current industry professionals who are technical writers or designers will serve as instructors and subject matter experts for the technical writing microcredential.

Market research conducted by UPCEA for the Kansas workforce indicated the top areas of opportunity for microcredential offerings included computer science and technology, as well as manufacturing. Interviews with leading regional employers indicated skills gaps that included communication, mathematical proficiency and technical literacy. The aerospace industry partnership with K-State addresses these needs and gaps to a potential audience that reaches well beyond Kansas' borders. Skills gaps and training education identified for this partnership:

- ▶ Individuals employed by the partner company are often very technically proficient but lack the skill set to create/write technical manuals and other instructional guides.
- ▶ Technical writers need to enhance their skill set to be able to project manage and collaborate between computer designers and the technicians.

The corporate partner was an existing collaborator that provided insight into the company's inability to attract and retain professionals with a strong technical writing skill set.

Following market research, approval of the microcredential per K-State's approval policy, and fully developing the curriculum in summer and fall 2024, K-State hopes to launch the technical writing microcredential in January 2025.

Key University Collaborations

K-State's participation in this UPCEA consortium included engagement with and collaboration between two university professional education units that offer noncredit and alternative credential program development and services. These units reviewed market research findings and identified the project for development that best aligned with consortium requirements as well [Next-Gen K-State strategic plan](#) imperatives.

- ▶ **K-State Global Campus** partners with faculty interested in offering noncredit professional development opportunities, including microcredentials. Noncredit programs and courses can be offered online, in person or in hybrid formats, depending on program and learner needs. Professionals in the Program Development and Management unit provide guidance in course development, as well as gaining access to and setting up course shells in the Canvas learning management system for online noncredit opportunities. Global Campus also manages noncredit registration and, for online courses and programs, learner access to Canvas. Global Campus is the university unit authorized to issue continuing education hours from

Kansas State University in the form of contact hours. It is also the unit that administers K-State microcredentials in the form of digital badges.

- ▶ **K-State Salina Aerospace and Technology Campus** offers immersive training, continuing education, and professional development programs in a variety of fields to meet industry needs. These innovative educational programs extend the campus's academic offerings beyond the boundaries of the university and support individuals and organizations in gaining applicable skills to meet the ever-changing demands of the current and future professional landscape.

The following section provides a brief summary of K-State Microcredentials.

K-State Microcredentials Initiative

As the nation's first operational land-grant university, Kansas State University is uniquely positioned to meet today's challenges of developing and enhancing human skills and capabilities through education, learning and meaningful work. While delivering curriculum in the traditional form of courses leading to degrees has a long history at K-State, the need to develop a coherent microcredentialing infrastructure is essential to K-State's future.

In 2021 a university-wide task force was formed, spearheaded by Global Campus, to submit a K-State Strategic Investment Fund proposal to fund a microcredentials initiative. The focus of the initiative was to purchase a digital credentialing system and develop a comprehensive microcredentialing infrastructure as part of the lifelong learning ecosystem at K-State with interconnected core components (e.g., learners, curriculum, definitions, credentials, technology, processes, policies and finances) needed for a robust lifelong learning ecosystem. Purchase of the digital credentialing system would align with existing university technologies and be available for use by the entire institution for awarding and documenting the accomplishment of competencies or skills.

The grant was awarded in early 2022. Global Campus was joined by faculty and staff representing campuses, colleges, academic units, departments and service units across the university to establish working groups tasked with ushering this initiative to completion. Working groups focused on policy development (e.g., proposals, vetting, approvals, etc.); technology (i.e., procurement and implementation); processes (e.g., intake, registration, documentation of metadata, learning management system, learner records, etc.), financial models (e.g., noncredit fees, credit tuition, administrative fees, etc.), internal communications with K-State faculty and staff; branding for university-approved badge designs for credit and noncredit microcredentials; and external communications to develop a website that is the central repository for microcredential programming content and enrollment. This university-wide collaboration allowed K-State to onboard microcredentials within 10 months. Keys to this rapid success included a strong foundation of research prior to receiving FY22 Strategic Investment Funds for the initiative, bringing strategic players from the university to the table, drafting experts from other institutions to share best practices and involving essential university leadership.

Pilot Year and Beyond

K-State Faculty Senate approved a temporary approval policy for the pilot year, which followed the 2022–2023 academic year. Eight fall, 16 spring and 16 summer microcredentials were offered and more than 300 digital badges were awarded during the pilot year. The majority of badges earned were for noncredit microcredentials, the largest being “Lean for Leaders,” an industry partnership offering between K-State’s College of Business Administration and a leading health insurance provider in Kansas. Additionally, K-State Research and Extension (KSRE) offered four microcredentials during the pilot year. The microcredentials initiative has great potential for KSRE to engage learners by providing opportunities to expand their knowledge plus gain a microcredential, if desired. Microcredentials provide Extension an opportunity to capitalize on K-State’s land-grant mission, research and educational network; to meet business and industry consumer need; and to offer tailored training through microcredentials.

In April 2023, Faculty Senate approved a policy that establishes the [approval process beyond the pilot phase](#).

Coinciding with the conclusion of the year-long pilot program, K-State launched a new [K-State Microcredentials website](#). The site includes a directory of microcredential opportunities, resources for faculty and staff to develop a microcredential, and information explaining the purpose and value of microcredentials. Designed to be streamlined and easy to navigate, the site follows the same user-focused and mobile-first best practices as other K-State websites.

During the 2023–2024 academic year, 37 microcredentials were offered and 310 digital badges have been awarded as of the end of the spring semester.

One K-State: Next Gen K-State and Alternative Credentials

The [Next-Gen K-State strategic plan](#), unveiled in September 2023, calls on the university to innovate and deliver excellent academic programs aligned with what learners want and need, and to create more integrated, less-siloed environments to promote operational excellence, efficiencies, collaboration and optimized allocation and use of resources. Success will require a shared focus on academic innovation across the university and investment in the broader academic enterprise.

The new operational framework focuses on innovation that realigns and integrates functions and resources currently within Global Campus and the Provost Office. Global Campus teams, resources, and functions will be reassigned across the Office of the Provost to integrate and amplify work in the areas of market analysis, marketing, recruitment, student services, and academic program development and instructional design. This restructuring will also lead to enhanced collaboration between the K-State units that offer and noncredit alternative credential programming.

Imperative 1 of Next-Gen K-State calls for total enrollment growth of 30,000 by 2030. This goal includes learners across all K-State campuses and formats by steadily increasing degree-seeking and credit-bearing student populations and expanding alternative credential-seeking learner populations. The enrollment goal includes 5,000 to 7,000 alternative credential-seeking learners, including those completing continuing education courses, earning microcredentials, completing training that leads toward industry credentials at their worksites, and pursuing upskilling opportunities to learners seeking skills that can broaden and enhance their value to the workplace. The enrollment targets set for learning populations that will drive this growth are intentionally framed as ranges to enable the university to be nimble and responsive to real-time needs as demand shifts or grows with one or multiple learner populations.

National University

Submitted by Susan Zukowski, Vice President Professional and Continuing Education

National University (NU) is a Veteran-founded non-profit university with a history of innovation and high connectivity to the workforce. NU was founded in 1971 by former Learning and Development Director and U.S. Navy Captain Dr. David Chigos who recognized the challenges of military personnel going on deployment and losing their progress toward degrees. NU was founded on an innovative model of 4-week academic courses, allowing students to step in and out of courses as needed, without losing progress when they are deployed. Innovation and transformation have been part of our history and are embedded in our vision “to be an inclusive and innovative university serving lifelong learners who contribute to the positive transformation of society.” NU serves more than 130,000 learners each year with more than 80,000 of those learners engaged in workforce and professional development courses/programs.

The Workforce Community Education’s (WCE) Professional and Continuing Education (PACE) team leads the university’s efforts on customized education, professional development and continuing education. With a five-year history creating customized education and training programs for the workforce, some of which have earned design awards, we have worked to hone our processes to allow for relatively rapid development with a positive return on investment (ROI) on every program within 12 months. Inherent in our work is focusing on the creation of professional development programs that a) align with industry recognized and valued certification, b) stack for academic credit, c) have high workforce demand, and d) can demonstrate a projected 12-month ROI. We develop, on average, 35 to 40 new offerings per year and accomplish this through application of product lifecycle management that involve six high level stages: 1) opportunity identification and assessment, 2) program planning, 3) program development and launch planning, 4) quality review and course mastering, 5) program launch, and 6) program assessment and performance analysis.

Product Lifecycle Management Stages

For this project, we focused on the creation of a Registered Behavioral Technician (RBT) program in collaboration with several of our industry

Opportunity
Identification
& Assessment

Program
Planning

Program
Development
& Launch
Planning

Quality Review
& Course
Mastering

Program
Launch

Program
Assessment &
Performance
Analysis

partners and academic faculty. The RBT program is a required entry level licensure for those working applied behavioral analysis, engaging in direct client care, often working with kids with Autism. Our process started with the Opportunity Identification and Assessment stage and the completion of a program intake form to provide our product review committee a sense of the scope and nature of the program. This is a relatively quick assessment to see if minimum requirements will be met, including:

- ▶ Workforce demand
- ▶ Industry partner need
- ▶ Ability to stack for academic credit
- ▶ Estimated enrollment
- ▶ Alignment with organization mission, vision, and values

The program intake was then presented to our Product Review Committee, which meets each week to review PACE related programs. This is a stage gate step to give a “go, no-go, or not now” decision to proceed with development. The team made up of PACE leadership, product managers, program managers, instructional designers, and marketing approved moving forward into program planning for the RBT program.

During program planning the product manager deep dived into the opportunity completing our comprehensive New Program Information Sheet, Competitive Course Research, Level of Effort Estimation, and Budget Projections to assess the viability of developing the program. The product manager doesn't do this work in a silo, rather they collaborate with faculty, subject matter experts, and industry partners to explore the need, scope out the program, and create the recommendation for the program. This work included exploring industry and learner demand. Industry demand was assessed using Lightcast labor market data, Bureau Labor Statistics employment projections and salary data, and Behavioral Analyst Certification Board (BACB) data and insights. Learner demand was assessed through analysis of Google Trends, Google AdWords, and IPEDS conferral data. Additionally, we conducted a comprehensive competitive market scan to identify comparable programs looking at alignment to industry requirements, program length, core skills and competencies, and price analysis. This comprehensive analysis allowed for the development of a business case to recommend proceeding with the program development, which was approved by the Product Review Committee.

After approval to proceed with development, the product manager spearheaded the collaboration and project management to bring the product to market. This included working with instructional designers, subject matter experts, and marketing. At the time of this writing (mid June, 2024), the program is in the final stages of development with planned go-to-market launch in approximately 6 weeks (end July, 2024). This program was delayed slightly due to faculty/subject matter expert availability. But otherwise, it has remained on track and without challenges. Our next step will be to submit the program for endorsement by the BACB, which requires a review and accreditation process for the program. Our expectation is that this program will help shift how learners are able to sit for their required test to become RBTs and will be a significant value add to our industry partners and their new hires for these roles.



**NORTH CAROLINA
AGRICULTURAL AND TECHNICAL
STATE UNIVERSITY**

North Carolina A&T State University

Submitted by Tonya Amankwatia, Assistant Vice Provost, Distance Education and Extended Learning

Engaging Employers in the Co-Design of Micro-Credentials

The Extended Campus at North Carolina Agricultural and Technical State University (NCAT) began its journey into the development of micro-credentials with a strategic investment in infrastructure and a commitment to innovation in alternative pathways to credentials. As an HBCU and land-grant university, we are dedicated to inclusive excellence and employer engagement. This narrative details our co-development discovery and planning activities over the past three months, highlighting the strategies, partnerships, and lessons learned that have shaped our approach. We aim to inspire other institutions in the U.S. to replicate and modify our model to engage employers in the co-design of micro-credentials.

Setting the Stage: The Extended Campus at NCAT

When we embarked on this journey, NCAT's Extended Campus was in a phase of significant transformation. Leveraging Lightcast data to identify skills gaps and inform our curriculum design, we were simultaneously onboarding a new registration module and had recently acquired Credly for digital credentialing and ODEM.io for a blockchain-based marketplace. Despite these advancements, our resources were limited, with only 1.5 full-time equivalent (FTE) staff dedicated to continuing and professional education.

To ensure our initiatives aligned with the university's strategic plan and gained executive-level support, we defined key terms, formed a dedicated committee, and clarified our role in workforce training. Faculty and staff, including Salil Desai, Ph.D., Rosalind Dale, Ed.D., and Ms. Pat White, were invited to participate in UPCEA webinars and conferences to understand the opportunities and challenges in the co-design of micro-credentials. Our commitment to inclusive excellence guided these efforts, ensuring our programs addressed the needs of a diverse population and supported our land-grant mission to serve the educational and economic needs of our community.

Initial Partnerships for Pilot Program

A key milestone in our journey was the partnership with Carter Bank & Trust, which served as our pilot program. Carter Bank & Trust, headquartered in Martinsville, Virginia, with branches throughout Virginia and North Carolina, is a community-focused institution with over \$4.4 billion in assets. Celebrating its 50th anniversary, the bank's website states its commitment to exceptional

banking services and community engagement. This initiative brought together faculty and leadership from the Willie A. Deese College of Business and Economics, including Dr. Lisa A. Owens Jackson, Interim Dean, Dr. Collins E. Okafor, Associate Professor of Finance, and Professor Antwon Foreman, Director of the Blackstone Entrepreneurship Launchpad and Lead Director of Blackstone HBCU Programs. They played a pivotal role in developing aligned curriculum. We engaged in extensive data analysis using Lightcast and confirmatory conversations, which revealed two primary audiences for our micro-credentials: potential employees and current employees.

Excel for Storytellers: The Co-Design Process

The co-design process was informed by feedback from Carter Bank, which helped refine our approach to better meet the needs of the banking sector. Paul Carney, EVP and Chief Human Resources Officer at Carter Bank, emphasized the broad applicability of our curriculum, stating, “The micro-credentialing program is designed to prepare students and employees for various finance-related careers, including banking, investment banking, and insurance. It’s about developing a core business knowledge base and accounting skills to make participants attractive to employers.” This engagement also connected us to potential partners like the North Carolina Bankers Association.

Although the City of Greensboro is not part of the initial launch, their interest in our curriculum highlights the potential for future collaboration to apply this curriculum to their needs. We introduced these stakeholders to ODEM.io, gaining their buy-in and laying the groundwork for future public-private partnerships. Additionally, we collaborated with Symbiosis, a design partner interested in competency-based training, who offered low-cost course design services.

Curriculum Development

Our curriculum development plan, as detailed in the A&T Skills Academy Playbook, involved several key steps:

- ▶ **Needs Assessment and Planning:** We identified target audiences, defined learning outcomes, and reviewed job market data to align our curriculum with industry requirements.
- ▶ **Timeline and Partner Engagement Plan:** Faculty and Extended Campus developed a timeline for developing the first micro-learning course, “Excel for Storytellers: Visualizing Financial Insights for Banking,” was designed to meet the specific needs identified through our partnership with Carter Bank.
- ▶ **Content Development:** Help instructional designers support faculty to utilize Credential Engine’s open competency database and employer-provided job descriptions to develop appropriate 4–6 week in-person design and 10 hour asynchronous online design. A Faculty developed a PowerPoint with module content, instructional materials, incorporating competency-based activities and assessments to ensure practical application.
- ▶ **Pilot Testing and Feedback Plan:** A pilot program and evaluation planned with the commitment from the partner to support the implementation.

Surprises, Challenges, and Lessons Learned

Throughout the development process, several surprises and challenges emerged. Dr. Lisa A. Owens Jackson noted, “We were surprised by how many people are still not proficient with Excel, much less the ability to tell a story from data.” Balancing industry needs with educational goals also proved challenging, requiring us to tailor our approach based on detailed audience data. Dr. Okafor outlined our discovery of unexpected synergies between different teams, leading to innovative solutions. For example, the contributions and collaboration between our interdisciplinary team of experts (finance, accounting, and entrepreneurship) resulted in the development of a more robust data analysis learning module that better addresses the needs of both students and employees.

Strategy Insights for Success

- ▶ **Interdisciplinary Collaboration:** Engaging faculty with both theoretical and practical expertise enriched the curriculum design process.
- ▶ **Data-Driven Design:** Surveying employees to understand skills gaps ensured that our training programs were relevant and effective.
- ▶ **Flexibility in Delivery:** Designing dual-mode programs and leveraging existing resources helped accommodate diverse learning styles and technical skill levels.

To ensure the success of micro-credentials, NCAT established several best practices:

- ▶ **Faculty Involvement:** Include faculty with both technical and practical experience to provide a comprehensive understanding of industry needs.
- ▶ **Participant Data Collection:** Gather data from potential program participants to tailor training to their specific needs.
- ▶ **Leveraging Existing Resources:** Utilize established quality review and master course SharePoint resources for online programs as well as training materials to create a common technical skill baseline before introducing advanced topics.
- ▶ **Adaptive Program Design:** Design programs that are flexible and responsive to the learning styles and needs of all participants.
- ▶ **The Workplace Skills and Lifelong Learning Strategy Committee:** Form a representative committee to evaluate partnership opportunities, collaborate with faculty, and engage with learners and industry partners to maximize the impact of NCAT’s micro-credentialing initiatives.

Feedback and Future Directions

Feedback from Carter Bank underscored the importance of practical business knowledge and skills in the workforce. Paul Carney highlighted the need for training that goes beyond technical skills, emphasizing the value of business acumen and data literacy. Sharing our curriculum plan with the

City of Greensboro confirmed the broader applicability of our approach, illustrating how micro-learning strategies could supplement in-house offerings and support professional development.

As we move forward, we plan to assess the impact of our micro-credential programs, continue developing partnerships, and explore new opportunities for public-private collaboration. Sharing our curriculum outline with other community and business partners has already inspired modifications and new initiatives, reinforcing the value of collaborative design in micro-credential development.



Schoolcraft College

Submitted by Jodie Beckley, Associate Dean, Occupational Programs

Introduction

Community colleges focus on access, completion, and transition into the labor market or transfer to four-year institutions. They serve local industries and the current workforce by providing re-training and upskilling to ensure continued upward mobility. In today's economy, companies often express frustration with the lack of qualified talent available to ensure economic viability and growth. Through collaborative partnerships, community colleges and local industries can develop responsive educational programs that produce graduates with the full spectrum of skills required to fill regional workforce needs.

This case study highlights the steps taken by one mid-western community college to develop a new partnership with a mid-size company to provide training/education that meets their needs and fills gaps in skill deficiencies among their employees. It describes the selected company, their identified training needs, and progress to date in building the relationship. A projected timeline is also included to forecast expected actions over the next six-seven months.

Identifying a Market Need

Along with researching labor market data, UPCEA conducted in-depth interviews with professionals from leading employers in southeast Michigan to better understand the educational needs of the regional workforce. After analyzing the data, UPCEA recommended that Schoolcraft College focus its efforts on alternative credentials in healthcare support, management and leadership, sales and merchandising, or trade skills for in-demand occupations such as automotive manufacturing.

Roush Industries

In fall of 2023, Schoolcraft hosted an event for the Society of Manufacturing Engineers and invited local businesses focused on manufacturing. During the meeting I struck up a conversation with Paul Bowser, VP of Prototype Services, at Roush Industries. We talked about the need to focus on skills rather than degrees in higher education to better prepare students for the labor market. He mentioned that they were working with Monroe County Community College (MCCC) to provide some of their employee training needs. However, they would be interested in working with

Schoolcraft College as it is in Wayne County, where Roush is located. When it came time to identify a potential company for this project, I thought of Paul and reached out to request a meeting. This began a series of conversations with Paul and Lee Smith, Senior Learning & Development Specialist for Roush, as we began to explore partnership opportunities.

Roush Industries specializes in innovative engineering solutions across multiple sectors including mobility; aerospace engineering, prototyping, and testing; defense design & development; theme park vehicles, attractions, & animated figures; and sustainable energy solutions. Roush was founded in 1976, is based in Livonia, Michigan and has facilities throughout the United States.

In Livonia, Roush Industries is in its second year of implementing its own apprenticeship program. They currently have 13 employees in the program who work at Roush and participate in Related Technical Instruction (RTI), a critical component of registered apprenticeships as it supplements on-the-job training with coursework that is designed to fill in knowledge gaps that could be missed without it. RTI is provided on site Tuesday and Thursday afternoons from 12:00–4:00 pm and courses are taught by an adjunct faculty member from MCCC as well as Lee Smith. To date the courses have been designed to be one–two hours of lecture in the classroom followed by two hours at lab stations, which Roush built specifically for this training model. It is a four-year program, and students complete one class per semester.

While the retention rate is high, Roush describes their apprenticeship implementation as “building the plane while flying it” and are working to map out a four-year curriculum that can be sustainably replicated as they add new cohorts in subsequent years. According to Lee, at its core, the training content must translate to the floor level. His biggest concern is that they provide a diversity of educational training. He stated, as a Roush employee, “you either move up or move out” and they want to be sure they are equipping employees for a career with Roush as well as other companies in the industry, should employees not remain at Roush.

Building a Collaborative Partnership

During the first two meetings, Lee described their employee training needs related to all facets of fabrication—CNC Machining, Metal Forming, Welding, GD&T, and Blueprint Reading to name a few. He also expressed interest in assistance with their automotive electronics training as they want a refreshed curriculum that will be relevant for two more years—when electric vehicles really take off once the required infrastructure is in place throughout the country.

We invited Lee and Paul to tour Schoolcraft College’s Manufacturing and Engineering Center to further highlight our educational/training programs. They were especially impressed with our welding lab as well as the robotics classrooms used in our mechatronics program. At the conclusion of the tour, Paul and Lee prioritized the mathematics skills required on the shop floor, for tasks such as using a lathe machine, as the biggest knowledge gap of their apprentices. They also spoke about potential opportunities to partner with Schoolcraft to develop curriculum and training related to electric vehicles.

Education/Training Solutions

Because Roush is looking for an out-of-the box mathematics training for their apprentices this fall, we provided information about our non-credit Shop Arithmetic course, which is a review of basic arithmetic, including whole numbers, fractions, decimals, signed numbers, grouping symbols, square root, ratio and proportion, flat and round tapers simple and complex gear ratios. We also presented a for-credit Technical Mathematics course, which provides the practical mathematics skills needed in a wide variety of occupational programs. The course covers measurement, basic algebra, geometry, right triangle trigonometry, graphing, and statistics. They are in the process of reviewing these two courses to determine if one or some combination of the two will meet their needs.

Roush is also looking for training around specific fabrication processes such as metal forming. We explained that our Manufacturing 102—Basic Machining Processes covers fundamental manufacturing processes and exposes students to manual machine operator skills, with particular emphasis on machines, tools, and measurements to produce an end product. Finally, we provided Roush with areas of focus for electric vehicle curriculum development at Schoolcraft including EV Mobility Introduction; EV High Voltage Battery EV Propulsion System and Components; EV Thermal Management; Connectivity and Software; and EV Charging.

Roush Industries is currently using funds received through the Michigan New Jobs Training Program (MNJTP) to pay for training through Monroe County Community College. Designed as an economic development tool, the MNJTP authorizes community colleges to collaborate with employers that are creating new jobs and/or expanding operations in Michigan to receive diverted income tax withholding for the purpose of funding a variety of training and employee development needs. To include training from Schoolcraft College, Roush must amend their application and resubmit it to the Michigan Department of Education for approval. Once the course to be provided by Schoolcraft is agreed upon, a fee will be calculated to cover the instructor and materials costs and then included in the amended application. Upon approval by the DOE, the course will be provided, and Schoolcraft will be paid from MNJTP funds.

Timeline

June–August 2024

- ▶ Schoolcraft faculty and staff will tour several fabrication areas at Roush Industries in June.
- ▶ Follow-up meetings with Roush Industries and Schoolcraft will occur in July and August to determine the course(s) for development and delivery.
- ▶ Roush Industries will amend their MNJTP application and submit it to the MI-DOE by the end of August 2024.

September 2024

- ▶ Once Roush Industries receives approval from the MI-DOE, an instructional designer will be contracted to create the course(s).
- ▶ The instructor for the course(s) will be hired.
- ▶ For 2024–25, Schoolcraft will enter into an agreement with Anthology for their digital badge product “Milestone”. In addition to faculty professional development, our plans are to use this product to develop a digital credential for non-credit programming and we plan to start with this course. The credential will be developed in conjunction with finalizing the course learning objectives and measurable outcomes.

October–December 2024

- ▶ Schoolcraft will deliver the course.
- ▶ Roush Industries will assess their employees’ ability to apply the acquired competencies from the course to their jobs and provide their assessment feedback to Schoolcraft.
- ▶ Schoolcraft will award digital badges to employees who complete course requirements.

Conclusion

Developing effective strategic engagement with local companies requires the community college to position itself as a problem-solving partner rather than just a resource for training and education. With this approach, Schoolcraft College is building a new relationship with Roush Industries to effectively deliver the talent they need. The most significant takeaway to date is the amount of time needed to schedule and hold ongoing discussions during the exploratory stage of the relationship in order to move forward. While we had hoped to be further along in the relationship and designing the course by this point, we understand that trust is built over time. We are confident that continued meetings this summer will help to resolve assumptions and clarify any remaining misconceptions by either organization. We are excited to continue the next leg of this journey and positively impact social mobility in Southeast Michigan.

UC DAVIS

University of California, Davis

Submitted by Alex Lowrie, Senior Director, Strategic Partnerships

Development of a Micro Credential in Secure Programming for the software development industry

This report describes methods and lessons learned for development of a micro-credential from the “Strengthening Workforce Education: Excellence in Programming Securely” (SWEEPS) program. SWEEPS is an educational initiative spearheaded by a coalition of universities including: UC Davis (as principal), Worcester Polytechnic Institute (WPI), and the University of Maryland, Baltimore County (UMBC) and is supported by the National Security Agency (NSA) National Centers of Academic Excellence in Cybersecurity (NCAE-C) under Grant NCAE-C-003-2023 “Cybersecurity Workforce Development”. The collaborative effort aims to address the growing need for increased levels of cybersecurity skills in the technology sector. This report focuses on UC Davis’ experience in the development of a micro-credential within the program.

The Who, What, and Why of This Program

Issues in software have created vulnerabilities in corporate and institutional technology infrastructures. As examples, in the commercial world, we are reminded daily of data breaches leading to the exposure of tens of billions of sensitive data records, while malware designed to target programmable ladder controllers and industrial control systems have been used to successfully attack infrastructure such as Indian and Ukrainian power stations¹. A secure coding skill set widely available in the technology workforce would help address these vulnerabilities per Professor Matt Bishop² from UC Davis and interviews with cyber security experts from KPMG and Infineon. A course within the program, titled “Developing Secure and Robust Code,” integrates industry expertise and input from StrongAuth, Inc. (dba StongKey) so that the curriculum meets academic standards and aligns with current industry practices. This partnership is driving a substantial effort to increase the number of professionals in the workforce well-equipped to tackle emerging security challenges in software development.

¹ “Cyber Attacks on the Power Grid”, IronNet Threat Research. <https://www.ironnet.com/blog/cyber-attacks-on-the-power-grid>. Accessed in April, 2023.

² Matt Bishop, 2002. Computer Security: Art and Science, Section 20.1.2.2.

The “Developing Secure and Robust Code” course is designed for software development professionals who are starting or are in the early stages of their career. It will help them differentiate themselves in an increasingly competitive software development job marketplace by providing them with the skills to develop robust programs and participate in teams that consider security while creating software. It will be delivered entirely online through asynchronous instruction, providing flexibility for participants to engage with the material at their own pace and schedule. The course will comprise approximately 45 hours of study plus practice sessions for learners, and will offer both professional academic credit and a digital credential. It is expected that this credential will credibly signal competence in basic secure programming and showcase the participants’ commitment to security throughout the development process to potential hiring managers.

A high-level sample of program learning objectives follows. At the end of the program, participants will be able to:

- ▶ Code with a security mindset
- ▶ Walk through the technical aspects of specific vulnerabilities and exploits involved in programming
- ▶ Adhere to best practices for compliance and legal requirements associated with programming
- ▶ Analyze code to identify weaknesses due to violations of principles of robust/secure programming
- ▶ Recognize and correct common exploit risks in an existing program
- ▶ Include common—and uncommon, disruptive³—defense mechanisms in new code to prevent exploits

The program is currently in its design phase with all of the coalition members having contributed to the creation of a course outline. The outline will be finalized in an onsite meeting on June 27 and the “Developing Secure and Robust Code” course is expected to launch in Winter 2025.

Needs Analysis and Business Case

The initial need for this skill area was identified by the National Centers of Academic Excellence in Cybersecurity Program (NCAE-C). The SWEEPS program partners were selected to provide maximum curriculum insight into addressing the workforce need called out in the NCAE-C grant. In addition to the entities listed earlier the SWEEPS team has representation from California Polytechnic San Luis Obispo, Consumnes River Community College, and Dark Enterprises, Inc. (a company that specializes in cyber security training assessment) to weigh in on the program needs analysis and curriculum design.

The need for the skillset was also assessed through analysis of jobs data using Lightcast, a toolset that assembles and aggregates multiple data types, including jobs data, and that allows users to

³ Arshad Noor, 2020, Forbes: Disruptive Defenses are the key to preventing Data Breaches. <https://www.forbes.com/sites/forbestechcouncil/2020/03/06/disruptive-defenses-are-the-key-to-preventing-data-breaches/>

assess how skillsets show up in job requisitions. The Lightcast data indicated that job requisitions do not often call for Secure Programming skills compared to other cybersecurity or software development skills. To help understand why that may be, we also contacted several cyber security professionals identified by StrongKey and asked them if there was an industry need for secure programming skills (answer: “yes!”), and if a university program could help address it (also “yes!”).

The team conducted a market scan to understand the certification landscape in this domain (both from a competitive and a potentially complementary perspective). Twelve certifications were inventoried, from suppliers including GIAC, SECO Institute, ISC2 and Cisco. A scan of training program competitors was also conducted. This area is only lightly covered, with the principle competing programs being from Carnegie Mellon’s Software Engineering Institute Secure Coding courses (which also offer certifications). Other institutions with courses include Stanford University and University of Central Missouri. The review of certificates and competing programs helped us to understand how saturated the market is. Compared to other topics in technology, this domain is only lightly covered with education and certification offerings. The scan also gave us benchmarks for program costs and durations.

As another data point into the demand for this skillset, UC Davis has a Coursera Specialization in Secure Programming, and so we were able to assess through enrollment numbers on Coursera that the skill is in demand . . . but not as much as cybersecurity or coding in popular languages like Javascript (16,800 enrollments last year compared to 2800 for Secure Programming making Javascript about 6 times as popular in this benchmark). Massive Open Online Course (MOOC) platforms such as Coursera, edX, and Udemy or the MOOC aggregation site ClassCentral are excellent places to check the popularity of course topics.

Indicators like market saturation, Google search trends, and open course enrollments on Coursera helped us to assess learner demand potential which, coupled with price, helped to determine the revenue projections in our business case. In this case the pricing will be set based on the benchmark competitors in the marketplace taking into account (1) the comparative duration of the program; (2) industry recognition of any certifications (identified through searching the certifications on Lightcast to see if they show up in job requisitions); (3) format (in person, hybrid, online); (4) brand value of the offering institution (in the industry if known) (this can be somewhat subjective). We also have a floor price based on the cost per credit hour for open enrollment summer sessions. Price at projected student volumes is expected to cover costs and overheads at the Continuing and Professional Education target margin, as modeled in the program proforma financial projection.

The cost model for the program is a bottoms-up assessment (as close as we could get with advance planning), but the costs to develop are covered by the NCAE-C grant. The program will run for one year under the grant (where all learners will have costs covered); thereafter, it will need to sustain itself as an open enrollment program. Funding the development through the NCAE-C grant was an excellent way to make the business case for this program given the risks identified in the jobs data review. The sustainable business model will be fee based with price set using the method described above.

Program Design, Launch and Operations Planning

As noted earlier in the report the program design was a collaborative effort led by University experts with input from industry members of the coalition. The duration for the offering has been determined by the coalition team based on their domain expertise in assessing the amount of learning needed to meet the learning objectives for participants (given the participants prerequisite start and targeted end points). The duration was also aligned with academic units. In addition to our StrongKey partner, cyber security professionals at KPMG, NASA, and Infineon reviewed the draft outline at various points to provide feedback.

It is standard practice for UC Davis Division of Continuing and Professional Education (CPE) to collaborate with industry partners on an open enrollment program (in fact it is required to have a board of advisors with industry representatives for any Certificate program). The approval of non-credit digital credentials (badges) lies within CPE. Academic credit offerings do require approval from the campus department that has the domain expertise for the offering. As this offering is both an academic credit offer and will have a digital credential, both CPE and the Department of Computer Science will review and approve credentials. Substantial interdepartmental collaboration is ongoing to launch the program between those two departments. Professor Matt Bishop in the Department of Computer Science is the Principal Investigator for the grant and the leader of the academic initiative; Computer Science professors and graduate student researchers will teach and support instruction in the program; and Continuing and Professional Education instructional designers, marketing specialists, and administrators will support online program development, marketing launch, student recruitment, and operation of the program.

While the assessment strategy for the program has not yet been finalized, it is expected that program skills will be validated through both traditional knowledge assessments and performative authentic assessments (coding assignments). A digital credential will be provided to learners who meet performance criteria. The UC Davis CPE digital credential governance model requires that digital credentials be skills focused and assessed with criterion referenced assessments that credibly test the skill.

At UC Davis, the processes and systems that will be deployed and operated to support the program include: development and deployment of advertising content and web content; digital ad buys; lead tracking and customer relationship management with Salesforce; student record management, admissions management, and transcripts with Destiny; online learning delivery with Canvas; and digital credential delivery and management with Credly. Note that a record of digital credential delivery also exists in Destiny (which is our system of record for student data) via an integration with Credly.

Lessons Learned

Aligning industry and academia is not automatic . . . both have specific areas of focus. In education, academics tend to value agnostic and durable principles that can be broadly

applied but may require generalization skills and additional learning to apply to specific cases. Industry may prioritize specific skills that are in-demand now or solve a particular industry problem. There are deltas in prioritization, even among industry voices. Getting input from multiple industry and academic sources with experience in the targeted domain is critical in affirming learning priorities for an offering.



University of Maine System

Submitted by Claire Sullivan, Assistant Vice Chancellor for Innovation in Digital Badges and Micro-credentials

As a participant of the UPCEA Credential Consortium, the University of Maine System (UMS) set the following goal:

The UMS will align our achievements and future goals based on the actions and goals highlighted within *Building a Foundation for Our Future: University of Maine System Strategic Plan, 2023–2028*.

The plan was carefully reviewed and documented, indicating places where micro-credentials could add value. This document was sent to the Vice Chancellor for Academic and Student Affairs, who used it as a model for other initiatives to follow. Three broad themes emerged in that work to guide us in understanding how our initiative was already making a significant impact and how it could further contribute to learner success in the future. The three themes are:

- ▶ Systemwide collaboration
- ▶ Innovative micro-credential development
- ▶ Identification of student success metrics for micro-credentials

Our goal is important for our system and can inform other systems and universities about the importance of alignment and strategic integration.

Throughout this narrative, consider the following general questions: How can your state, system, or university create an ecosystem where alternative credentials can flourish and be sustained? What metrics will you use to determine the success of your own initiative? Guiding questions are also provided for each section.

Systemwide Collaboration

How important is collaboration within your own approach?

To start, we will briefly introduce our approach and the importance of collaboration. The UMS Board of Trustees asked to establish a systemwide approach to developing competency-based

workforce development micro-credentials. In 2019, a [report](#) was delivered, and the process for establishing the infrastructure, policies, and procedures began, including forming the Micro-Credential (M-C) Steering Committee with representation on each campus.

An intentional decision was made to use a unified approach to micro-credential development, reducing the confusion over what a micro-credential represents. All of our micro-credentials are competency-based and follow the same three-level framework. This collaborative approach fits well within the University of Maine System's first-in-the-nation, [unified accreditation](#) goals. Digital badges are awarded at each level with a culminating macro-badge indicating that the learner met the competency standards. Instead of building seven similar micro-credentials, one on each campus, we aim to develop one that can be implemented in seven different ways, keeping the outcomes-based assessments consistent. Our badges use standardized language and in-depth meta-data to help employers and other stakeholders understand what the earner knows and can do while also assisting the learners in articulating what they learned.

Using the Rutgers Education and Employment Research Center's [Non-degree Credential Quality Framework](#) as a guide, quality assurance is built in.

We look for opportunities to partner with employers and create micro-credentials that offer value to learners. Teams have worked with the aquaculture industry, the horticulture industry, school districts, tourism, and healthcare organizations. Teacher education and climate change resiliency are growing and important areas of M-C development. We want to continue to grow these strategic partnerships by creating a robust systemwide structure for supporting and partnering with employers.

As we started this journey, we turned to units with a history of collaboration and innovation. One of our strongest partners has been UMaine's Cooperative Extension, which has its own infrastructure and offices across the state. Learning assessments and digital badges were added to some of their training. Professional Development and Continuing Education hubs and research centers were also early adopters. We also aligned our initiative with other strategic initiatives and ongoing programs, streamlining processes. For example, the *UMS Transforms Pathways to Careers* initiative worked with the UMS M-C Initiative to create a micro-badge to aid in tracking internships. The UMS M-C Initiative is helping to expand our competency-based education portfolio in the non-credit area. We are considering the processes needed to expand into credit-bearing micro-credentials.

By offering micro-credentials, we are expanding access to education opportunities for all learners across Maine and beyond, regardless of where they are located or where they are in their life path. We offer micro-credentials for youth and adults to strengthen the pipeline into campus programs. We offer flexible options and provide a way for adult learners to familiarize themselves with our Learning Management System in a low-risk environment. We want all learners to see the University of Maine System campuses as places to upskill, reskill, and stop in and out throughout their lifelong learning journey.

The initiative uses a continuous improvement design to implement best practices in M-C development. We developed a M-C Development training that teaches development teams how to create a UMS M-C while earning a M-C along the way. Collaborative teams work with Instructional

Designers to establish accessible, learner-centric learning experiences in various delivery modalities. We also offer our faculty a micro-credential on best practices in online teaching and learning.

Compensation is awarded to select teams for development in the form of UMS mini-grants that focus on high-demand occupations/industries. Preference is given to teams of faculty/staff from multiple campuses. UMS will be designing a systemwide marketing plan that will include micro-credentials. Through our marketing efforts, we hope to expand our learner base to include more diverse audiences. At this time, we are building a revenue model to meet the goal of financial sustainability.

Innovative Micro-Credential Development

How are you determining what micro-credential training is needed in your state?

UMS reviewed Maine State economic and industry reports and strategic documents to align in-demand topic areas with the awarding of micro-credential development grants. Several areas related to student success stood out during this process.

Our framework and centralized approach support the growth of High-Impact Practices (HIPs), including internships, service-based projects, and other experiential learning opportunities. Each UMS micro-credential incorporates an applied, experiential learning opportunity at Level 3. Some of our micro-credentials fit with the definition of a HIP (e.g., Leadership, Undergraduate Research Scholar, and Global Competency).

Through our work with the Education Design Lab (EDL), we created a streamlined mapping process that allows faculty and staff to assess students on eight 21st-century skills. EDL badges have been implemented in Research Learning Experience courses and some general education courses. We would like to see further growth by embedding these badges in capstones, writing-intensives, honors college courses, first-year experiences, as well as more co-curricular programs. The strategic plan specifically calls for action regarding increased Service-learning/Community engagement micro-credentials. We plan to create one Community Engagement M-C delivered on each campus to recognize various engagement experiences. The Strategic Plan further calls for UMS to design a literacy curriculum that teaches a range of literacies and skills. We already implemented micro-credentials in information and financial literacy, and others can be created.

Diversity, Equity, and Inclusion (DEI) efforts are critical strategic priorities. Implementing micro-credentials can meet some DEI and cultural awareness goals. Our most successful badge to date is Dawnland: Maine Indian History, which is required for pre-service teachers and popular within school districts.

Identify Success Metrics

What metrics do you use to measure your success?

The process of aligning strategic priorities to the UMS Micro-Credential Initiative led us to create a primary goal for our students. Our goal is to offer every UMS student the opportunity to access at least one micro-credential on their campus. This goal will help us to:

- ▶ Strengthen our multi-campus ecosystem.
- ▶ Develop plans to create the infrastructure, policies, and marketing on each campus.
- ▶ Track the attainment of this goal using agreed-upon metrics.

More specifically, we wish to offer and support at least one micro-credential on each campus and grow the number of UMS student earners by 2028. If every UMS student earned just one micro-credential, we would have proof that each earner had completed an applied learning experience and demonstrated relevant skills and competencies. This primary goal meets the goal of *UMS Transforms Pathways to Careers* and aids in data collection and analysis processes. The following micro-credentials were selected as starting places: Career Prepared, Global Competency, Innovation, Leadership, and Undergraduate Research Scholar. Others, such as Community Engagement, will be added as they are developed.

To accomplish this goal, each campus must establish its own M-C infrastructure, adhering to the systemwide structure, processes, and framework. In this way, UMS will reign in the “Wild West” challenge some universities face. Identifying a unified set of success metrics is vital to determine the impact of micro-credentials on the learner, partners, and the university/system.

A systemwide, comprehensive data warehouse is needed to collate relevant metrics for reporting and analysis across the system. UMS will measure the number of badges awarded, revenue generation, and completion rates annually. Issuing digital badges is a way to track and document who has completed experiential learning opportunities, including internships. Each year, we send a survey to badge earners to help us determine impact. Training reflections also help us determine our strengths and areas for growth. Employer feedback will be added as we scale.

UMS M-C Initiative adjusts our offerings and processes as we receive feedback and learn from our stakeholders. Selecting effective technology that meets our data gathering, assessment, and registration needs is a high priority. With an improved registration and data collection system, we can track students over time by looking for impacts and trends to inform our decision-making. We wish to answer the following questions: Are students moving on to the next learning opportunity? Is our centralization process working effectively? How long does it take them to complete? Meeting this goal will require tapping into additional workforce development funding.

As you think about a systemwide approach or the growth potential at one university/college, we recommend using the UPCEA *Credential Maturity Index, based on the UPCEA Hallmarks of Excellence in Credential Innovation*, to measure your progress and to assess the gaps within your Initiative. UMS found this index to be an effective way to measure our successes and to keep an eye on areas of improvement. As your champions change and some micro-credentials are revised or sunsetted, it is important for you to have a reliable measure of your strengths and areas to improve and document across time.



University of North Texas

Submitted by Benjamin Brand, Senior Director, New Ventures, Digital Strategy and Innovation

Background

The origins of UNT's microcredentials program lie in the establishment of the Division of Digital Strategy and Innovation (DSI) in 2018 under the leadership of its Vice President, Dr. Adam Fein. Since its creation, DSI has expanded to include four departments with 53 full-time and 14 part-time staff:

- ▶ **CLEAR (Center for Learning Experimentation and Research):** Supports faculty in designing and delivering effective courses, combining technological resources with expert consultation for online, hybrid, and in-person learning environments.
- ▶ **Digital Growth:** Promotes UNT's online programs by building the UNT Online brand, partnering with academic units to develop and implement growth strategies through comprehensive research and marketing services.
- ▶ **Enterprise:** Collaborates with corporate and institutional partners to deliver customized educational programs that equip adult professionals with the skills needed to succeed in a rapidly changing economy.
- ▶ **Learning Analysis & Digital Research Center (LADR):** Conducts research to inform and innovate digital teaching and learning practices.

In 2000, UNT launched an online degree completion program, the Bachelor of Applied Arts and Sciences (B.A.A.S.), on Coursera, making UNT the first American university to offer a bachelor's degree on the platform. Between 2020 and 2022, DSI developed nine Massive Open Online Courses (MOOCs) on Coursera, primarily based on credit-bearing B.A.A.S. courses. These MOOCs have enrolled more than 40,000 learners, providing an accessible introduction to the online degree and driving B.A.A.S. enrollments. The insights gained from developing these MOOCs positioned UNT to launch its next innovation in alternative credentials: a microcredential program that engages all four DSI departments and leverages faculty expertise from across the university.

Microcredentials at UNT

UNT's microcredential program is the result of 18 months of strategic visioning and planning, coordinated by DSI and involving leaders from the university's Divisions of Academic Affairs and Enrollment Management. Launched in January 2024, the program is administered by DSI, which collaborates with academic departments and colleges to create a diverse portfolio of microcredentials. As outlined on the [UNT Microcredentials—Information for Faculty](#) website, the program supports three types of microcredentials: for-credit, curriculum-embedded, and non-credit. Its guiding principles are:

- 1 Learner Success:** Our microcredentials equip learners with industry-recognized skills that advance their careers. We actively pursue strategic industry partnerships to keep our offerings relevant and impactful.
- 2 Open Framework:** DSI provides a flexible support and governance structure that enables the creation of various types of microcredentials, tailored to the needs of specific learners, disciplines, and industries.
- 3 Ensured Quality:** Our three-stage review process, featuring a dedicated Microcredential Review Committee, ensures the quality, rigor, and alignment of each microcredential with professional and academic standards.

In parallel with the visioning and planning for the microcredential program, DSI Enterprise developed an integrated technology platform to support all non-credit programs at UNT, including non-credit microcredentials. We adopted CampusCE as our CRM and online registration system, implemented a dedicated Canvas instance for non-enrolled UNT students, and utilized Canvas Credentials for issuing digital badges. This integrated approach supports the entire learner journey from registration to completion, streamlining the management of non-credit enrollments.

Since its launch, the microcredential program has introduced two non-credit microcredentials. AI Fundamentals equips UNT students of any major with AI literacy and skills to succeed academically and professionally. Digital Accessibility Foundations provides adult professionals with the knowledge and skills to make digital content accessible to all users. Both microcredentials focus on in-demand, market-relevant skills that align with UNT's areas of excellence, are broadly applicable across various industries and roles, and can be tailored to the needs of individual industry partners. This three-pronged strategy also guides our third microcredential, Workplace Writing Essentials, developed in conjunction with the UPCEA-led consortium, "Building Capacity, Expanding Pathways."

Workplace Writing Essentials

Workplace Writing Essentials: Communicating with Clarity, Impact, and Professionalism (WWE) is a non-credit microcredential developed by Dr. Erin Friess, Professor of Technical Communication at UNT, and scheduled to launch in fall 2024. Requiring approximately 40 hours to complete, WWE targets white-collar professionals across various sectors, including corporate, non-profit, and government. Designed to enhance effective, efficient, and persuasive written communication

skills, this microcredential is part of a broader upskilling initiative with one of UNT’s potential business partners. This organization is a top Fortune 500 company based in the Dallas–Fort Worth metroplex and includes a highly placed UNT alum who has championed mutually beneficial collaboration. While negotiations with this prospective partner are ongoing, the collaboration is expected to focus on fields such as data analytics, artificial intelligence, and digital accessibility, in addition to professional writing.

The selection of Workplace Writing Essentials as the featured alternative credential for the “Building Capacity, Expanding Pathways” consortium was based on three factors:

- 1 Labor Market Need:** WWE addresses a significant demand for writing and communication skills across various sectors. Research conducted by DSI Digital Growth using Lightcast identified 104,786 unique Texas job postings from April 2023 to March 2024 that listed writing as a required skill. The top three occupations requiring these skills were registered nurses, managers, and sales representatives. UPCEA’s tailored research on skills gaps in the Dallas/Fort Worth region also revealed a high demand for communication, writing, and managerial skills, corroborating our internal findings.
- 2 Faculty Partner:** Dr. Erin Friess has been an enthusiastic collaborator, well-positioned to develop a high-quality microcredential that meets the needs of adult professionals. She has created several successful online courses in collaboration with DSI CLEAR and has extensive experience in creating corporate and community partnerships as the director of the Technical Communication and Community Outreach (TACO) Lab. Dr. Friess wrote a detailed proposal for WWE, outlining faculty responsibilities, development costs, and revenue divisions among stakeholders, including the academic department. This proposal was thoroughly vetted by the Microcredentials Review Committee to ensure it met workforce needs and had high potential for market success, and it was approved by her department chair and college dean.
- 3 Potential for Corporate Partnership and Customization:** WWE is appealing to UNT’s prospective business partner due to its broadly applicable content, suitable for nearly any corporate role. Additionally, it can be easily customized by incorporating industry- or organization-specific materials and offering additional synchronous sessions (on-site or virtual) that complement and enhance the asynchronous content.

Our experience in selecting WWE for development in conjunction with the “Building Capacity, Expanding Pathways” consortium underscores the critical importance of establishing robust governance, quality control, review processes, and technology platforms before scaling up microcredential offerings. By solidifying our internal processes, including the formation of the Microcredential Review Committee, by the end of 2023, we were able to strategically involve all relevant stakeholders—from academic departments to prospective corporate partners. This foundational work ensures that microcredential development aligns with strategic visions and meets rigorous quality standards. Establishing these processes, although time-consuming, is a best practice that significantly benefits long-term project success and scalability.



Vanderbilt University

Submitted by Amanda Harding, Director, Strategic Initiatives & Partnerships, Office of Learning Innovation

Vanderbilt University & Urban Housing Solutions: Developing an alternative credential to meet workforce needs in Nashville, TN

Introduction

Purpose: The purpose of this project is to develop a non-credit credential in partnership with Urban Housing Solutions to meet the needs of their workforce. This credential is being developed as part of the Credential Innovation Consortium which aims to facilitate and expedite the adoption of scalable business and program models by universities. Through support, development, and delivery of an alternative credential to a local organization, Vanderbilt is positioned to shape the future of non-credit alternative credentials, strengthen community ties, and provide offerings that meet the dynamic needs of the regional workforce.

Scope: The scope of this project is limited to developing an online or hybrid credential to meet the organizational and workforce needs of Urban Housing Solutions (UHS). In the future, the development and delivery of this credential could be made available to other organizations with similar needs.

Engaging with a Partner Organization

Nashville is known as the “Healthcare Capital of the United States” and is home to a thriving healthcare industry with Vanderbilt University and its renowned academic medical center as a major anchor in the city’s healthcare ecosystem. With Vanderbilt University Medical Center (VUMC) as one of the largest employers in the region, its presence helps attract top healthcare talent and companies to the area. Nashville is headquarters to over 300 healthcare companies, including major players like HCA Healthcare, Ardent Health Services, Community Health Systems, and LifePoint Health. The healthcare sector accounts for over 200,000 jobs in the Nashville region and contributes significantly to the city’s economy.

Nashville’s healthcare strengths include its concentration of healthcare management, health IT, and medical device companies. **And while the city has a highly skilled workforce and is a hub for healthcare research and innovation, labor market data still indicates a shortage of healthcare**

and nursing related skill sets. Signaled in the market research conducted by UPCEA and in discussions with Vanderbilt School of Nursing leadership, there was an additional healthcare need identified, to upskill and train pre-licensure healthcare professionals.

Given the growing demand for this skillset, and the School of Nursing's desire to provide social and community impact through an alternative credential, non-profit organizations were identified as viable partner organizations.

The Vanderbilt School of Nursing (VUSN) has established a significant partnership with UHS through various initiatives that enhance healthcare accessibility for vulnerable populations in Nashville. These initiatives reflect a broader strategy to integrate health services within the housing provided by UHS, creating a supportive environment that promotes better health outcomes and addresses the social determinants of health in our local communities. This partnership represents a significant step in using housing as a comprehensive health and social services platform, targeting some of Nashville's most vulnerable populations.

These collaborations provide direct healthcare services and create educational and practical training opportunities for Vanderbilt nursing students and exemplify how academic institutions and nonprofits can work together to address significant public health challenges and improve community health outcomes, making UHS the perfect organization to co-design, develop, and deliver an alternative credential to upskill their employees.

Stakeholders

Vanderbilt Office of Learning Innovation | The Office of Learning Innovation (OLI) is the hub for digital and lifelong learning at Vanderbilt. OLI partners with academic units across campus to identify and develop innovation learning programs that strengthen Vanderbilt's mission, reach, and impact of learners globally.

Vanderbilt School of Nursing | Established in 1908, Vanderbilt School of Nursing (VUSN), within one of the nation's most respected research universities, has a long-standing reputation for excellence in nursing teaching, practice, informatics, and research. Enrolling approximately 1,000 students each year, VUSN learners can choose from one of 14 programs at the masters, doctoral, and postmasters certificate levels.

Urban Housing Solutions | Urban Housing Solutions (UHS) embarked on its mission to serve Nashville, Tennessee, in the late 1980s. It was born out of the Council of Community Services' initiative to address the pressing issue of long-term affordable housing, particularly for individuals and families experiencing homelessness. As Nashville's leading nonprofit affordable housing provider, UHS oversees more than 30 properties, offering various housing solutions for diverse demographics, including the unemployed, low-income families, individuals with special needs, and the Nashville workforce. UHS's services go beyond mere housing, encompassing support such as transportation access, medical and mental health care, and substance abuse recovery.

Developing an Alternative Credential

Market Research | As part of the Credential Innovation Consortium, market research was conducted on behalf of Vanderbilt to identify in-demand careers in the region and specific workforce skills gaps.

Healthcare Support | The regional demand in this industry is driven by the growing need for healthcare workers, including pre-licensure healthcare professionals such as home health and personal care aides, and medical and health services managers. Four of the top regional employers in Nashville are in the healthcare industry. Considering the overall job market and the distinct needs of the employers in the region, possible micro-credential topics in this space include:

- ▶ Medical Terminology
- ▶ Home Healthcare
- ▶ Healthcare Administration
- ▶ Basic Life Support (BLS)
- ▶ Medication Administration
- ▶ Treatment Planning
- ▶ Nursing Assistant Certification (CNA)

Curriculum

Given the market research findings and discussions with UHS leadership, VUSN opted to consider a tailored micro-credential program centered around trauma-informed care for their employees. Utilizing its collaboration with the Trauma Resource Institute and faculty expertise in the Community Resilience Model, this program would focus on best-practice Trauma-Informed Care (TIC) and Community Resiliency approaches, equipping UHS staff with the necessary skills to effectively support their community members, especially those impacted by trauma.

The curriculum would integrate the core principles of TIC—safety, trustworthiness, choice, collaboration, and empowerment—and cover the Community Resilience Model, which promotes skills to stabilize the nervous system and enhance overall well-being. VUSN could structure this course with modules that discuss the effects of trauma, strategies to build resilience, and practical tools for applying TIC and resilience in housing services.

Since UHS employees are not licensed in nursing care or related skill sets, this certification would bolster their professional development and enhance UHS's capacity to serve as a trauma-informed care leader in the community, without the need for degree credentials. Delivered to all staff at UHS (~100 employees) the program would include asynchronous online learning modules with the possibility of an in-person demonstration to finalize and award the certificate.

Business Model

When considering a viable business model, VUSN elected to use this alternative credential as a social impact initiative, rather than a revenue driver. However, in the future, VUSN will explore how to adapt the curriculum for other organizations at a cost, helping to diversify their revenue streams.

With VUSN currently piloting a separate micro-credential effort, they have developed a financial model for faculty who are creating micro-credential courses. This financial model is based on a

revenue share agreement, and thus would not be applicable to this initiative. Nursing leadership is considering how to further incentivize faculty through modest lump sum payments for the creation of content specific to this alternative credential. However, VUSN did note that many of their faculty are passionate about giving back to local community organizations, and may not need additional incentives.

In addition to faculty resources, the School of Nursing is home to a dedicated instructional design and digital media team that support all course development at the school. This initiative will become part of the team's portfolio and thus will not require other resources from outside the university. The Office of Learning Innovation will continue to provide centralized support for project management, administrative functions for registration and credentialing, learning management system setup and support, and ongoing program assessment.

Although we do not anticipate charging UHS for the credential, as this is pitched to other organizations in the future, we will determine the price point through a strategic competitive landscape analysis. Given the limited information in the non-credit space, OLI has developed both internal and external benchmarks for non-credit offerings to help determine market pricing and the overall go-to-market strategy.

Lessons Learned

Timing | Despite best efforts to align credential development timelines with grant deadlines, there were challenges in arranging conversations between VUSN, UHS, and OLI. As we look to do this again in the future, Vanderbilt will plan to include additional time buffers to allow for scheduling across multiple teams.

Academic Partners | As a centralized support unit (OLI), identifying an academic partner to launch alternative credentials can be challenging. Our approach was to seek out existing relationships with academic units who were already engaging in similar work, or at the very least, interested in this work. Because the School of Nursing had strategic priorities to launch micro-credentials, they were eager to participate and noted they had a great opportunity to explore other benefits (i.e., social impact, brand awareness, future grant funding) of creating alternative credentials. Understanding academic units' strategic priorities will be key to establishing successful partnerships for non-credit offerings.

Audience | When navigating non-credit credential development it is critical to get the right people in the room. We found that approaching conversations in phases with different participants involved was beneficial. Our first conversation began by socializing the idea with our existing contact at VUSN (Assistant Dean, and Senior Advisor to the Dean). From there, VUSN looped in two faculty members who lead strategic initiatives related to community partnerships. These faculty had great ideas, but there were concerns around feasibility of the offerings due to the nature of the content proposed. When engaging with a partner organization, be sure to include team members who are strategically sound leading the discussions and those closest to learning and development, or those who have a good understanding of employee needs. The Office of Learning Innovation serves as the centralized

unit who can provide strategic guidance, project management, and market research expertise which allows all parties to remain aligned on project vision and goals.

Key Considerations | Of most importance when designing and developing alternative credentials is to ask your constituents the following questions:

1. What topics of interest to the organization play to the academic partner's expertise and strengths?
2. Are there faculty in the school who are interested in serving as instructors for proposed topics?
3. How will faculty be incentivized to create and deliver non-credit content?
4. What is the proposed business model for this credential offering?
5. What type of agreements or legal documents need to be involved (e.g., MOU, NDA)?

Next Steps

After our initial kick-off call with UHS, VUSN and OLI determined the most immediate next step was to conduct a small needs assessment to better understand the skills gaps of UHS employees. We will use this survey, as well as a few informal employee interviews, to align leadership expectations with employee needs. In parallel to this work, we are internally drafting an MOU with Vanderbilt's Office of General Counsel.

Once the needs assessment is complete, VUSN and OLI will convene a small working group of nursing faculty and UHS leaders to develop the following:

1. Overall credential offering goals
2. Learning outcomes
3. Curriculum and content
4. Assessment of credential success

Once the offering goals and curriculum has been developed, OLI will conduct a brief landscape analysis to see if there are other credentials in the market to determine future market viability.

VUSN and OLI are also excited to explore opportunities to connect this alternative credential work to larger initiatives within Nashville metro, and the State of Tennessee through grant funding.



Villanova University

Submitted by **Sasha Haddoun, Director of Professional Education and Pete Watkins, Director of Teaching, Learning and Assessment**

Project CLIMB Leadership Training

A Partnership between Villanova College of Professional Studies and Delaware County Emergency Services

Partners and Participants

The Villanova University College of Professional Studies partnered with Delaware County Emergency Services to provide leadership training to emergency services employees and first responders around the county. This course ran in the Spring term of 2024 as a pilot program. 22 students completed the program, some of whom worked for the county emergency services office and others who worked for police, fire, and EMT providers around the county.

Villanova University is a Roman Catholic university founded in 1842 and located in Delaware County, PA. Since Villanova has thousands of students, faculty and staff living and working in the county, the emergency management office already had a relationship with our university. When the county emergency services department needed leadership training for their staff, they sought out Villanova.

Program

The program had six two-hour classes of in-person instruction on evenings and weekends on Villanova's campus. Students also had readings, reflections and assessments which were posted in the university's learning management system.

Pricing

Villanova offered the program free of charge to serve the community. We hope to charge tuition for this program in the future, either to a future cohort from Delaware County Emergency Services

or to other counties in the region. We do not plan to scale (pun intended) this program nationally because of the in-person instruction.

Offering this class also generated publicity for our bachelor's and master's degrees in public administration and we hope that some students (or their colleagues) will enroll in one of those programs.

Faculty

Villanova has for many years offered both undergraduate and graduate degrees in public administration. Therefore, when this opportunity arose, we were well-prepared. The course was team taught by five faculty members from the Public Administration department who collectively had a wealth of experience in public administration and teaching.

Curriculum

The curriculum was developed by a group of five public administration faculty. Pedagogical and technical support were provided by staff from the College of Professional Studies. For example, a CPS staff member helped build the course in the university's learning management system (Blackboard).

The partner had noted that many emergency management personnel and first responders have or will advance into leadership roles. Therefore, the course focused on key leadership skills such as communication, inclusion, motivation, and collaboration. We use the acronym CLIMB to create a memorable way of describing the curriculum.

- ▶ **C**ommunicate with Clarity
- ▶ **L**ead with Ethics
- ▶ **I**nclude by Design
- ▶ **M**otivate on Purpose
- ▶ **B**uild a Collaborative Structure

The course borrowed some material from existing Public Administration courses and was broken into six modules.

- ▶ Module One: Developing Self: Understanding Your Leadership Strengths
- ▶ Module Two: Developing Self: Understanding Your Leadership Strengths (continued)
- ▶ Module Three: Developing Others: Leading Inclusively and Motivating Diverse Teams
- ▶ Module Four: Developing Others: Leading Inclusively and Motivating Diverse Teams (continued)
- ▶ Module Five: Developing Connections: Engaging and Inspiring the Community
- ▶ Module Six: Final Simulation & Reflection

Assessment

There were a variety of assessments throughout the course culminating in a realistic case study where students were presented with a complex scenario where they had to make difficult decisions about how to allocate limited resources. Specifically, they had to make decisions about closing fire stations and had to consider many variables including history, response times and the demographics of the fictional township. They had to devise a plan for seeking community input, communicating the decision to the community, and managing the community reaction.

They worked on this case study in groups and made presentations to a panel of “judges” during the final class. The judges included two faculty members from the Department of Public Administration (who were not instructors for this course) as well as the Dean of the College of Professional Studies.

Attendance and Participation

Attendance and participation were excellent in the pilot despite the fact that the students have stressful and demanding jobs with irregular hours. All participants successfully completed the program for an impressive 100% success rate. They were awarded badges through our badging platform, Credly.

We had excellent support from our partner, Delaware County Emergency Services. Senior leadership from that office along with an elected official came to the closing ceremony to see the students receive their badges. This gave the last day of class a celebratory air and reinforced how much their employers valued the students taking advantage of this learning opportunity.

Lessons Learned

From this partnership, we learned the following:

- ▶ When possible, partner with an organization where you have an existing relationship as we did with Delaware County Emergency Services.
- ▶ When the employer is supportive and recognizes the time and effort the students are putting in, it is very motivating for the students. It was clear throughout the program that the partner organization supported the program and encouraged their employees/our students to attend class and to be fully engaged.
- ▶ We were able to pull together an excellent program in a short period of time because we already offered both undergraduate and graduate degrees in public administration for many years, so we had several faculty with subject matter expertise, professional experience and teaching experience.

Overall, we would suggest to other institutions to look for partnerships where you have an existing relationship and where you already have the required subject matter experts.



Virginia Commonwealth University

Submitted by Tinsley Jones, Associate Director for Continuing Education Programming

Virginia Commonwealth University Continuing and Professional Education (VCU CPE) seeks to develop learning opportunities, in the form of open enrollment courses for a variety of topics and custom training for businesses and organizations. Often, employers will seek out assistance from VCU CPE to develop and deliver customized training for their employees to address a specific skill or set of skills. A Virginia state agency approached VCU CPE in October 2023, seeking training options for their staff in a number of areas, including critical thinking and problem solving, computer training in Microsoft products, public speaking, and professional writing. This state agency was newly formed and, at the time, had a staff of around twenty employees. Staffing was expected to grow in the coming months as legislation directing the agency was predicted to expand, which would, in turn, increase the mandated responsibilities of the agency.

Nurturing Partnerships

The primary contact from the state agency was the Human Resource Director, who had a direct pulse on what skills employees needed to be successful in their roles and what skills gaps they were experiencing currently as well. An initial scoping meeting was set in November, and over the course of the following six months, we continued discussions and discussed their various training needs. We provided options on topics that could be addressed, and collectively, we determined that a professional writing credential could benefit their team greatly. The state agency was open to the modality used, whether in-person or online, and they were also flexible for when the credential may be available. Now that the state employer and skills required for their staff had been identified, the next step was for VCU OCPE to identify an academic partner to co-create the credential.

VCU CPE is well-positioned to connect with academic units within the university. The bridge to inviting the VCU Department of English to be the academic partner was first made through the connection to micro-credentialing within the university. In addition to providing adult learners with opportunities for continuing education and professional development, VCU CPE also serves as the administrative engine for all micro-credentials and digital badges created at the university. This affords the ability to create and publish digital badges for current courses as well as work with academic units to create both credit-inclusive and noncredit micro-credentials. Therefore, VCU CPE has the necessary resources and processes in place to create a micro-credential. The badging platform utilized by VCU is Credly by Pearson, and numerous badges and micro-credentials have been developed over the last four years at VCU. Initially, digital badges offered through VCU OCPE were limited to noncredit and credit-based events that focused on a single topic or skill, and culminated into learning that was transcribed and represented through the receipt of a digital badge. More recently, VCU has been

expanding micro-credentials beyond single event digital badges for a more robust approach to micro-credentials for the university, including developing pathways for stackability among micro-credentials, with a focus on aligning skill attainment with industry demand.

Within this climate for expansion and with its connection to digital badging and micro-credentialing at the university, VCU CPE received the results of a survey from an instructional innovation council that was seeking to capture ideas for the development of micro-credentials, as the university seeks to offer more credentials that both serve our current student body and the community-at-large. The Department of English had indicated interest in creating a professional writing credential. Thus, the English Department was invited to participate in the co-creation of a writing credential for the state agency already previously identified. This invitation was shared with the Chair of the Department of English, and an initial meeting was set. The English Department expressed keen interest in playing a role in the development and delivery of a professional writing or general business writing credential, and they gathered details and posed key questions to determine the needs of the employer. Specifically, to whom is the agency writing (audience), and what are they wanting them to do (action)?

Once the Department of English was an established academic partner for the credential, another meeting with the state agency was called to bring both parties together, the academic unit and employer, to explore more fine details related to the development of a professional writing credential that would best serve the needs of the state agency. At this meeting in May 2024, the Human Resource Director invited another Human Resource administrator. They had previously polled their executive leadership on some specific skills needed and current skills gaps identified in the area of writing and organizing content for specific audiences. Therefore, they were able to state the specific, vital skills they felt their staff needed training. These included organizational skills in writing, formatting, and identifying appropriate and consistent writing styles for the content and audience.

Micro-credential Initiative

This state agency communicates with and presents information to both political and legislative audiences through reports and materials for boards and governing bodies as well as community members through awareness and education initiatives. The credential for professional writing for general business communication to be created will focus on a specific set of skills to fill the gaps identified, including addressing ethical handling and presentation of data (such as proper use of charts and figures), rhetorical analysis, digital rhetoric composition, and report writing. Employees participating in the credential will be serving on either the data and reporting team, public affairs team, or regulatory team. The recommendation from the academic partner, based on the topics to be covered, is to hold two to three in-person sessions, with each session not exceeding a two-hour duration. The sessions will be held in-person at the state agency's facility; however, a LMS will be utilized to store course documents, materials, and resources, and access will be granted to participants. Each participant that successfully completes the curriculum will be awarded a digital badge. (The metadata for the badge will be co-created by all parties as well).

No definite timeline has been set to develop and launch the credential. However, both parties are open to co-creating the curriculum over this summer term and launching the credential in early

fall. From an institutional perspective, with this being a noncredit program, a more accelerated path from ideation to launch, sans the required committees reviews and approvals that exist for for-credit programs, typically can be achieved. (However, as VCU's micro-credentialing governance continues to be developed, this timeline could be altered in the future).

The business model utilized will be a fee-based model presented to the employer utilizing the credential for their employees. They are expecting twenty to twenty-five employees to participate. The budget will capture all direct and indirect costs associated with the development and delivery of the credential. The full budget continues to be finalized as certain variables remain outstanding, such as whether graduate students within the English Department will facilitate the credential, with support and collaboration from a faculty member. We also expect that as this credential has the opportunity to be replicated for other community business partners, a revenue-share with the academic partner will be explored. This model would incentivize curriculum development and support continued involvement and partnership with the identified academic unit. Other aspects that affect the budget still need to be realized, too, including overall development time and identifying the skills assessment to be utilized and embedded in the curriculum.

The next few months will lend more meetings and discussion to continue to develop and implement the credential for the state agency. Both the academic unit and employer are excited for the end-result. VCU CPE expects continued opportunity with this agency as they continue to grow and develop, leading to other credential opportunities and other ways to invite academic units within the university into partnership.



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