SUNY Micro-Credentialing Task Force

Report and Recommendations

September, 2017

DISCUSSION DRAFT

SUNY The State University of New York

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I. INTRODUCTION

Today's employers are increasingly looking for candidates with more than a college degree; they are seeking individuals with detailed and easy accessible credentials that verify skill competencies specific to their hiring needs. In response, institutions of higher education are embracing the micro-credential as a means of meeting business and industry expectations, and as a way to prepare well-rounded students with highly marketable skills.

As the pace of technological developments continues to increase, higher education has a responsibility to provide cutting-edge teaching and learning that prepares students for the workforce. A combination of applied learning experiences, credentialing, and a quality degree stack the competencies needed for graduates to succeed in today's highly competitive job market.

Further, we know that micro-credentials can contribute to lifelong learning and professional development. As higher education and industry work together to bridge the gap of student preparedness for the workforce, the micro-credential adds a stackable skill set to the foundational college degree.

The SUNY system should emerge as a leader in affirming the credibility of quality micro-credentialing. Industry has already ventured into this domain; however, higher education plays a critical role in validating the student learning outcomes associated with micro-credentials. SUNY can ensure academic rigor, faculty engagement, organization, and a common language as it accepts the task of framing the high-quality micro-credential.

About the Micro-Credentialing Task Force

The SUNY Micro-Credentialing Task Force ("the Task Force") was charged with the following:

1. Review of the current literature and growing national dialogue on micro-credentials, including evidence-based best practices and ongoing efforts to define and translate micro-credentials;

2. Examine work currently underway across SUNY's 64 campuses to develop and/or implement micro-credentials; and

3. Review of relevant SUNY policies, with the goal of identifying possible barriers, as well as potential opportunities for renewed policy, to enable campuses to more effectively support student access and success through micro-credentialing.

The Task Force membership included broad representation from across SUNY: presidents, provosts, faculty governance, student governance, registrars, business officers, institutional researchers, and continuing education officers (see Appendix D).

From the start, the Task Force acknowledged the potential of micro-credentials to:

- enable campuses to more quickly respond to student need and industry demand;
- establish new academic/industry partnerships;
- motivate students to persist toward academic and career goals; and
- bridge noncredit and credit-bearing coursework and experiences.

These are all efforts that support SUNY's ongoing commitment to providing New Yorkers with the credentials they need to continue their education, find a job and/or advance in their careers. Central to the work of the Task Force is SUNY's ongoing commitment to ensuring academic rigor and quality of all credentials offered by SUNY.

II. WHAT ARE MICRO-CREDENTIALS?

At their most basic level, micro-credentials verify, validate and attest that specific skills and/or competencies have been achieved. They differ from traditional degrees and certificates in that they are generally offered in shorter or more flexible timespans and tend to be more narrowly focused. Micro-credentials can be offered online, on-campus, or via a hybrid of both.

Despite national efforts by Lumina and others to establish universal definitions around micro-credentialing, there remain inconsistencies. The Task Force has provided a comprehensive definition of terms (see Appendix A) that we hope will provide a consistent taxonomy across SUNY. However, nationally, terms are often used interchangeably. For example, badging, a type of micro-credential, is often used synonymously with the term micro-credential itself.

Notably absent from most definitions of micro-credentials, perhaps because they are offered within and outside of the University setting, is recognition of faculty purview over curriculum and standards. The Task Force addresses this specifically, seeking to ensure that the awarding of micro-credentials across SUNY is consistent with the University's commitment to shared governance, particularly, the role and responsibility of the faculty.

Micro-Credential Benefits

- *Motivate students toward completion of a credential or degree program by highlighting progressive attainment of competencies.*
- *Support academic/industry partnerships through credentials that meet industry requirements and/or are designed to meet a specific need.*
- *Provide more specificity to potential employers about skills and competencies learned.*
- *Supplement an existing degree program with complementary skill sets.*
- *Ladder from noncredit to credit.*
- *Ladder from a stand-alone credential to a degree program.*
- *Provide short-term, immediate competency development opportunities valuable for ongoing professional development.*

Also missing from most definitions is specific recognition of students' best interests. Given the wide variety of micro-credentials that can be offered, campuses hold a particular responsibility to provide clarity about what any given micro-credential is and is not. Clarity regarding cost, eligibility for financial aid, transferability, competencies mastered, and applicability to a degree program are examples of issues that must be addressed. If a micro-credential is a partial representation of the set of courses within one or more credit-bearing curricula, students should be made aware of all options to stack the credential(s) toward a full registered certificate or degree program.

Recommended SUNY Micro-Credential Definition

As a result, this Task Force recommends the following definition of micro-credentials at SUNY:

> *Micro-credentials verify, validate and attest that specific skills and/or competencies have been achieved and are endorsed by the issuing institution, having been developed through established faculty governance processes and designed to be meaningful and high quality.*
>
> *Micro-credentials may represent the content of credit or noncredit study; they may take the form of digital badge, MOOC, or micro-award, and can be offered online, on-campus, or a hybrid of both. Micro-credentials may be specifically recognized by certain industries, in which case they may have the advantage of providing validation and attestation of industry-specified and frequently highly sought-after competencies.*
>
> *Each micro-credential awarded must be represented clearly and accurately, addressing all associated costs, financial aid, transferability, and applicability (e.g., stack-ability) toward a formal award(s) (i.e., registered degree, certificate).*
>
> *Micro-credentials can be used to highlight competencies earned as part of a credit-bearing program (motivating students to persist and distinguishing students among prospective employers); serve as an introduction or entry point to a degree program (stackable); or be issued as a stand-alone credential and/or one complementary to a degree program (an English major may benefit from a micro-credential in computer science; a computer science major may benefit from a micro-credential in business writing, an education major may seek continuing professional development, etc.).*

The principles outlined below guided the work of the Task Force and also constitute Task Force recommendations regarding the development of micro-credentials at SUNY.

III. GUIDING PRINCIPLES FOR CREATING MICRO-CREDENTIALS AT SUNY

The following principles guide the recommendations of the Task Force and represent best practices in micro-credential development:

1. **Academic quality is paramount for micro-credentials, and faculty governance participation is required.**

   SUNY micro-credentials must meet high standards of academic rigor. Appropriate channels for shared governance must be employed for credit-bearing micro-credentials to enjoy legitimate, academic status. Thus, curriculum committees and/or local faculty governance bodies should be involved in the development and approval of micro-credentials, as appropriate at each campus, and consistent with SUNY policy and New York State regulations.

2. **Micro-credentials are initiated locally, developed, and approved according to local campus policies and procedures, consistent with campus mission and strategic goals.**

   Part of the power of micro-credentials is that they take advantage of local opportunities and local expertise. Campuses are encouraged to develop micro-credentials that serve their local constituencies, rather than appeal to a generic, standardized set of goals. The Task Force does strongly recommend that campuses consult with their liaison in the SUNY System Program Review and Planning Office when developing micro-credentials.

3. **Micro-credentials designed to meet market needs should be informed by current data from appropriate markets and align with relevant industry/sector standards.**

   The power of micro-credentials—open digital badges, in particular—is in their ability to easily showcase to employers the skills and competencies of applicants. Because they generally align to specific market needs, data regarding those needs and industry standards should be incorporated into micro-credential planning and development.

4. **Micro-credentials can provide opportunities for industry/education connections and partnerships.**

   Because micro-credentials are intended to highlight specific skills and competencies, they should be created with substantial input from industry partners and other employers whenever possible. These might include meeting with representatives of business and industry and soliciting initial ideas from local employers. Micro-credentials are most successful when they are reflections of academy-industry partnerships.

5. **Micro-credentials are inherently more flexible and innovative.**

   As they are smaller-scale than full degrees, micro-credentials have fewer standardized requirements. Thus, micro-credentials often more easily lend themselves to innovation. Campuses are encouraged to use micro-credentials to help develop new, creative courses and programs. They can meet market needs with responsiveness, agility, and dexterity. Micro-credentials can take advantage of unique partnerships and technology.

6. **Micro-credentials should be portable.**

   A micro-credential should be useful beyond the particular context in which it was earned. That is, micro-credentials should assist students in earning employment (or advancement) in a particular field and/or should count toward a higher-level credential that may be delivered at the same or other academic institutions.

7. **Micro-credentials should be stackable.**

   Micro-credentials should stack toward a registered certificate or degree. Stackable credentials are part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help that individual move along a career pathway and further education.

IV. COMMON TYPES OF MICRO-CREDENTIALS

Digital Badges

The term 'micro-credential' is often used interchangeably with the terms 'badge,' 'digital badge,' and/or 'digital credential,' as badges are one of the most common types of micro-credentials issued today.

Badges are generally web-based and "clickable," linking viewers to extensive meta-data that provides detail on the knowledge and skill-sets represented. Many badges include links to actual student work or portfolios of work as well as assessments used to verify competencies. Badges should always be verifiable, including a link to the relevant webpages on the issuer's website. One of the reasons badges have gained popularity is that they can be displayed online in personal pages on LinkedIn, Twitter, Facebook, etc. There are a number of companies who host badges such as Credly, Mozilla Backpack, Accredible, GlobalSign[1], etc.

Several SUNY campuses have begun to offer badges. Stony Brook University has developed a catalogue of badges; some are noncredit for professional development purposes, while others

[1] Mention here in no way constitutes an endorsement. Company names are simply provided for informational purposes.

award graduate credits and can be used toward a graduate certificate or degree program. Students not enrolled in the related degree program need departmental permission. For example, Stony Brook's graduate level badge, "*Social Entrepreneurship Badge,"* demonstrates that a student has completed three for-credit courses covering entrepreneurship, leadership, team effectiveness, communications, advocacy, marketing, etc. In this case, the stackable credential can stand on its own as a value-added credential for students or professionals, or it can also be applied (once admitted) toward an advanced graduate certificate and then toward a master's degree. Receipt of the initial credential (the badge) may motivate students to continue toward completion of the certificate or degree.

A number of SUNY campuses award badges for student participation in extra-curricular activities or to recognize meritorious achievement. The Task Force recommends that campuses should be careful to differentiate between badges that represent completion of learning outcomes (the focus of this report) and those that reflect service.

Stackable Credentials

Stackable credentials can be earned over time and serve as a bridge or ladder to advance individuals toward a degree, further career goals, or open up new job opportunities. Unlike the transition from the associate degree to the baccalaureate, stackable credentials are generally offered in smaller pieces, on flexible schedules, and via non-traditional modalities. Credentials can be stacked on top of one another to achieve the student's overall goals.

For Credit

Stony Brook University, as noted above, has developed a program of stackable credentials using badges (http://www.stonybrook.edu/spd/badges/index). For example, Stony Brook's "*Corporate Financial Management Badge*" is comprised of two courses: FIN 552 Mergers & Acquisitions; and, FIN 536 Financial Management, for which students earn graduate credits. The badge can stand on its own or stack toward a finance or MBA degree. Students not in Stony Brook's Finance AGC or MBA program need consent of the program director to register.

Another example from Stony Brook is its Higher Education Management & Operations badge. Students take HEA 503 Leadership in Higher Education and two of the following: HEA 524 Enrollment Management; HEA 531 Finance Issues in Higher Education; or HEA 532 Facilities Management in Higher Education.

As these courses are part of approved degree programs, much in the way a minor would be developed, they do not require NYSED registration. However, the Task Force does strongly recommend that campuses consult with their liaison in the SUNY System Program Review and Planning Office when developing micro-credentials, as discussed in Section VII of this report.

Noncredit-to-Credit Pathways

Some stackable credentials provide pathways from noncredit to credit, allowing students to develop competencies within industry-related areas and then continue on in a degree program.

Noncredit micro-credentials are best developed with consultation between continuing education professionals and faculty in the relevant field, with input from industry or community partners. To that end, existing SUNY policy expects academic consultation and shared governance procedures for noncredit courses and credentials that articulate to a credit-bearing course or credential. The initial determination of whether a micro-credential may be credit-bearing must be determined by faculty in the relevant field. If the credential is thus determined to be credit-bearing, then ultimate approval of the course or credential should emanate from a curriculum committee or similar academic governance body.

SUNY Campus examples of noncredit-to-credit articulation follow. Note that these could also be classified as a career pathway approach to micro-credentials:

1. At SUNY Orange, after successful completion of the A+ Computer Repair Technician curriculum and obtaining industry certification, there is an articulation with the Applied Technician Department to receive college credit.

2. Certified Production Technician is approved for three credits in SUNY Ulster's Industrial Design and Manufacturing Certificate program.

3. SUNY Sullivan developed and piloted a Hospitality Bridge program with a 2015-16 SUNY Workforce Development demonstration grant. The hospitality faculty have proposed that graduates of that program be granted one credit if they subsequently matriculate into a hospitality-related certificate or degree program at Sullivan.

4. At Dutchess Community College, there is an articulation agreement for the HSE Construction Skills Program for four credits into the Associate Degree Construction Management Program provided the students complete the skills certificate.

Many SUNY institutions have articulation agreements with BOCES, which grant credit for noncredit work assessed by faculty to be equivalent.

Massive Open Online Course (MOOC)

According to Educause, a massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. SUNY has established a relationship with Coursera to support faculty interested in offering MOOCS, see: https://www.coursera.org/suny; and, (http://commons.suny.edu/opensuny/mooc-faq/).

For example, a group of six University at Buffalo professors partnered with the Chicago-based, public/private partnership, Digital Manufacturing and Design innovation Institute (DMDII), to design a "*Digital Manufacturing & Design Technology Specialization*" delivered by MOOC. This 10-course MOOC, which students can take in the suggested order or as they prefer, includes a series of project-based assignments. Participating students receive a course completion designation that can be featured in a resume or LinkedIn.

UB describes the specialization as appropriate for a wide audience, "Whether you're a high school graduate exploring manufacturing careers, or an operations manager hungry for an understanding of the newest manufacturing technologies, this specialization will provide a foundation in how digital advances are changing the landscape and capabilities of factories. Ten courses – developed with input from the manufacturing industry – touch on digital manufacturing and design practices, the concept of the digital thread, the Internet of Things and Big Data."

Another example of a noncredit MOOC micro-credential at SUNY is Buffalo State College's, "*Ignite Your Everyday Creativity*." The six-week program recognizes: "Creativity is an essential skill for the 21st Century that is innate in all people and can be nurtured. We constantly need new and better ideas for almost every aspect of our professional and personal lives. The goal of this course is to help you recognize, develop and act upon the creativity that you already possess... Upon completion of this course participants will: Recognize the inherent creativity in yourself and others. Identify characteristics of a creative person that relate to yourself. Develop creative problem-solving skills using the basic elements of the creative process. Examine qualities of a creative environment in real world settings. Evaluate an idea using the creative product criteria." Participating students receive a completion designation that can be featured in a resume or LinkedIn.

Licensure

In general, micro-credentials are not licensure qualifying, meaning they don't lead to initial state licensure in a profession. However, micro-credentials may help support ongoing requirements for maintaining licensure, for example, in meeting continuing education requirements for a given profession. In general, these types of credentials undergo professional body review for Continuing Education Unit worthiness. Campuses are encouraged to confer with the professional body and/or NYSED Office of the Professions.

Prior Learning Assessment and Micro-credentials

Prior learning assessment is an academic process whereby verifiable learning acquired outside of traditional learning environments is assessed for college-level credit. There are many methods that can be used to assess prior learning, such as:

- Standardized examinations (e.g., CLEP, AP, DSST);
- Military training and occupations evaluated by the American Council on Education (ACE);
- Industry training, certifications and licenses evaluated by ACE, National Credit Recommendation Service (NCCRS), or regionally accredited institutions;
- Individualized portfolio assessment conducted by faculty at an institution; and
- Challenge examinations developed and assessed by faculty at an institution.

These approaches can also be used to evaluate learning acquired through micro-credentials not already assessed for college credit. A prior learning assessment process could be employed to assess micro-credentials to determine the level of learning, title of learning, credit amounts and any other designations appropriate to the learning (e.g., liberal arts, advanced level).

The process by which prior learning assessment is conducted should be approved through campus shared governance decision-making.

Industry Recognized Credentials

Industry recognized credentials are a type of micro-credential that can be incorporated into relevant degree programs to add even more value to applied degrees and give students additional portability of learning outcomes mastery.

These micro-credentials are sought out by employers because they illustrate that students have attained skills and knowledge that are verified by an assessment created by professionals in the designated field. Students who attain these credentials illustrate that they have mastered professional competencies and colleges with high pass rates are viewed favorably by industry. In many cases, faculty who have worked in industry bring these opportunities to students as they recognize that attainment of these certifications gives students an advantage in the job search.

For example, Alfred State faculty in many areas provide students with the opportunity to gain industry certifications during their course of study. In the trades, welding students can complete both level 1 and 2 from the American Welding Society and automotive students can gain American Service Excellence (ASE) Certification. Students at both associate and baccalaureate level in Computer Information Technology can gain a broad range of certifications including A+, Net+, CISCO, Microsoft, JAVA, CIW Web, CompTIA+, and COMP TIA NW+. Finally, students in the civil engineering department can gain entry level certifications in both surveying and construction management. In each case, employers can be confident that Alfred State students have knowledge and skills that are critical to success in the industry.

Several SUNY institutions accept evaluated credits for professional training, licenses and certifications that have been reviewed by the American Council on Education (ACE) (see http://www.alternativecreditproject.com/) and the National College Credit Recommendation Service (NCCRS) (see http://www.alternativecreditproject.com/). With an increased focus on preparing students for the workforce, there is a demand for integrating industry learning with higher education.

Many institutions nationally assess workplace training, certifications and licenses for college credit. SUNY Empire State College is one of six founding institutions for the Consortium for the Assessment of College Equivalency (CACE), which has developed standards for the assessment of workplace training and industry-recognized credentials for college credit. The college has many examples of assessing industry learning for credits and integrating these credits into the curriculum. At Empire State, these are called Professional Learning Evaluations (PLE).

V. HOW ARE MICRO-CREDENTIALS IN USE ACROSS SUNY NOW?

The Task Force conducted an informal survey of micro-credential offerings across SUNY campuses and found considerable variability. Some campuses focus on noncredit offerings, some on credit-bearing activity, and others on the articulation of noncredit to credit.

The following table summarizes the number of institutions across each sector offering various types of micro-credentials, based on campus responses (N=43):

Table 1: Number of Campuses within Sectors offering Micro-Credentials by Type

Total Institutions (N=43)	Industry Certifications (n=23)	Licensure Related (n=30)	Badges (n=3)	Noncredit Certifications (n=22)
Community Colleges (n=15)	11 (48%)	14 (47%)	0 (0%)	10 (45%)
Colleges of Technology (n=5)	4 (17%)	5 (17%)	1 (33%)	5 (23%)
Comprehensive Colleges (n=6)	3 (13%)	4 (13%)	0 (0%)	2 (9%)
University Centers (n=4)	2 (9%)	4 (13%)	2 (67%)	2 (9%)
Specialized Colleges (n=9)	3 (13%)	3 (10%)	0 (0%)	3 (14%)

As shown in Table 1, the majority of industry certification (both credit and noncredit) and licensure-related micro-credentials are offered through the community colleges, although these types of micro-credentials can be found in all sectors.

Campus respondents indicated that most industry certifications and licensure-related credentials are directly connected to credit-bearing academic programs. The number of campuses awarding badges, seems to be limited, with only three campuses (from two sectors) reporting these offerings.

Table 2: Micro-Credential Disciplinary Areas Reported by SUNY Campuses (n = 43)

Micro-Credentials Areas	Industry Certifications	Licensure Related	Badges	Noncredit Certifications
Accounting		3		
Building Trades	12			4
Business/Entrepreneurial			4	19
Computers, Networking, Engineering	12	4		7
Education	7	94	15	4
Engineering Fields		25		1
Health Care	16	71	1	10
Human Resources	1		2	2
Industry Trades, Technology and Adv. Manufacturing	17			16
Legal		1		3
Mental Health	3	9		1
Protective Services	5			9
Quality Control				8
Safety	3			8
Veterinary Sciences		4		18
Other		4		

As shown in Table 2, SUNY campuses offer micro-credentials across a wide range of disciplinary areas.

The most common areas for Industry Certifications are in Industry Trades (including technology and advanced manufacturing); Health Care; and Computers, Networking, and Engineering. The majority of licensure-related offerings are within Education and Health Care.

There are some licensure-related micro-credential offerings reported in the engineering fields. Noncredit certifications were most commonly identified in Business/Entrepreneurial, Industry Trades, and Health Care. Badges were most frequently reported in Education.

VI. HOW ARE MICRO-CREDENTIALS USED NATIONALLY?

The following is a sampling of how micro-credentials are currently being used across the country. It is by no means a comprehensive list, and is provided for informational purposes only. Similar types of offerings may be found across SUNY campuses.

University-Based

- The **University Learning Store** (http://universitylearningstore.org/) is a collaboration between the Georgia Institute of Technology; University of California, Davis; University of California, Irvine; UCLA; University of Wisconsin-Extension; and, University of Washington Continuum College.

  The University Learning Store offers skills-focused, noncredit, online learning credentials that each have required assessments. From *Communicating and Deliberating in Work Teams* to *Creating a Stakeholder Management Plan for Projects*, course options are grouped into the following categories: Power Skills, Technical Skills, Career Advancement, and Compliance (http://universitylearningstore.org/course/). Course-takers have the option to move straight to the assessment if they feel they have already mastered the competencies. The awarded credential, which can be accessed online and has a badge-like appearance, contains a detailed summary of the skill-sets mastered and feature the name of the partner university ordering the course.

  The University Learning Store offers two types of credentials, each available for $25: "verified competency," represents completion of one badge assessment, and "skills certifications," for completing a series of assessments (http://universitylearningstore.org/faqs/). College credit is not currently available.

- The **University of Utah's Degree Plus Certificates** are noncredit credentials designed to give graduates a skill-set outside of their degree program that can help distinguish them in the job market. The program webpage invites students to "take their history degree into the creative fields of web design or digital marketing," or to "discover that the interests that led you to a degree in English may also be a great match for a career in operations or project management (http://degreeplus.utah.edu/#programs)." Certificates are currently offered in the following areas: Data Analysis for the Modern Workforce; Instructional Design; Content Marketing and Management; Operations Analyst; and Digital Communication Tools for Creative Professionals.

  The program description for the Data Analysis for the Modern Workforce program, for example, notes that data analysis is a field unto itself, yet recognizes that being able to interpret and analyze data is considered a valuable skill in countless professions. The program runs for eight-weeks and includes a capstone project. Students who successfully complete the capstone

project and complete required one-on-one career counseling that advises them about how to use the credential will earn a digital badge that can be displayed on various social media platforms (http://degreeplus.utah.edu/certificate_programs/data-analysis/).

- Students in **Perdue University's online Master of Science in Education – Learning Design and Technology** have the opportunity to pursue a series of digital badges on specific technology tools either for credit via a special one week, full-day, three-credit course during the summer or noncredit on a self-paced basis. Badges are available on a wide range of technology tools including: Adobe Captivate and Premiere; Animoto; Camtasia; Evernote; iMovie; Mendeley; Poll Everywhere; Prezi; Socrative and more. The badges are kept in Passport, an e-portfolio system, and can be displayed in Mozilla Backpack, LinkedIn and Facebook (http://online.purdue.edu/ldt/learning-design-technology/digital-badges).

- Earning admissions to the **Illinois State Honors Program** grants students access to an electronic portfolio on Credly to showcase specific achievements and competencies (https://honors.illinoisstate.edu/opportunities/badging/). Designed to build skill level and motivate student progression, the badge program provides both stand-along and stackable value. For example, students earn badges for completion of specialized one-credit Presidential Scholar Seminars on such topics as: *Innovation and Inquiry*; *Interdisciplinary Investigations*; and *Leadership in Action* as well as completion of Honors Experiences on topics such as *Human and Computer Interaction*, and the L*egend of Faust*. Maintaining a certain GPA and completion of three Honors Learning Experiences earns a Program Scholar badge. Badges can also be earned for international travel, completing a series of Mindset seminars, and community service.

- The **University of Michigan** has named its digital badging program "Mblem" and it operates at the department or program levels. For example, the Engineering Program of M-STEM Academies developed a series of badges to "recognize, validate and share undergraduate engineering students' co-curricular learning…" (http://www.mblem.umich.edu/v/badges).

  The department defined eight broad categories of badges: community service, cross-cultural experiences, entrepreneurial mindset, ethics, intellectual curiosity, leadership, professional development, and science and engineering research (http://www.mblem.umich.edu/v/badges). Mblems are stackable and recognize different levels of competency. The badges are awarded after specific evidence has been presented—written, video, or other forms of reflection; badges link to that provided evidence. The University maintains a webpage for employers explaining their value (http://www.mblem.umich.edu/v/employers).

Non-Profit Partnerships with Higher Education

- **edX**, founded and governed by colleges and universities, is a non-profit entity that supports the offering of MOOCs on an open-access platform (https://www.edx.org/).

  According to its website, edX now offers over 1,300 humanities, mathematics, and computer science courses to more than 10 million individual leaders. Some courses are offered at specific times and others are self-paced. Some courses are credit-eligible, others lead to a verified digital certificate that can be included in a resume or on LinkedIn. In addition, EdX offers over 30 MicroMaster's programs—a name they have trademarked—that can be stacked toward a degree (often requires some onsite work at the instructing University).

  Among edX's 52 original founding university partners are MIT, Harvard, University of California Berkeley, the University of Texas System, Arizona State University, the University System of Maryland, and Cornell University. Membership has expanded to include dozens more U.S. and international universities as well as for-profit and non-profit partners who offer MOOCs including Amnesty International and Microsoft.

- The non-profit **Digital Promise** offers a series of micro-credentials targeted at educators that they categorize as "competency-based recognition for professional learning" (http://digitalpromise.org/initiative/educator-micro-credentials/). Each credential focuses on a single competency and includes a scoring guide for "evidence" that must be provided by the participant, including lesson plans, student-work samples, and/or classroom video.

  Digital Promise recently partnered with a number of Universities to "offer graduate level-credit for select micro-credentials." Participating universities include: Fresno Pacific University; Brandman University; Portland State University; University of the Pacific (https://bloomboard.com/microcredential/provider/ac2f23c8-274d-449d-ac3f-6ad29e399737).

  The Micro-Credential Advisory Board for Digital Promise includes representatives from Stanford, the Center for Teaching Quality, the Tennessee Department of Education and more.

For-Profit Offerings

Udacity is one example of many for-profit credential providers. Its inclusion here is provided for informational purposes to give a glimpse of the national for-profit environment for micro-credentials.

- If students earning a **Udacity Nanodegree Plus** credential (Udacity has copy-righted the term nanodegree) are not employed six months after graduation, they receive 100% of their tuition back. There are four qualifying programs: *Machine Learning Engineer*; *Full Stack Web Developer*; *Becoming an iOS Developer*; and *Data Analyst*. All Udacity nano-degree programs are co-created via partnerships with two- to three- well-known industry partners such as Google, Facebook, Amazon, IBM, nvidia, and DiDi (https://www.udacity.com/nanodegree/plus).

  Successful completion of one of the Nanodegree Plus programs earns students a job-ready project portfolio and a "verified nanodegree credential." There are some pre-requisites and requirements to qualify for the plus guarantee including beginning experiences in the programming language Python as well as Git for version control (if you don't have that experience Udacity offers options for getting it), a computer with a broadband connection, and English fluency. There are also terms and conditions related to the rigor of the participant's job search (https://www.udacity.com/nanodegree/plus).

  Udacity offers a range of non-Plus programs as well, both full-immersion and self-paced programs, as well as project-based free courses (https://www.udacity.com). Udacity posts a candidate profile for each student noting their credentials and linking to work product that can be accessed by potential employers through Talent Source, a proprietary directory (http://blog.udacity.com/2016/04/how-your-new-udacity-profile-can-get-you-a-job.html).

VII. BEST PRACTICES TO CONSIDER WHEN DEVELOPING MICRO-CREDENTIALS

According to the American Council on Education's report *Quality Dimensions for Connected Credentials (*http://www.acenet.edu/news-room/Documents/Quality-Dimensions-for-Connected-Credentials.pdf), the six dimensions of quality that support connected credentials are the inter-related concepts of: transparency, modularity, portability, relevance, validity, and equity, which the Task Force has summarized below:

- **Transparency** - This includes, for the benefit of a perspective employer and the student, clearly defining competencies (knowledge and specialized skills, soft skills (written and verbal communication, teamwork, independent work, research, etc.). In addition, all

possible connections from this credential to others offered should be highlighted, i.e. a path to earn credit, a path to another credential, entry into a degree program, etc.

- **Modularity** – The important feature that the credential can be stackable, that new credentials can be added to offer value. This raises the issue of motivation; clearly defining measurable milestones for students who are considering the micro-credentialing process in advance helps them to understand and appreciate accomplishments.

- **Portability** – Portability is essentially effort to ensure that the credential has value locally, nationally and/or beyond.

  Within SUNY, the Task Force notes that the articulation of noncredit to credit needs to involve the evaluation of learning outcomes, i.e., not be awarded for the experience alone. The process for articulating noncredit to credit is an academic process and should be conducted through established shared governance procedures within the institution. The transferring of credit or noncredit micro-credentials follows *SUNY Policy 1008 Transfer and Articulation* and *MTP 13-3 Seamless Transfer*.

- **Relevance** – One of the key discussions of the Task Force was that micro-credentials at SUNY should be *meaningful*, providing benefit to students that helps them to advance their educational, professional and/or life goals. SUNY micro-credentials should add sufficient value that they are respected and recognized by relevant stakeholders, from the campus community to perspective employers.

- **Validity** – Development of micro-credentials must take into consideration the means by which validity can be confirmed; much in the way that employers or academic institutions seek to confirm degree attainment, micro-credentials must also be verifiable. In the discussion above on badges, the inclusion of meta-data and links to the institution are listed as ways to establish both relevance and validity. For other types of micro-credentials, there should be documented assessment of learning outcomes and means of assessment. The ACE report, *Quality Dimensions for Connected Credentials,* also recommends consideration of what it refers to as predictive validity and concurrent validity. ACE definitions are provided here for reference:

  - **Predictive Validity**: "There is evidence that the claims made by the credential have been borne out in reality. This means that there is evidence that the assessments for attaining the credential accurately predict an individual's ability to do something in the future, on the job, or in a community of practice. Evidence of predictive validity is typically gathered by studying whether individuals who earn a passing score on an

assessment or who earn the credential actually know or can actually accomplish what was claimed."

- **Concurrent Validity**: "There is parallel evidence supporting the claims made in the credential. Evidence of concurrent validity is typically gathered by looking at other sources of evidence that the individual knows something documented in an assessment and/or can carry out the job claimed by the credential."

- **Equity** – Because micro-credentials can be used as a means to provide a pathway into for-credit coursework and/or job advancement, there should be appropriate supports to ensure that *all* students have an equal opportunity to succeed.

The Task Force offers the following additional guidance regarding transparency and portability for SUNY micro-credentials:

- **Tuition –** For credit-bearing micro-credentials, tuition will be charged at the current approved rate for all other credit-bearing offerings. For noncredit micro-credentials, tuition is charged based on standard noncredit practices at the campus. Total costs should be made public and easily accessible.

- **Transfer –** The articulation of noncredit to credit needs to involve the evaluation of learning outcomes and not be awarded for experience alone. The process for articulating noncredit to credit is an academic process and should be conducted through established shared governance procedures within the institution. The transferring of credit or noncredit micro-credentials follows *SUNY Policy 1008 Transfer and Articulation* and *MTP 13-3 Seamless Transfer*.

- **Transcripts** - Issues of transcript development for micro-credentials and industry recognized credentials, as well as noncredit to credit pathways need to be addressed to facilitate portability of these credentials. New initiatives have been launched by a variety of colleges and universities across the nation for the purpose of developing a comprehensive student record (CSR), a digitized format that aims to expand beyond the traditional chronological transcript record of course titles, credits, and grades by documenting validated evidence of a student's learning outcomes, competencies, and related learning outside the classroom. Appendix B highlights multiple examples for review.

- **Marketing** – Because of the varying definitions around micro-credentials, campuses should strive for clarity and transparency in its marketing efforts. Policies, procedures and criteria applied to micro-credentials such as fee structure, any pertinent financial aid information should be accurately described, fully disclosed and prominently

available to prospective and enrolled students, as well as faculty and staff involved in the assessment process, and be included in academic catalogs and college websites.

VIII. PROGRAM APPROVALS AND MICRO-CREDENTIALS

Since all academic offerings—credit, noncredit, full programs, or partial programs—are subject to SUNY Board of Trustees policy, New York State and federal laws and regulations, and regional accreditation standards, care must be taken in their development and implementation.

As a general principle, campuses should keep their liaison in the SUNY System Program Review and Planning Office (http://system.suny.edu/academic-affairs/acaproplan/app/find-your-campus-reviewer/) apprised of their plans to develop and offer micro-credentials. The program reviewer can provide support to campus faculty, staff, and administration.

For the most part, review and approval of noncredit micro-credentials is largely local, but should adhere to campus shared governance procedures for approval as well as course evaluation and prior learning assessment protocols, and should be entirely consistent with SUNY policies and state and federal regulations.

In most cases, for-credit micro-credentials can be treated in the way that development of a minor would be treated; which does not require extended approvals. However, since credit-bearing micro-credentials represent a subset of courses that may contribute toward the partial completion of one or more formal curricula (that is, a set of registered educational requirements in either a Certificate or Degree program), care must be exercised in determining potential issues, especially with respect to student financial aid eligibility, academic advisement, credential title, and advertising.

IX. RECOMMENDATIONS

1. **The System Provost should encourage and support campus development of micro-credentials consistent with the core principles identified in this report**:

   - Academic quality is paramount for micro-credentials, and faculty governance participation is required;
   - Micro-credentials should be initiated, developed, and approved according to local campus missions, policies, strengths, and guidelines.
   - Micro-credentials designed to meet market needs should be informed by data from appropriate markets and align with industry standards.
   - Micro-credentials should provide opportunities for industry connections and partnerships.

- Micro-credentials should be flexible and innovative and planning should ensure their portability.
- Micro-credentials should be stackable.
- Registrars and other appropriate personnel should explore a system-wide approach to digital transcripts that include micro-credentials.
- Guidelines should be delineated for the development, use, transfer, and portability of digital badges.

2. **Campuses should develop criteria for a process by which micro-credential articulations may be developed, and the role which shared governance should play in this process. Consideration might be given to articulating:**
   - existing noncredit into existing credit courses;
   - existing noncredit into new credit courses;
   - new noncredit into existing credit courses; and
   - new noncredit into new credit courses.
3. **Strong partnerships between Continuing Education/Workforce Development and Academic Affairs may be necessary to achieve optimum results in the development of certain micro-credentials. Examples of issues to consider include:**
   - Assessment of student learning outcomes and alignment of these between noncredit and credit.
   - Establishment of business/financial guidelines to ensure financial viability and program sustainability and renewal.
   - Identification of the role of noncredit instructors and campus faculty in the determination of noncredit to credit micro-credentials, involving shared governance where appropriate.
   - Guidelines and standards for faculty and curriculum that are consistent across the institution, as called for by MSCHE.
   - Inclusion of industry standards in the assessment of programs which are linked to industry recognized credentials.
   - Business and industry involvement as a part of development, assessment, and ongoing support of such programs.

4. **Campuses are encouraged to consider the six dimensions of quality that support connected credentials as described in this report and by the American Council on Education's document *Quality Dimensions for Connected Credentials*: transparency, modularity, portability, relevance, validity, and equity. In both attracting students and in verifying the credentials, campuses must provide clarity for students around tuition, financial aid, learning outcomes, assessments, and any connection to other credentials.**

5. **For purposes of clarity and transparency across the SUNY System, campuses are encouraged to consider the *Recommended SUNY Definition of Micro-Credentials* (and associated definition of terms provided in this document):**

   Micro-Credential: Micro-credentials verify, validate and attest that specific skills and/or competencies have been achieved and are endorsed by the issuing institution, having been developed through established faculty governance processes and designed to be meaningful and high quality. Micro-credentials may represent the content of credit or noncredit study; they may take the form of a digital badge, MOOC, or micro-award and be offered online, on-campus, or a hybrid of both. Micro-credentials may be specifically recognized by certain industries, in which case they may have the advantage of providing validation and attestation of industry-specified and frequently highly sought-after competencies. Each micro-credential awarded must be represented clearly and accurately, addressing all associated costs, financial aid, transferability, and applicability (e.g., stack-ability) toward a formal award(s) (i.e., registered degree, certificate). Micro-credentials can be used to highlight competencies earned as part of a credit-bearing program (motivating students to persist and distinguishing students among prospective employers); serve as an introduction or entry point to a degree program (stackable); or be issued as a stand-alone credential and/or one complementary to a degree program (an English major may benefit from a micro-credential in computer science; a computer science major may benefit from a micro-credential in business writing, etc.).

6. **While there is local flexibility in developing micro-credentials, campuses are strongly encouraged to seek support and counsel from their liaison in the System Program Review and Planning Office (http://system.suny.edu/academic-affairs/acaproplan/app/find-your-campus-reviewer/) when planning micro-credentials.**

7. **In the course of its work, the Task Force assigned a sub-committee to review and identify existing System, campus, or federal policies that may provide a barrier to campus development of micro-credentials. Upon review of the sub-committee's work, the Task Force recommends that the Provost consider a formal policy review process to include a System-wide Task Force or Committee with representation from faculty and student**

governance and an open-comment period for any proposed policy revision, for the following SUNY Trustee policies:

- 1305 Credit/Contact Hour - The policy is centered on the framework of the Carnegie Unit and time. Possible revisions for consideration include the introduction of language on learning outcomes and competencies as a function of the awarding of credit.

- 1301 Continuing Education Unit - Possible revisions for consideration include the introduction of language that CEUs and other credentials be vetted through the awarding institutions' shared governance process in order to enable the creation and conferral of micro-credentials that award CEUs as well as college credit.

- MTP 13-3 Seamless Transfer - Possible revisions for consideration include language to specifically note what the Provost has already indicated; that transferring of for-credit or noncredit micro-credentials follows *SUNY Policy 1008 Transfer and Articulation* and *MTP 13-3 Seamless Transfer*.

- 1300 Award of Academic Credit by Evaluation – As prior learning assessment can be used to evaluate learning acquired through micro-credentials not already assessed for college credit, the Task Force has reviewed the Report of the SUNY TAACCT Grant Prior Learning Assessment Advisory Board and found several of relevant recommendations. The Task Force recommends that this report be assessed and reviewed via a formal policy review process.

8. **Further, the Task Force recommends that SUNY join in efforts to advocate for the consideration of micro-credentials as allowable activities for the purposes of state and federal financial aid.**

9. **The System Provost should charge the SUNY Faculty Advisory Council on Teaching and Technology (FACT2) with development of a readiness assessment and resources to support faculty in the development and successfully delivery of micro-credentials.**

10. **In the interests of accountability, transparency and portability of micro-credentials, it is essential to communicate and report the development of these at a System level. It is recommended that reporting structures in SIRIS be developed to ensure consistency of data definitions and facilitate reporting.**

APPENDIX A: GLOSSARY OF TERMS

The Task Force worked on the development of a common set of definitions around micro-credentialing, building on the quality work of the Lumina Foundation and others[2].

- **Badge**: use of digital technologies to represent competencies and various learning achievements; electronic badges should include meta-data on the evidence of learning and link back to sponsoring institution and evaluation criteria.
- **Certificate**: a credential issued by an institution in recognition of the completion of a curriculum that usually represents a smaller domain of knowledge than established degrees. Credit bearing certificates must be approved by SUNY and registered with the State Education Department. These certificates typically contain fewer credits than a degree program. All credits must be applicable toward a degree program at the issuing institution. Noncredit certificates need no external approval and must be identified as such.
- **Certification**: mastery of or competency in specific knowledge, skills or processes that can be measured against a set of accepted standards, usually established by a recognized entity such as NYSED in the case of licensure requirements or an industry organization such as Microsoft.
- **Competency**: Learnable, measurable and/or observable knowledge and skill-sets gained;
- **Degree**: title given by an institution (usually a college or university) that has been granted the authority by a state, a recognized Native American tribe, or the federal government to confer such credentials. A degree represents satisfactory accomplishments within an accepted body of knowledge.
- **Infrastructure**: including but not limited to student support systems, transcripting, student information systems, assessment, marketing, fee structures, portability: the credential has value locally, nationally and perhaps internationally in labor markets, education systems, and/or other contexts.
- **License**: legal permission, typically granted by a government agency, to allow an individual to perform certain regulated tasks or occupations. Licenses are based on pre-determined, standardized criteria, involving educational programs of study, assessments, and/or work experience and are time-limited requiring periodic review and renewal.
- **Learning Outcome**: that which a learner is expected to know, understand, or be able to do after successful completion of a planned process of learning.

[2] All definitions are based on Lumina/Connecting Credentials, save certificate (New York State Education Department); and MOOC (Educause)

- **Micro-credential**: Micro-credentials verify, validate and attest that specific skills and/or competencies have been achieved and are endorsed by the issuing institution, having been developed through established faculty governance processes and designed to be meaningful and high quality. Micro-credentials may represent the content of credit or noncredit study; they may take the form of a digital badge, MOOC, or micro-award and be offered online, on-campus, or a hybrid of both. Micro-credentials may be specifically recognized by certain industries, in which case they may have the advantage of providing validation and attestation of industry-specified and frequently highly sought-after competencies. Each micro-credential awarded must be represented clearly and accurately, addressing all associated costs, financial aid, transferability, and applicability (e.g., stack-ability) toward a formal award(s) (i.e., registered degree, certificate). Micro-credentials can be used to highlight competencies earned as part of a credit-bearing program (motivating students to persist and distinguishing students among prospective employers); serve as an introduction or entry point to a degree program (stackable); or be issued as a stand-alone credential and/or one complementary to a degree program (an English major may benefit from a micro-credential in computer science; a computer science major may benefit from a micro-credential in business writing, etc.).

- **MOOC**: A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance.

- **Qualification**: the formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards (e.g. European Qualifications Framework)

- **Stackable Credential or Career Pathway**: part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help that individual move along a career pathway and further education.

- **Transparency**: easy to understand and compare, clear learning outcomes and/or competencies.

Examples of Trademarked Micro-Credential Titles

- Udacity owns the trademark for Nanodegree.

- The nonprofit edX, founded by MIT and Harvard University to deliver online courses by a consortium of colleges, applied for a trademark on the word MicroMasters.

- MicroDegree is trademarked by Edevate.

APPENDIX B: ELECTRONIC TRANSCRIPTS

Work underway at eleven colleges/universities selected to participate in the comprehensive student record project, funded by a grant from the Lumina Foundation and directed by AACRAO (American Association of College Registrars and Admissions Officers) and NASPA (Student Affairs Professionals in Higher Education), showcase sample prototypes for documenting in a reliable, verifiable way student learning, competencies, and experiences from a variety of learning venues. Prototypes like these should facilitate the further work that is needed to document and incorporate validated evidence of student learning that results from completion of micro-credentials, industry recognized credentials and related noncredit to credit pathways programs. Summaries of six of the individual projects developed by selected institutions participating in the comprehensive student record project are detailed below.

1. **Borough of Manhattan CC (BMCC)** has developed a co-curricular transcript, which is validated by the Division of Student Affairs. The supplemental transcript includes individual student participation in activities categorized under Athletics; Clubs or Organizations; Community Service; Honor and Awards; Leadership Training; Workshops and Seminars. In the future, the institution plans to investigate how to be more granular about skills developed in each of the designated categories.

2. **University of Central Oklahoma** (UCO) has been working on the development of a "second transcript" that is designed to record students' growth and learning beyond aptitude in their major. Called the Student Transformative Learning Record (STLR), the purpose of the transcript is to track, document and verify student learning across five of the institution's Six Core Value Tenets. The first five value tenet are Global and Cultural Competencies; Health and Wellness; Leadership; Research, Creative and Scholarly Activities; and Service Learning and Civic Engagement. The sixth Tenet, Discipline Knowledge, is recorded in the traditional academic transcript. Students have a mobile student dashboard on which they can track their own badging achievement in each of the core tenets, Data are backed up by faculty and staff assessment of the transformative experiences. The assessments are based on AACU's Value rubrics.

3. **Elon University** has transformed a longstanding co-curricular transcript by building, with the assistance of the software vendor Parchment, a user-friendly visual co-curricular transcript, a web platform where student information and experiences can be uploaded as an Excel spreadsheet to create a PDF infographic. Each experience has a code and associated icon. The front page of the visual transcript uses those icons to present a summary of each experience, and the second page presents that data as a visualization. The goal is to make the visual transcript something that is easily digestible for readers as well as sharable via social media.

4. **University of Maryland University College**, an online state university, is developing a competency-based, visual record of performance; an extended transcript that can be shared with and understood by employers. The new transcript reflects UMUC's curriculum, which focuses on program-level professional skills and goals, not individual courses. Rather than documenting the classes a student took and the grades earned, the record describes and contextualize a student's knowledge, giving specific evidence of learning in particular areas. UMUC's curriculum consists of program-level competencies, which are further broken down into specific skills and abilities. Courses then require projects and simulations where students must demonstrate those competencies, with assessments that aim to replicate what students will experience in the workforce. Students are responsible for incorporating faculty feedback and resubmitting. The goal is mastery of learning; students cannot pass until they've mastered the competencies associated with a project. The associated learning artifacts—projects, papers, speeches will be archived in the student record, beginning in fall 2017. To leverage resources, UMUC worked closely with the University of Wisconsin-Extension, another institution involved in the comprehensive student record project, to develop access to the record. Both schools serve similar student populations, have the same learning management system, and will deliver the transcript as a digital webpage from which the viewer can link through to many different portals, rather than a piece of paper.

   Over the last 18 months, UMUC worked with IMS Global on CBE (competency based education) and digital credentialing and is now working with the recent Cengage acquisition Learning Objects Inc. to create the visual extended transcript with an appropriate learner interface.

5. **University of South Carolina** has an extended transcript project, "Beyond the Classroom Matters," involving staff from student affairs, academic affairs, information technology, and the registrar's office. Staff from these areas built a catalog of "Beyond the Classroom" learning programs, including community service, undergraduate research, career coaching, supplemental instruction, leadership experiences, and peer education. Each program is aligned with high impact practices and the educational purpose of each activity is clearly defined in the new database. This catalog has a web interface through which student participation is recorded.

6. **Stanford University** has developed a "certified electronic certificate" which includes in a digital format the skills/outcomes achieved by the student allowing employers or other colleges to see at a glance what capacities the student has developed and where he or she learned them. Using a digital file with an electronic signature, students are able to convey their credentials to prospective employers and to share them on career-building sites. The PDF certificate contains a data file that articulates the program and course

learning outcomes. Stanford officials are currently working with PESC, Postsecondary Electronic Standard Council, to establish a credential standard.

Other noteworthy efforts include the Lumina Foundation's *Connecting Credentials* initiative (www.connectingcredentials.org). In addition, several other vendors and nonprofits have done extensive work with digital repositories for student knowledge including efforts by: Parchment; the National Student Clearinghouse and Student Labs; Merit Pages; Degreed, a learning portal company; and, Mozilla Foundation's Open Badges.

APPENDIX C: RESOURCES

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- Lumina's Connecting Credentials website contains a good repository of resources: http://connectingcredentials.org/
- Credential Engine (grew out of the Credit Transparency Initiative) is a 501C3 non-profit organization whose mission is to: "improve transparency in the credentialing marketplace." They maintain an open-licensed, "Credential Registry (CR) and Credential Transparency Description Language (CTDL)." http://www.credentialengine.org/

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