

# Arizona State University

## Academic Strategic Plan Archive

### For 2020-2021 Planning



This document provides an archival record of the Arizona State University academic strategic plan addendum submitted during the 2019-2020 academic year for 2020-2021 planning. The Arizona Board of Regents Academic Strategic Plans Policy (2-223) states that this institution is required to submit an annual strategic plan for approval, which includes new academic programs, certain program eliminations and organizational unit changes. Other changes are reviewed as part of ASU's internal academic plan.

Note: Inclusion in this document does not indicate that the program or change has been approved by the university. This document only notates programs and changes which were approved for the 2020-2021 planning process.

## **About this Document**

To navigate this version of the Academic Strategic Plan Archive, refer to the table of contents and the bookmarks provided. The table of contents provides a hyperlinked listing of resources in the order in which they appear in this document. Keyword searches may be employed as an additional means of locating resources within this document.

## Table of Contents

<b>ABOR Academic Plan.....</b>	<b>4</b>
Executive Summary, November 2019 .....	4
Academic Degree Programs, November 2019 .....	6
Executive Summary, April 2020 .....	55
Academic Organizational Unit, April 2020.....	57
Program Changes Requiring ABOR Executive Director Approval .....	63

## EXECUTIVE SUMMARY

**Item Name:** Request for New Academic Programs for Arizona State University

☒ Action Item

**Requested Action:** Arizona State University asks the board to approve the new program requests effective in the 2020-2021 catalog year.

### Background/History of Previous Board Action

As provided in the board policy, new program requests may be submitted throughout the year with the approval of the Academic Affairs and Educational Attainment Committee.

### Discussion

Arizona State University seeks to add new programs for implementation in the 2020-2021 Academic Year. This request is for new academic programs:

- Master of Science in Clinical and Translational Science
- Doctor of Philosophy in Manufacturing Engineering
- Master of Science in Public Interest Technology
- Master of Science in Genetic Counseling
- Master of Science in Complex Systems Science
- Bachelor of Science in Operations Management and Technology
- Bachelor of Science in Dietetics
- Bachelor of Science in Food and Nutrition Entrepreneurship
- Bachelor of Arts in Digital Media Literacy

Degree planning at ASU is founded on the Charter: ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

All academic degree programs go through multiple review and approval processes to ensure their currency, quality, and relevance. Each year, the Provost initiates the academic planning process. The academic deans, in consultation with the directors of the academic units, submit information on all proposed new degrees, concentrations,

### Contact Information:

Mark S. Searle, Provost  
Chad Sampson, ABOR

[mark.Searle@asu.edu](mailto:mark.Searle@asu.edu)  
[chad.sampson@azregents.edu](mailto:chad.sampson@azregents.edu)

480-965-9585  
602-229-2512

## **EXECUTIVE SUMMARY**

---

minors, and certificates for the ensuing year, as well as changes to existing degree titles, program disestablishments, and creation of new organizations, organizational changes and disestablishments. Once reviewed and approved by the Provost, these initiatives begin the review process, including, as applicable, the curriculum committees in the academic unit, college, Graduate College, and University Senate. At each level, a substantive review of the proposed program is completed to ensure quality and to avoid redundancy with other programs. At any step in the approval process, programs can be tabled and/or returned to the academic unit for further clarification and/or revision.

The Provost reviews all resources involved in program development, both in the college offering the degree program and other colleges offering supporting courses. The distribution of the institution's resources, including faculty, infrastructure, administration and support staff, are reviewed to optimize and maximize capacity. In addition, the university invests annually in academic units based on enrollment growth. In fall 2020, for example, the university will invest \$7.6M in enrollment growth funding, allowing academic units to expand capacity, and additional funds will be invested in strategic hiring. The academic units are also receiving increasing revenue from summer and online operations which provides resources for the initiatives.

The new degree programs advance translational science, engineering, technology genetics, complex systems, operations management, nutrition and dietetics, and digital media. In keeping with the 2019 Operational and Financial Review Enterprise Plan, the degree proposals are aligned strategically with our design aspirations to leverage our place, transform society, value entrepreneurship, include use-inspired research, enable student success, fuse intellectual disciplines, be socially embedded, and engage students with issues locally, nationally and internationally.

### **Committee Review and Recommendation**

The Academic Affairs and Educational Attainment Committee reviewed this item at its November 7, 2019 meeting, and recommended forwarding the item to the full board for approval.

### **Statutory/Policy Requirements**

ABOR Policy 2-223.A, "The Academic Strategic Plan"

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Proposed New Programs</b>	<b>Degree</b>	<b>College/School</b>	<b>Page Number</b>
<b>Graduate Programs</b>			
Clinical and Translational Science	MS	Edson College of Nursing and Health Innovation / College of Health Solutions	4
Manufacturing Engineering	PhD	Ira A. Fulton Schools of Engineering	8
Public Interest Technology	MS	School for the Future of Innovation in Society	13
Genetic Counseling	MS	College of Health Solutions	20
Complex Systems Science	MS	The College of Liberal Arts and Sciences	26
<b>Undergraduate Programs</b>			
Operations Management and Technology	BS	Ira A. Fulton Schools of Engineering	31
Dietetics	BS	College of Health Solutions	37
Food and Nutrition Entrepreneurship	BS	College of Health Solutions	42
Digital Media Literacy	BA	Walter Cronkite School of Journalism and Mass Communication	47

## EXECUTIVE SUMMARY

### New Academic Program Request

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Master of Science in Clinical and Translational Science
<b>Academic Department:</b>
Edson College of Nursing and Health Innovation and College of Health Solutions
<b>Geographic Site:</b>
Downtown Phoenix Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
36
<b>Proposed Inception Term:</b>
Spring 2021
<b>Brief Program Description:</b>
<p>The Master of Science in Clinical and Translational Science will provide education for practicing clinicians and health leaders to advance clinical and translational research. The Edson College of Nursing and Health Innovation and the College of Health Solutions will jointly advance education, collaboration, research, and leadership in clinical and translational science through existing strengths and expertise. This degree will increase the number, quality and diversity of clinical and translational researchers, promote research and intellectual exchange among diverse professionals, and advance health care research priorities. The MS Clinical and Translational Science supports ASU's mission of advancing research and assuming fundamental responsibility for the overall health of the communities it serves through graduate-level education of health care professionals to design, implement, evaluate, and disseminate research to improve health outcomes of individuals, systems, and populations.</p>
<b>Learning Outcomes and Assessment Plan:</b>
<p><b>Learning Outcome 1:</b> Graduates will be able to employ principles of scientific inquiry to identify and evaluate gaps in current literature and develop research questions that address a real-world clinical problem.</p> <ul style="list-style-type: none"><li>• <b>Concepts:</b> Principles of scientific inquiry, strategies to identify and evaluate studies in a specialized literature.</li><li>• <b>Competencies:</b> Ability to perform a literature search, summarize literature findings, identify gaps in literature to solve a real-world clinical practice or healthcare problem.</li><li>• <b>Assessment Method:</b> Written Assignment 1: Course MSCT 52X Students in the MS Clinical and Translational Science will demonstrate mastery of the principles of</li></ul>

## EXECUTIVE SUMMARY

scientific inquiry by completing an exhaustive literature search to identify gaps in actual clinical practice or healthcare settings through a case study assignment. Written Assignment 2: Course MSCT 52X. Students will demonstrate the application of findings of their literature review to identify gaps in the literature that can improve clinical practice or healthcare outcomes.

- **Measure:** Rubrics will be utilized to evaluate students' ability to demonstrate the competencies identified to meet Outcome 1. Annual review of outcomes will be completed and utilized for continuous course improvement. The curriculum will be refined based on measures of the student's ability to apply their findings and develop a literature review that describes solving a real-world clinical practice or healthcare problem.

**Learning Outcome 2:** Graduates will be able to apply clinical research methodology to design and implement an intervention study that addresses a gap in the literature to address a real-world clinical practice or healthcare problem.

- **Concepts:** Clinical research methodology, research study design.
- **Competencies:** Ability to design an intervention study protocol.
- **Assessment Method:** Written Assignment 1 in Course MSCT 53X. Students in the MS Clinical and Translational Research degree will demonstrate the ability to write and present their research questions, data collection and analysis strategies. Written Assignment 2 in MSCT 53X. Students in the MS Clinical and Translational Science degree will demonstrate the ability to present their research questions, data collection and analysis methodology for an intervention project that addresses a clinical problem in a specific health care setting.
- **Measure:** Rubrics will be utilized to evaluate students' ability to demonstrate the competencies identified to meet Outcome 2. Annual review of outcomes will be completed and utilized for continuous course improvement. The curriculum will be refined based on measures of the student's ability to apply clinical research methods to address a real-world clinical problem.

**Learning Outcome 3:** Graduates will be able to disseminate research findings in clinical and translational science through a peer-reviewed publication.

- **Concepts:** Writing research findings for publication and dissemination purposes.
- **Competencies:** Ability to prepare a manuscript for an identified peer-reviewed journal that aligns with their area of research in clinical and translational science.
- **Assessment Method:** Written Assignment 1 in Course MSCT 54X. Students in the MS Clinical and Translational Research degree will demonstrate the ability to identify an appropriate peer-reviewed journal that aligns with their research project. Written Assignment 2 in course MSCT 55X. Students in the MS Clinical and Translational Research degree will demonstrate the ability to write a manuscript that meets the appropriate criteria for a peer-reviewed publication.
- **Measure:** Rubrics will be utilized to evaluate students' ability to demonstrate the competencies identified to meet Outcome 3. Annual review of outcomes will be completed and utilized for continuous course improvement. The curriculum will be refined based on measures of the student's ability to prepare a manuscript for an identified peer-reviewed journal.

**Projected Enrollment for the First Three Years:**



## EXECUTIVE SUMMARY

1<sup>st</sup> Year: 15  
2<sup>nd</sup> Year: 30  
3<sup>rd</sup> Year: 45

### **Evidence of Market Demand:**

Gray Associates' Program Evaluation System provides an overall score for a specific program of interest based on individual scores within Student Demand, Employment Opportunities, Strategic Fit, and Competitive Intensity categories. Gray's robust database assembles information from various market drivers indicative of successful campus programs including student inquiries, applications, demographics, completions, job openings, job postings, and placement rates from sources including IPEDS, BLS/O\*NET, Department of Education, Burning Glass, U.S. Census, Skills Engine, Google, and the National Higher Education Benchmarking Institute. The database was custom built for the College of Health Solutions to include up to ten markets including the Arizona and national markets. Emsi Analytics provides additional market analyses indicating high demand for medical scientists. The market results from Gray Associates, Emsi, the U.S. Bureau of Labor and Statistics (BLS), IPEDS, and the U.S. Census Bureau's American Community Survey are provided below and indicate positive growth opportunities for the Master of Science in Clinical and Translational Science.

According to IPEDS, there were a total of 726 completions at 50 campuses of which 86% were at the master's degree level in 2017. According to Emsi, there were 25,953 total job postings between January 2019 to June 2019 for medical scientists with average monthly hires being 3,964 during that same period of time (Medical scientists "conduct research dealing with the understanding of human diseases and the improvement of human health") (O\*Net). Emsi projects a +19.54% change in occupations (+22,778 new jobs) for medical scientists between 2017 and 2024. The U.S. Bureau of Labor and Statistics (BLS) reports the current employment for medical scientists to be 1,377 which is a compound annual growth rate of 1.8% for year-over year employment, 6.7% for 3-year historic growth, and 5.8% for 5-year historic growth. The 10-Year forecast for compound annual growth rate is 1.2%. According to the American Community Survey administered by the U.S. Census Bureau, wages range between \$34,969 (age < 30) to \$64,720 (age 30-60). Emsi reports medical scientists have median hourly earnings of \$40.81/hr.

The data demonstrates strong growth for medical scientists in the field of clinical and translational science.

### **Similar Programs Offered at Arizona Public Universities:**

The University of Arizona offers a Clinical Translational Sciences (CTS) degree that targets students with a clinical or basic science background who will participate in a specific laboratory or clinical research project in the laboratory/clinic of a CTS faculty member.

(<https://grad.arizona.edu/catalog/programinfo/CLTRSCIMS>)

## EXECUTIVE SUMMARY

The proposed degree from ASU is unique because of its applied emphasis and strong mentoring component. Specifically, students in the MS in Clinical and Translational Science at ASU will be prepared and mentored to complete a research study in their current practice setting. The research project will be completed in the student's practice or organizational environment, utilizing data from their own practice to identify a gap, design and implement a research study, evaluate and disseminate outcomes of the intervention. This program feature will afford students significant opportunities to apply knowledge and skills in an authentic professional context, thus enhancing the experiential value of the degree. In addition, faculty mentors and thesis chairs will come from a variety of disciplines represented by the sponsoring colleges, based on students' areas of research, including but not limited to the Science of Health Care Delivery, Nursing, Biomedical Informatics, Population Health, Integrative Behavioral Health, and Clinical Health Innovation.

The MS in Clinical and Translational Science aims to attract current professional practitioners who identify gaps in the literature to prepare them to design, implement, measure, and disseminate an intervention that addresses a real-world problem in their practice or organization. An additional distinctive feature of this MS degree is that it will be offered in an online format.

**New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

No new resources are required to implement this degree. The College of Health Solutions and Edson College of Nursing and Health Innovation have current faculty who are qualified and available to teach the majority of courses in the MS in Clinical and Translational Science. Their teaching assignments will be reallocated to teach the courses in this degree. An existing faculty member will serve as the degree coordinator. Existing support staff and advising staff will ensure student success. As enrollment increases and faculty with specific teaching expertise is required, we will supplement current faculty with qualified faculty associates and/or instructors to deliver this degree.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$350 per credit hour**

**Program Fee Justification:**

Students in the MS in Clinical and Translational Science will require lower faculty-to-student ratio to guide their intervention research from proposal, through design, implementation, evaluation and dissemination.

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** N/A

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Doctor of Philosophy in Manufacturing Engineering
<b>Academic Department:</b>
The Polytechnic School, Ira A. Fulton Schools of Engineering
<b>Geographic Site:</b>
Polytechnic Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
84
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief Program Description:</b>
<p>The PhD program in Manufacturing Engineering at the Polytechnic School is a flexible and interdisciplinary program that focuses on developing a deep understanding of, and innovation in manufacturing processes that constitute the underpinning of modern industries. The program combines core Mechanical Engineering, Industrial Engineering, Materials Science and Engineering, and Chemical Engineering skills, adding elements from Mechatronics, Physics, Chemistry, Economics, and Business management. The program is built on the broad and diverse disciplinary expertise of the Manufacturing Engineering faculty in The Polytechnic School and their commitment to collectively address an evolving set of engineering challenges where the whole solution has to be larger than the sum of the parts. Within this environment, students will attain mathematical and physical expertise, the capacity to evaluate and model complex systems, and a depth of disciplinary expertise to develop solutions for extremely complex problems.</p> <p>The establishment of a PhD program in Manufacturing Engineering will support the charter and goals of ASU, and enhance the ongoing evolution of ASU as a New American University. Specifically, the Manufacturing Engineering PhD program will:</p> <ul style="list-style-type: none"><li>• Demonstrate ASU's leadership in academic excellence and accessibility. The research foci are computational and experimental. Student recruitment, retention and graduation rates will be enhanced through alignment with students' learning styles.</li><li>• Establish national standing in academic quality and impact of The Polytechnic School and Manufacturing Engineering. To date, there are only four R-1 research universities in the U.S. with PhD programs in the manufacturing field, and none of them are in Arizona. The Polytechnic School has recently made significant investments in manufacturing equipment and facilities, as well as in hiring research faculty in</li></ul>

## EXECUTIVE SUMMARY

manufacturing. For this program to thrive, it needs an accompanying PhD program to attract and develop research expertise and research infrastructures.

- Establish ASU as a leading global center for interdisciplinary research, discovery, and development. The research areas of the affiliated faculties in Manufacturing and the core courses and training expertise from Manufacturing PhD's are unique in both Arizona State and the United States. The current manufacturing faculty members have knowledge covering different materials (i.e., including polymers, semiconductors, ceramics, and metals, etc.) and various manufacturing techniques (i.e., traditional molding/extruding/casting/spinning and emerging techniques of micro/nano-manufacturing such as etching, micro/nanofabrication, digital and additive manufacturing, laser manufacturing, direct writing, etc.).
- Enhance local impact and social embeddedness. Manufacturing is an impactful force in the local economy, with Arizona listed among the top 5 states in the country in the Aerospace and Defense sector (Raytheon, Honeywell, Northrop Grumman, Boeing, MD Helicopter & General Dynamics, to cite a few companies), as well as having a strong presence in the semiconductor/electronics industry (Intel, Microchip, Amkor & Benchmark Electronics). As of 2014, there were over 157,000 jobs in manufacturing in Arizona (per AZ Commerce Authority), with average wages of \$69k. These figures have significantly increased in the last 5 years. It is important to note that over 80% of Arizona's \$22.6 billion exports for 2015 were manufactured goods. For the state and region to stay at the forefront in manufacturing, a thriving manufacturing research program is of the essence. This, in turn, requires a supporting PhD program that allows faculty to recruit the best doctoral students and conduct research with an emphasis on manufacturing that current programs at ASU do not necessarily enable.

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Students will design and conduct experiments, and analyze and interpret data.

- **Concepts:** Research skills, including the ability to conceive research questions, provide proof-of-concept, design and execute computational and/or experimental studies, data analysis and visualization, identification of risks and their mitigation.
- **Competencies:** Understand the state-of-the-art in each subfield under manufacturing, develop solutions to technical problems (e.g., innovation in fundamental manufacturing mechanism), comprehend the benefits of novel materials and combinations thereof, such as blending soft matter and metals, and understand the importance of resolution, control, and measurement, during the fabrication processes. Data analysis and visualization methods.
- **Assessment Methods:** In dissertation proposals, the students will demonstrate the ability to design new setups and conduct experiments to test a scientific hypothesis. This will be further evaluated during the dissertation defense.
- **Measures:** Evaluations will be made by the student's dissertation committee using standard criteria for measuring performance during the proposal and defense mechanisms. The emphasis for this assessment will be on the research methodology developed and used by the student.

**Learning Outcome 2:** Graduates will communicate effectively across disciplines to manage and lead activities in support of manufacturing goals and objectives.

**EXECUTIVE SUMMARY**

- **Concepts:** Role of manufacturing in a wide range of engineering disciplines, as well as how the disciplines themselves contribute to manufacturing science; identification of research impact and benefit of work being conducted; capability to disseminate research progress to audiences at different levels; understanding of professional and ethical responsibility.
- **Competencies:** Demonstrate the ability to work on different topics related to manufacturing, can envision and communicate the impact of research directions, work effectively in multidisciplinary teams to publish papers, communication of research at conferences and other platforms.
- **Assessment Methods:** Project in a specially developed course (MFG 792 Research), where students will demonstrate the capability to function in multi-disciplinary teams and assessed against milestones achieved during project implementation. Publication record in journals and conference proceedings, presentations at conferences, assessed during thesis defense. Dissertation proposal and defense to assess student's ability to communicate effectively.
- **Measures:** Grade in the MFG 792 course, number and quality of journal and conference publications, evidence of multiple conferences and/or poster presentations. Proposal and thesis defense performance, focusing on technical communication abilities.

**Learning Outcome 3:** Graduates will demonstrate the practical application of the mathematical, physical, and chemical methods of manufacturing data collection, analysis, and solutions development.

- **Concepts:** Deep comprehension of specific manufacturing science or engineering domain, understanding of key challenges and opportunities within the broader field of study, translation of academic research into practical outcomes benefiting humanity.
- **Competencies:** Capable of applying fundamental concepts in math, physics, chemistry, and other engineering fields to innovating manufacturing systems, proving mechanisms of production, and advancing solutions to technical, energy, sustainability or health issues.
- **Assessment Methods:** Coursework and assessment methods will be employed to develop and assess the fundamental understanding of manufacturing sciences. The dissertation proposal and defense, where the students will have to demonstrate a deep skillset in quantitative and qualitative sciences relative to the manufacturing domain of their study will be used to assess student's ability to relate their work in the context of its practical application, foreseeing challenges and opportunities.
- **Measures:** Grades in coursework to assess breadth of understanding of the manufacturing field. New research results, as measured during the thesis proposal and defense, with the committee focusing on the student's ability to demonstrate a more contextual understanding of their work and its applicability.

**Projected Enrollment for the First Three Years:**

1<sup>st</sup> Year: 3

2<sup>nd</sup> Year: 8

3<sup>rd</sup> Year: 14

## EXECUTIVE SUMMARY

### **Evidence of Market Demand:**

The job market and career outlook: According to Burning Glass data (Source: Burning Glass Technologies, 2019.), the entry-level STEM postings for Engineering & Advanced Manufacturing account for 8% of all STEM postings (115,246 among all 1,373,628 positions), with an average salary of \$61,829. In Arizona alone, there are 15,317 postings among 125,247 positions (12%). According to data on the Bureau of Labor Statistics website (visited April 2019), the manufacturing sector may include sub sectors in food manufacturing, textile and apparel engineering, wood and paper manufacturing, printing and related support activities, petroleum and coal products manufacturing, chemical engineering, plastics and rubber products manufacturing, metal and machinery manufacturing, electronic products and electrical equipment manufacturing, among other miscellaneous manufacturing. Therefore, these career paths can be the job options for our graduate students. The most updated employment data shows employment ranging between 127,000,000 and 129,000,000. The openings in November and December 2018 were 495,000 and 428,000 respectively, based on the data from employers or established surveys (Bureau of Labor Statistics: Manufacturing. Available from: <https://www.bls.gov/iag/tgs/iag31-33.htm>). The number of job gains in each quarter from 2017 to 2018 was stable. For example, the jobs gained in the 4th quarter of 2017 was 99,000, in the 1st quarter of 2018 was 97,000 and in the 2nd quarter of 2018 was 98,000.

Manufacturing Engineering is a collection of fundamental disciplines (statistics, materials science, solid mechanics, controls and automation, optics, polymer chemistry, ceramics, metallurgy, and composites) which altogether deliver knowledge towards a specific mission. There is a constant demand for Manufacturing Engineering PhDs, as research scientists and engineers at national and international companies such as Intel/Tesla/Ford/Honeywell/General Dynamics, a job market that is filled with mechanical, chemical or material engineering PhDs without knowledge of processing or manufacturing engineering.

Only four American Universities (three R1 universities and one R2 university), to the best of our knowledge, offer independent programs with PhD degrees and focus in Manufacturing Engineering. Generally, graduate students in those programs have well-developed careers as engineers, scientists, and researchers at the beginning of their career and as program managers or technical leaders in their subsequent career paths.

### **Similar Programs Offered at Arizona Public Universities:**

There are no similar programs found in any Arizona Public Universities.

### **New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

The Fulton Schools of Engineering plan to reallocate at least five faculty members toward teaching the core courses. We will take advantage of the existing teaching resources (e.g., the teaching faculties and course materials) from the Polytechnic School for elective courses, such as EGR 520, Engineering Analysis; EGR 598, Manufacturing Systems Management; EGR 598, Physical Principles of Material Removal and Forming processes; EGR 598,

## EXECUTIVE SUMMARY

Simulating Manufacturing Systems. There have been endorsements to assist the development of elective courses from other departments in the Fulton Schools of Engineering, including Mechanical and Aerospace, Materials Science and Engineering, Chemical Engineering, Industrial Engineering and others. Two Teaching Assistant positions per semester will be required considering the inclusion of lab sessions in a few core manufacturing courses. The Polytechnic School will also allocate recharge center or facility shared labs/centers (e.g., innovation hub with 3D printers and other material manufacturing equipment) on campus to some courses being or to be developed.

**Program Fee/Differentiated Tuition Required?** YES ☐ NO ☒

**Estimated Amount:** N/A

**Program Fee Justification:** N/A

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** N/A

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Master of Science in Public Interest Technology
<b>Academic Department:</b>
School for the Future of Innovation in Society
<b>Geographic Site:</b>
Tempe Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
30
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief Program Description:</b>
<p>The Master of Science in Public Interest Technology asks a fundamental question. Is technology being applied for the public good? When studying the public interest, it is vital to see how new technologies pose new challenges and opportunities to society. Graduates will acquire the ability to work in cross-disciplinary teams and gain a fluency that permeates technology and society issues and solutions. Graduates will be able to think analytically, design new systems and processes, and have exposure to emerging technologies that can make a difference to how government agencies and non-government organizations work, not-for-profits and even private companies that emphasize social impact. People working in this space ask communities what their needs are first, using a co-design approach to innovation with values in mind and cultural awareness. Public interest technologies are equally relevant to public, private, not-for-profit and non-government organizations who seek to embed the goals of human rights, technology assessment, social justice, sustainability and environmental justice in their workforce, products and processes. Some of the jobs available in this space include: policy managers, analysts and designers, content strategists and advocacy coordinators, big/open data managers, communications and outreach officers, public health leaders and public policy analysts, privacy and data engagement officers and privacy data misuse analysts, integrity trust and safety officers, regulatory, and environmental affairs managers.</p> <p>The focus on “public interest technology” (PIT) is a significant consequence of elements of ASU’s design aspirations (e.g., use-inspired research, intellectual fusion, transform society) and its charter ideal of taking fundamental responsibility for the communities we serve. ASU has been selected as a charter member of the PIT University Network (<a href="https://www.fordfoundation.org/the-latest/news/higher-education-philanthropy-and-public-">https://www.fordfoundation.org/the-latest/news/higher-education-philanthropy-and-public-</a></p>



## EXECUTIVE SUMMARY

[policy-sectors-unite-in-new-push-to-develop-public-interest-technology/](#)), which will develop and support curriculum development, experiential learning, and targeted faculty hiring. ASU is the only Arizona university to be so recognized. As the first stage in curriculum development to engage this effort, the MS in Public Interest Technology as an ASU Online program will be available to a diverse student population from around the world. This cross-disciplinary degree program will help students develop knowledge and skills that will allow them to assess emerging technologies for social impact and common good.

Through the establishment of a variety of Public Interest Foundations, such as the Ford Foundation, and the newly formed Public Interest Technology Universities Network, it is critical that the School for the Future of Innovation in Society becomes an early provider of a transdisciplinary graduate program that serves students from the technology and society intersectional domains.

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Graduates will demonstrate an ability to define, understand and apply fundamental principles and theoretical frameworks of public interest technology to real-world cases.

- **Concepts:** Cutting-edge philosophy of practice that is transdisciplinary, with an emphasis on the interplay between technology and society for the common good; fluency related to societal needs, emerging technologies, and laws and regulations governing (mis)uses promoting social and environmental justice, civil liberties and human rights.
- **Competencies:** Ability to perform a stakeholder analysis and understand the deep value chains that exist in sociotechnical systems. Graduates will be able to confidently identify a host of emerging technologies and their corresponding social implications. Examples include: smart cities and internet of things, robotics and autonomous systems, artificial intelligence and self-service clients, driverless cars and smart homes. Graduates will have an appreciation for fundamental legal, regulatory and policy issues in the context of public interest technology.
- **Assessment Methods:** Students will be examined about fundamental principles and theoretical frameworks of public interest technology in the mid-term and final-term examinations in the PIT 501 core class. Students will also do targeted activities in PIT 501 from a variety of stakeholder lenses to gain a view of the various challenges that may be faced by a public agency, private corporation, not-for-profit or non-government organization, and the general community through role play.
- **Measures:** The curriculum will be monitored and refined based on student testing of factual knowledge, cognitive understanding, conceptual and analytical practice, with respect to emerging technologies and their application in society.

**Learning Outcome 2:** Graduates will demonstrate the ability to work in a cross-disciplinary team to critically study, analyze and reflect on the successes and failures of existing and prospective sociotechnical systems and make recommendations on how to overcome problems.

- **Concepts:** Reasons for successes or failures of a sociotechnical system composed of social, technical and environmental dimensions; consequences of emerging technologies from a variety of standpoints, including but not limited to social justice,

## EXECUTIVE SUMMARY

environmental justice, fairness and equity, civil liberties/human rights perspectives; co-design methodology within an interdisciplinary team where a go/no go decision is made for a business case.

- **Competencies:** Ability to develop project management, teamwork skills, and an ability to peer review throughout the public interest technology project lifecycle and demonstrate knowledge of the importance of accountability, transparency, and corporate responsibility when working for the public interest. Students will learn and apply relevant contextual ethical codes of conduct in technology and engineering, the human dimension, and the need to care when the social implications of technology are negative on people, animals or the environment. They will be able to identify critical issues including data ownership and consent, governance, privacy and security, accessibility and the digital divide, among others. Students need to develop empathetic intelligence, recognize individual stakeholder lifeworlds, and respond accordingly through multi-stakeholder dialogue.
- **Assessment Methods:** Throughout the program students will have to apply their knowledge and theory into practice, evaluate a variety of sociotechnical options, and create new proofs of concept. As part of the public interest technology team project in PIT 502, students will have their work seen by real clients for whom they are working, they will learn to assess other peer projects using evaluative rubrics, and they will learn to give and receive peer feedback related to their contributions with the view of improvement. Students will create a portfolio of case materials in an online journal in PIT 503 and PIT 504, pertaining to emerging technologies, where they begin to uncover patterns and trends, create business and operational checklists, of what constitutes a successful implementation of public interest technology. In each case study, students will identify vertical sector applications, a selection of technologies used, and systems integration efforts within an ecosystem of stakeholders.
- **Measures:** Curriculum will be evaluated and refined based on the students' ability to be an effective and productive team member on the public interest technology project using the co-design methodology. The student cohort will have the ability to detect negative unintended consequences of emerging technologies, and to articulate different stakeholder viewpoints, from citizen to service provider, or government. The curriculum will be monitored using assignments in the student portfolio and faculty-developed rubrics.

**Learning Outcome 3:** Graduates will be able to disseminate the results of technology impact assessments using different forms of communication - professional report writing, employing diverse public engagement strategies on and off-line.

- **Concepts:** Communication to diverse audiences about technology, risk, privacy, environmental or social impact that will bring attention to a public interest dilemma using different public engagement strategies.
- **Competencies:** Ability to use factual knowledge and persuasive language as tools for successfully communicating their message to their audience based on the investigation of a current live case study. Students will have to communicate their message in the written form, using a variety of techniques. They will also have the ability to engage multi-stakeholder participants and share their learnings.
- **Assessment Method:** In PIT 504 students will learn about multiple strategies to appropriately and persuasively convey their messages to a variety of stakeholders and diverse audiences. The Applied Project PIT 593 will be an opportunity for the student

## EXECUTIVE SUMMARY

to work closely with faculty on a topic that is relevant to the future career of the student, both in practice and research. Student evaluation will be based on an Applied Project rubric where the student demonstrates the ability to make a recognizable contribution to the larger landscape.

- **Measure:** The curriculum will be monitored and refined based on student ability to successfully conduct impact assessments and communicate solutions to overcome socio-technical quandaries.

### Projected Enrollment for the First Three Years:

1<sup>st</sup> Year: 30  
2<sup>nd</sup> Year: 60  
3<sup>rd</sup> Year: 100

### Evidence of Market Demand:

#### Market Need:

A three-pronged approach was used to evaluate future employment demand for graduates of a MS in Public Interest Technology. First, an Emsi Analyst report was run based on closely-aligned career codes (52.021 - Business Administration and Management, General, and 44.0401 - Public Administration). Employment Projections were then pulled from the U.S. Department of Labor web site using the career codes for the target occupations indicated. Finally, a targeted survey was deployed to 200 public and private sector employees with input to hiring decisions.

**Emsi Analyst summary:** Labor market demand was based on the target occupations of Public Relations and Fundraising Managers (11-2031), Management Analysis (13-1111), and General and Operations Managers (11-1021). There were an estimated 52,398 annual openings for jobs within these sectors in 2018, with a projected growth of 7.8% between 2018 and 2023. Current job opportunities are relatively evenly spread across the US. top posted jobs related to Public Interest Technology, including Operational Managers, Program Managers, Strategy Managers, Business Analysts, Research Analysts, and Policy Analysts. Relevant skills related to Public Interest Technology include strategic planning, strategic management, forecasting, change management, communication, innovation, communication, leadership, research, and problem solving.

**U.S. Department of Labor summary:** Labor market demand was based on the target occupations of Public Relations and Fundraising Managers (11-2031), Management Analysis (13-1111), and General and Operations Managers (11-1021). Between 2018 and 2028, the jobs market across these three categories is projected to grow from 3.33 million jobs to 3.63 million jobs (an increase of 8.7%). Annual openings across all three categories is projected to be 337 thousand per year, averaged between 2018 and 2028.

**Potential employer survey:** Qualtrics were contracted to assess interest in graduates with core Public Interest Technology competencies/skills amongst people with hiring authority within the public and private sectors. The survey was administered to a panel of 220 participants, including 118 from industry (54%), 19 from government (9%), 23 from not-for

## EXECUTIVE SUMMARY

profits (11%), and 60 from non-designated sectors. Overall, respondents rated all competencies as having above-average importance to their organizations. The unique public interest technology competencies of providing insights into emerging technology trends, applying technology ethics, and implementing strategies for responsible innovation, stood out as being especially important. Skills including working across multiple areas of expertise and working as part of an interdisciplinary team were also highlighted as being important. Each of these was assessed as becoming increasingly important with future hires.

**Summary:** The Emsi Analyst and U.S. Department of Labor analyses indicate that graduates from the MS in Public Interest Technology will be complementary with graduates from other degrees associated with public administration and business administration. The survey of recruitment decision-makers indicates an identified future need for graduates with skills in Public Interest Technology. Overall, there is sufficient evidence for growing demand for graduates from the proposed MS in Public Interest Technology to support a program that aims to graduate 100 - 200 students per year.

### **Similar Programs Offered at Arizona Public Universities:**

In conducting a competitive analysis of degree offerings, concentrations, and majors, the proposed MS in Public Interest Technology degree does not have any direct competitors in the state of Arizona.

When we look at the three major concepts and competencies proposed for the MS in Public Interest Technology, there are elements to be found in master's offerings at several Arizona universities. It is important to note, however, that these programs focus only on the notion of the "public interest" and not comprehensively on the emergent term of "public interest technology". They do not specifically address the 'technology for good' component. The University of Arizona has programs in public interest law as does ASU, but otherwise we can identify sporadic matching in the following programs:

Proposed Concepts/Competencies for the MS in Public Interest Technology:

1. Technology and the Impact on Society/Stakeholder Analysis on Emerging Technologies

Master of Science and Technology Policy at Arizona State University:  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/LAHSDPSM/graduate/false>

2. Co-design methodology within an interdisciplinary team/Systems Feasibility Studies Degrees in Business from The University of Arizona and Arizona State University:

<https://eller.arizona.edu/programs/mba>  
<https://wpcarey.asu.edu/mba-programs>;  
<https://wpcarey.asu.edu/masters-programs>

3. Communication to Diverse Audiences/Citizen-Centered Outreach for Public Engagement

## EXECUTIVE SUMMARY

Master of Science and Technology Policy at Arizona State University:  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/LAHSDPSM/graduate/false>

Other programs within Arizona public universities that intersect only scarcely with few elements of the proposed public interest technology degree include (by area):

### 1. Sustainability (e.g. Impact assessment)

M.A. program in Sustainable Communities at Northern Arizona University:  
<https://nau.edu/sustainable-communities/program/>  
M.S. in Civil, Environmental, and Sustainable Engineering at Arizona State University:  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/ESCIVILMS/graduate/false>  
Undergraduate degrees in the School of Sustainability at Arizona State University:  
<https://schoolofsustainability.asu.edu/degrees-and-programs/undergraduate-degree-programs/what-you-will-learn/>

### 2. Science and technology policy (e.g. technology assessment)

Master of Science and Technology Policy at Arizona State University:  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/LAHSDPSM/graduate/false>  
M.S. in Water, Society and Policy at The University of Arizona:  
<https://grad.arizona.edu/catalog/programinfo/WSPMS>  
M.S. in Natural Resources at The University of Arizona:  
<https://snre.arizona.edu/academics/prospective-students/graduate-degrees>  
M.S. in Environmental Sciences & Policy  
<https://nau.edu/ses/masters-in-environmental-sciences-and-policy/>  
Master of Public Policy with a concentration in Science and Technology Policy  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/PPPUPSTMPP/graduate/false>

### 3. Informatics (e.g. feasibility studies, business cases for technology)

Degrees in Engineering from The University of Arizona and Arizona State University:  
<http://engineering.arizona.edu/>  
<https://graduate.engineering.asu.edu/>  
Master in Public Policy with a concentration in Policy Informatics at Arizona State University:  
<https://webapp4.asu.edu/programs/t5/majorinfo/ASU00/PPPUPPIMPP/graduate/false>

### 4. Case-based project work and teamwork skills (e.g. built through capstone style final year projects but not fully interdisciplinary)

Degrees in Business from The University of Arizona, Northern Arizona University, and Arizona State University:  
<https://eller.arizona.edu/programs/mba>  
<https://degrees.nau.edu/degrees/tag/MBA>  
<https://wpcarey.asu.edu/mba-programs>; <https://wpcarey.asu.edu/masters-programs>  
Graduate degrees in the School of Sustainability at Arizona State University:  
<https://schoolofsustainability.asu.edu/degrees-and-programs/undergraduate-degree-programs/what-you-will-learn/>

## EXECUTIVE SUMMARY

**New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

No new resources are needed to deliver the MS in Public Interest Technology program. The School for the Future of Innovation in Society already has concrete plans to reallocate some faculty teaching and to more fully mobilize other faculty for teaching the core of the MS in Public Interest Technology program. Other elective courses will be available to students in other graduate degree programs within the school, and so any shifting of teaching resources will provide elective courses across graduate programs.

**Program Fee/Differentiated Tuition Required?** YES ☐ NO ☒  
**Estimated Amount:** N/A

**Program Fee Justification:** N/A

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** N/A

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Master of Science in Genetic Counseling
<b>Academic Department:</b>
College of Health Solutions
<b>Geographic Site:</b>
Downtown Phoenix Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
60
<b>Proposed Inception Term:</b>
Fall 2021
<b>Brief Program Description:</b>
<p>The Master of Science degree in genetic counseling prepares students for a career as a genetic counselor where they will apply their knowledge and unique skill set to help advance the understanding of genetics and genomics-related conditions within the communities where they work and live. The graduate program in genetic counseling fulfills ASU's mission, to assume responsibility for the overall health of the communities it serves, by training genetic counselors to be competent educators and researchers. As educators, genetic counseling graduates will help individuals better understand the role genetics plays on their risk to develop certain diseases. As researchers, genetic counseling graduates will be equipped with the knowledge and skills necessary to identify methods for how to improve public understanding of genetics and how to use genetic information for disease prevention, in order to reduce the incidence of common disorders such as heart disease, cancer and diabetes, thereby improving the overall health of the communities where they work and live. This program is offered in response to student interest in the profession of genetic counseling as well as community demand for appropriately trained certified genetic counselors.</p> <p>Since the completion of the human genome project, the subsequent advances in genetic/genomic testing technologies and decreased costs of genome sequencing, there are increasingly more types of genomic tests on the market available to consumers and medical providers. In addition, there are government and private companies interested in population based genomic studies to further the understanding of complex diseases. The Master of Science degree will prepare students to attain certification from the American Board of Genetic Counseling and to work in a variety of healthcare and research settings to help individuals better understand genetic testing options and the genetic contributions to their disorders.</p>

## EXECUTIVE SUMMARY

The proposed genetic counseling program at Arizona State University will increase the visibility of genetics and genomics on the campus. A graduate program in genetic counseling will make Arizona State University more attractive for large precision medicine projects with the National Institutes of Health (NIH) such as All of Us. In addition, this program would will leverage and benefit from institutional agreements with the Mayo Clinic, and the Phoenix Children's Hospital.

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Graduates will be able to demonstrate an in-depth knowledge of human genetics and genomics concepts, principles and conditions.

- **Concepts:** Molecular genetics, cytogenetics, biochemical genetics, pedigree analysis, Hardy-Weinberg law, Bayesian analysis and genetic/genomic technologies.
- **Competencies:** Graduates will demonstrate the ability to perform risk calculation and assessment utilizing a variety of methods, explain the fundamentals of cytogenetics, biochemical genetics and molecular genetics, apply these principles to genetic testing and test report interpretation; and apply genetic principles to the etiology, clinical features and disease expression, natural history, pathophysiology, recurrence risk, management and prevention of a variety of genetic conditions.
- **Assessment Methods:** The Master of Science degree in genetic counseling will use a combination of methods to assess students including faculty developed rubrics based on performance in relevant courses to assess students' knowledge of human genetics as well as an internship evaluation. Clinical supervisors will complete an internship evaluation for each student every semester during their clinical internship experiences. The internship evaluation will be developed using the Practice-Based Competencies for Genetic Counselors required by The Accreditation Council for Genetic Counseling.
- **Measures:** The percentage of students who pass the board certification examination (administered by the American Board of Genetic Counseling) following graduation from the Master of Science program, will inform the program's overall effectiveness. The pass rate will be posted on the program's website and modifications to the curriculum will be made based on student performance on the American Board of Genetic Counseling certification examination. This will be evaluated on a yearly basis.

**Learning Outcome 2:** Graduates will effectively function in their role in the larger healthcare system, act in accordance with the ethical, legal and philosophical principles of the genetic counseling profession and their institution or organization and serve as advocates for communities and the profession.

- **Concepts:** National Society of Genetic Counselors Code of Ethics, health care delivery and interprofessional relationships, ethics of genetic technology, professional certification (administered by the American Board of Genetic Counseling) and licensure, community advocacy and professional leadership.
- **Competencies:** Graduates will be able to work as members of a healthcare team while appreciating their scope of practice; effectively communicate with a variety of professional and community audiences; understand the importance of maintaining professional certification and licensure; and be equipped to address any ethical



## EXECUTIVE SUMMARY

challenges surrounding the role of genetics in healthcare and within the communities they work and live.

- **Assessment Methods:** In the second year of the program, students will complete a final project that demonstrates their understanding of the ethical challenges and needs of delivering genetic services to vulnerable populations in the community and be prepared to respond to the needs of these populations. This project will be assessed by the course instructor using a faculty-designed rubric focusing on the principles of healthcare delivery.
- **Measures:** The curriculum will be refined based on the ability of the students to articulate the ethical and legal principles associated with the role of genetics in healthcare, and their role as advocates for members of society especially the vulnerable and underserved communities.

**Learning Outcome 3:** Graduates will understand the research process and demonstrate a self-reflective, evidence-based and current approach to the genetic counseling practice including an understanding of the methods, roles and responsibilities of the process of clinical supervision of trainees.

- **Concepts:** Institutional Review Board purpose and requirements, research design and processes, implementation of research studies, peer reviewed literature, manuscript preparation, mentoring and supervision.
- **Competencies:** Graduates will be able to design a research study while meeting the requirements of the Institutional Review Board, collect data and publish their findings; serve as mentors and teachers for fellow students and provide productive feedback to other trainees and supervisors; be able to reflect on the strengths and weaknesses of their own genetic counseling practice and demonstrate an initiative for lifelong learning and practice improvement.
- **Assessment Methods:** As part of their Capstone Project, students will conduct a research study and present their work (at the completion of the program) to a thesis committee (composed of Arizona State University faculty and outside experts for the research topic) as well as fellow students. Members of the thesis committees will evaluate the thesis project and presentation skills of the students using a faculty designed rubric incorporating the necessary requirements for the relevant research studies. Students will be expected to write up and submit their research findings to a peer-reviewed journal following completion of the program. The written thesis will be incorporated into individual online portfolios of projects completed during the program.
- **Measures:** The curriculum will be evaluated and modified based on student performance on their thesis presentations, demonstration of their understanding of the research process as well as the number of students who publish their thesis projects.

### Projected Enrollment for the First Three Years:

It is not unusual for genetic counseling training programs to have a small class size. The average class size for genetic counseling programs across the U.S. is 8 students. The reason for these enrollment patterns is that students need to be placed with certified genetic counselors in the community for their fieldwork training experiences. At this time, there are 7 genetic counseling sites (12 genetic counselors working at these 7 sites) available for students in Arizona. We will be sharing these sites with the University of Arizona's genetic counseling training program during both the fall and spring semesters. In addition, the

## EXECUTIVE SUMMARY

Accreditation Council for Genetic Counseling requires sufficient fieldwork training experiences for students which includes involvement in a minimum of 50 cases with individuals being evaluated for risk of or affected by diverse genetic conditions across the lifespan. We are also required by the Accreditation Council for Genetic Counseling to demonstrate how we will be sharing our clinical training sites with the University of Arizona's program. Thus, in order to satisfy these requirements, the number of students we can enroll for years 1 and 2 has to be consistent with the available fieldwork training sites. We will partner with community hospitals to recruit new genetic counselors to the Phoenix area in the areas of prenatal and adult genetics. Once these new genetic counselors are in place, we will have two additional fieldwork training sites for the students allowing us to increase our class size.

1<sup>st</sup> Year: 5  
2<sup>nd</sup> Year: 10  
3<sup>rd</sup> Year: 10

### **Evidence of Market Demand:**

Genetic counseling is a specialty in high demand within health professions. Emsi reported 9,331 job postings for genetic counseling or counselors for the first six months of 2019, of which 1,963 were unique. Between September 2016 and April 2019, they also reported 25,122 job postings for genetic counseling or counselor, with 6,558 unique. According to Burning Glass, there were a total of 864 job postings for genetic counseling or counselor over the past 12 months, which is a 184.7% change year over year. This represents 5.9 job postings for each graduate in the field over the past year. In addition, postings for jobs related to genetic counseling grew on average 20% annually from 2010 to 2018 according to data published by Burning Glass.

The field has demonstrated past growth and is expected to continue growing in coming years. The U.S. Bureau of Labor Statistics (BLS) states current employment for genetic counseling and counselors is at 1,090 roles and provides a compound annual growth rate of 17.9% for three-year historic growth and 25.2% for five-year historic growth. The 10-year forecast for compound annual growth rate is 2.7%. For the years 2014 to 2024 the U.S. Bureau of Labor Statistics predicts a growth rate of 29% for genetic counseling positions, a rate that is considerably faster than the average for all other occupations. Despite the fact that the genetic counselor workforce continues to increase, with estimates of 88% growth in the past 10 years, there is still a shortage of genetic counselors involved in direct patient care (Hoskovec et al., 2017).

Within health careers, genetic counseling presents an attractive option to job seekers. U.S. News & World Report ranked genetic counselor at #11 for their listing of Best Health Care Support Jobs with a median pay of \$77,480 per year (<http://money.usnews.com/careers/best-jobs/genetic-counselor>).

### **Similar Programs Offered at Arizona Public Universities:**

There are 45 accredited training programs in North America listed by the Accreditation Council for Genetic Counseling, including a program at the University of Arizona

**EXECUTIVE SUMMARY**

(<https://www.gceducation.org/program-directory/>). The genetic counseling program at Arizona State University will be unique from the University of Arizona's genetic counseling program as it will provide opportunities for the students to work with underrepresented populations within our state, through the creation of a fieldwork training experience in Northern Arizona. The University of Arizona does not offer a fieldwork training site in this part of the state.

The proposed genetic counseling training program at ASU has plans to partner with community hospitals. This type of partnership benefits members of our community, the profession of genetic counseling, and the students enrolled in the genetic counseling training program at Arizona State University. ASU already has existing partnerships with the Mayo Clinic and Phoenix Children's Hospital that may benefit from this proposed program.

A final justification to support two programs in the state is the fact that applying to a genetic counseling program is highly competitive with 100 to 150 students applying to the 10 or fewer slots available in most programs. The competition for these spaces provides evidence for adequate enrollment into both programs in the state.

**New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

In order for the MS program in Genetic Counseling to obtain accreditation from the Accreditation Council for Genetic Counseling, additional faculty will need to be hired to fulfill their curriculum and clinical training requirements. In addition to the program director (existing position), the College of Health Solutions will need to hire two 0.50 FTE clinical faculty positions who are certified genetic counselors and one 0.50 FTE administrative staff member. We will use current College of Health Solutions faculty to teach additional classes. Additionally, Mayo Clinic has agreed to provide up to two genetic counselors and a medical director for the program at no cost to the College of Health Solutions.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$3000**

**Program Fee Justification:**

Genetic counselors are in high demand; however, there is an insufficient number of qualified candidates to fill the positions. The best qualified genetic counselors are certified by the American Board of Genetic Counseling, which requires a Master's degree from an accredited program and extensive clinical hours. A significant portion of the proposed curriculum for the MS program in genetic counseling is specialized to the field and can only be taught by certified genetic counselors. In addition, a major component of genetic counseling training involves clinical fieldwork placement experiences within the community with a certified genetic counselor. The revenue generated from the program fees will be used to support compensation for genetic counselor faculty who are involved in both teaching and clinical supervision of the genetic counseling students, academic advising and clinical placements, and other operational costs above and beyond the funding received from state appropriations.

## EXECUTIVE SUMMARY

---

**Specialized Accreditation?**

YES ☒ NO ☐

**Accreditor:**

The Accreditation Council for Genetic Counseling (<https://www.gceducation.org/>) serves as the accrediting body of genetic counseling training programs in the United States. All genetic counseling training programs must be accredited by the Accreditation Council for Genetic Counseling before enrolling their first cohort of students.

## EXECUTIVE SUMMARY

### New Academic Program Request

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Master of Science in Complex Systems Science
<b>Academic Department:</b>
School of Life Sciences, The College of Liberal Arts and Sciences
<b>Geographic Site:</b>
Tempe Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b> <i>The number of credit hours required to complete the academic program</i>
30
<b>Proposed Inception Term:</b>
Spring 2021
<b>Brief Program Description:</b>
<p>The interdisciplinary Master of Science in Complex Systems Science will develop skills in theoretical foundations, modeling, problem solving, critical thinking, and the importance of direct experience through research or related activities in the context of complex systems. This is a collaborative degree in partnership with the Santa Fe Institute, which is a world leader in complex systems science with over 30 years of research in complex systems. Partnering with this institute will enhance the student experience and ensure that the program has the most up to date knowledge and expertise in the field. The program will focus on the general theoretical foundations, modeling methods and a broad overview of application domains. Complex systems are at the core of all real-world challenges ranging from health, sustainability, engineering, economics, urban and social systems and basic sciences. Expertise in complex systems science will allow graduates to contribute to solutions in a vast number of areas thus fitting with ASU's mission to advance research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.</p> <p>The Global Biosocial Complexity Initiative and its 100+ participating ASU faculty across more than 10 academic units and the Santa Fe Institute with its resident and external faculty represent one of the world's leading concentration of researchers in complex systems science. Leveraging ASU's pioneering role in online education, this group of faculty is able to offer a cutting edge online degree program that is unique in both its scope and level of expertise. By offering the degree through the EdPlus platform students world-wide can take advantage of the expertise of both groups of researchers and are provided with a unique combination of theoretical foundations and practical applications in complex systems science.</p>

## EXECUTIVE SUMMARY

Offering a joint degree with the Santa Fe Institute through ASU is also an innovative approach to Master level education that builds on ASU's innovation expertise and reflects the realities of an interconnected world that requires to be highly dynamic and adaptive.

New faculty are not needed to deliver this curriculum. Based on existing hiring plans and initiatives, several new faculty who will be hired have the potential to contribute to this program in the future. The Global Biosocial Complexity Initiative already coordinates the graduate faculty in complex adaptive systems and the existing concentrations on this subject in a number of Ph.D. programs as well as the complex adaptive systems certificate. The Global Biosocial Complexity Initiative has a functioning business office (6 people) with one designated staff member coordinating our academic offerings. The School of Life Sciences has experience in managing online degrees as well as coordinating degrees developed in partnership with outside organizations (Biomimicry).

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Graduates of the program will be able to evaluate the basic principles of complex systems science and apply those to a number of real-world cases from different areas, including environmental sciences, economics, sustainability and health in order to solve problems.

- **Concepts:** Core features of complex systems; research design, including data collection and analysis applied to real world cases as complex systems problems.
- **Competencies:** Students will demonstrate competence in comprehending and critically evaluating the core principles of complex system science and the ability to apply these theoretical concepts to conduct research on real world cases.
- **Assessment Methods:** Competencies will be tested in written assignments throughout the degree and it will be the basis for assessment of the final research project, which will be an application of complex systems science approaches to a real-world case taken from any number of application areas and matched to the student's interest and goals. Besides formulating a research question, students will be able to conduct preliminary research towards addressing the problem they identified. This will include a comprehensive literature review, as well as data gathering and analysis. They will demonstrate the ability of conducting a critical evaluation of the literature and independent research.
- **Measures:** Assessed by the final project and milestones laid out in the program-long student portfolio. The portfolio will include a rubric of milestones that will also be used to continuously improve the program and help to identify resources needed for students to succeed.

**Learning Outcome 2:** Graduates of the program will be familiar with the essential methodological and modeling tools in complex systems science and demonstrate the ability to apply those to novel data sets.

- **Concepts:** Analytical and modeling techniques; adaptation of standard analytical and modeling techniques to a specific problem.
- **Competencies:** Students will demonstrate the ability to assess critically the assumptions and limitations of techniques and modeling approaches. Students will understand and apply core modeling techniques of complex systems science and be

## EXECUTIVE SUMMARY

able to select appropriate techniques for particular empirical cases. This includes competency in dynamic systems modeling, agent based modeling and statistics.

- **Assessment Methods:** The ability to comprehend these concepts will be tested in all relevant methods courses within the degree and also in the development of the methodological framework for the final project. Students will have to defend their selection of methods and be able to critically assess the results of their simulations and analysis. Students will also demonstrate their ability to adapt standard techniques to fit their research question and data structures. This involves basic programming skills allowing students to productively apply methods to real world cases.
- **Measures:** Assessed by the final project and milestones laid out in the program-long student portfolio. The portfolio will include a rubric of milestones that will also be used to continuously improve the program and help to identify resources needed for students to succeed.

**Learning Outcome 3:** Graduates of the program will be able to identify and analyze concrete examples of complex systems and compare those to other such examples in order to identify similarities and differences between those systems.

- **Concepts:** Characteristics and criteria of complex systems. Data structures needed to identify complex systems. Questions that can be examined using complex systems concepts and methods. Research methods to study complex systems.
- **Competencies:** Students will demonstrate competence in comparing instances of complex systems to each other in order to detect common principles and structures. Students will independently conduct a study on a complex system.
- **Assessment Methods:** The ability to comprehend these concepts will be tested in all relevant courses within the degree and also in the development of the framework for the final project. Students will have to defend their research question, corresponding selection of methods and be able to critically assess the results of their work and place those into the larger context. Students will also demonstrate their ability to specifically adapt methods to fit their research question and data structures.
- **Measures:** Assessed by the final project and milestones laid out in the program-long student portfolio. The portfolio will include a rubric of milestones that will also be used to continuously improve the program and help to identify resources needed for students to succeed.

### Projected Enrollment for the First Three Years:

1<sup>st</sup> Year: 20  
2<sup>nd</sup> Year: 50  
3<sup>rd</sup> Year: 80

### Evidence of Market Demand:

Complex systems science is an important part of solutions in such areas as sustainability, finance, a large number of the social sciences, the bio-medical sciences and computer science. It is foundational for understanding risk and security. Career options include, but are not limited to (15-0000) Computer and Mathematical Occupations; projected growth rate in employment for the 2018-2028 period is 12.7%; and (19-0000) Life, Physical and Social

## EXECUTIVE SUMMARY

Science Occupations; projected growth rate in employment 2018 to 2028 is 7.4% (source Bureau of Labor Statistics ([www.bls.gov](http://www.bls.gov))). Furthermore, the report "The New Foundational Skills for the Digital Economy: Developing the Professionals of the Future" by BurningGlass Technologies ([https://www.burning-glass.com/wp-content/uploads/New\\_Foundational\\_Skills.pdf](https://www.burning-glass.com/wp-content/uploads/New_Foundational_Skills.pdf)) identifies many of the skills developed as part of this degree as foundational.

The career options for graduates of this degree are therefore manifold. For instance, the degree will better qualify students for a number of PhD programs at ASU. As there are no complex systems undergraduate degrees, it provides necessary qualifications for more advanced studies. In addition, the degree constitutes an added qualification for a huge number of jobs in the private and public sectors in all the areas listed above. Evidence for this is the huge demand for executive education in this area by some of the leading companies (many are members of the Santa Fe Institute Action network and have expressed interest in such an online degree for their employees). Given these options and trends and the tremendous growth in these sectors of the economy, we project outstanding career options for graduates.

The need to better understand complexity is widely recognized. The Economist in an editorial in 2004 (28th October) and in many articles subsequently published called for the need to "keep it simple" in light of ever-increasing complexity and identified complexity science as the way to advance that vision. Similarly, the Journal of the American Medical Association called for the urgent need to understand healthcare as a complex system (doi:10.1001/jama.2012.7551), and Science Magazine identified expertise in networks, especially complex networks as a major career option (<https://www.sciencemag.org/careers/2009/07/tangled-webs-careers-network-science>). Yet, globally only a handful of complex systems degree programs/concentrations exist, mostly at the PhD level and all are more narrowly focused. At ASU, we have avoided this narrow specialization by offering a concentration in a number of PhD degrees. Both our experience and the experience of our colleagues highlight the need for a broad, interdisciplinary MS program ahead of the PhD.

### **Similar Programs Offered at Arizona Public Universities:**

There are no comparable degrees offered at any universities in Arizona.

### **New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

New faculty are not required to deliver this curriculum. Based on existing hiring plans and initiatives, several new faculty who will be hired have the potential to contribute to this program in the future. The Global Biosocial Complexity Initiative has a functioning business office of six staff members, with one designated staff member coordinating our academic offerings.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$475 per credit hour**



## EXECUTIVE SUMMARY

### Program Fee Justification:

The Complex Systems Science MS is a collaborative degree between ASU and the Santa Fe Institute. The Santa Fe Institute is the world leader in complex systems science and an institutional partner of ASU. An agreement covers the modalities of the collaborative degree and it specifies a program fee. The involvement of the Santa Fe Institute greatly enhances the degree and its marketability. A program fee would cover the following additional costs:

- (1) Development of new materials covering the most up to date knowledge in complex systems science by Santa Fe Institute faculty that is refreshed annually. ASU and the students in the program will have unique access to these Santa Fe Institute materials.
- (2) Involvement of Santa Fe Institute faculty in all courses. ASU faculty will be co-instructors, but Santa Fe Institute faculty will contribute segments in all courses. The ASU-Santa Fe Institute agreement states that a program fee would be split between ASU academic units and the Santa Fe Institute to cover these costs.
- (3) As a graduate degree program, the MS curriculum has research and applied project components. These applied projects are especially complex and labor intensive and require the support of teaching assistants to set up, working closely with faculty. The program fee is designed to cover these costs, which directly benefit the students in the MS program.

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** N/A

## EXECUTIVE SUMMARY

### New Academic Program Request

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Bachelor of Science in Operations Management and Technology
<b>Academic Department:</b>
The Polytechnic School, Ira A. Fulton Schools of Engineering
<b>Geographic Site:</b>
Polytechnic Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
120
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief Program Description:</b>
<p>The BS degree in Operations Management and Technology will focus on the management of technology, innovation, manufacturing processes, technical operations, technical communication and information. The program will train students in the intersection of technology, STEM and management, complemented with hands-on, project-based training on how to manage technology, and innovate and commercialize ideas. Students will combine foundational core competencies in engineering and technology management, one year of immersion in STEM or operations management fields, and one year of a cohort-based Operations Management and Technology core to prepare them with technical, analytical and entrepreneurial skills needed for an ever-changing world. This program is unique in that it is housed in an engineering school, leveraging the technical discipline of engineers as applied to the management of technology, and advances ASU's commitment to innovation and interdisciplinarity.</p> <p>The objectives for this degree program are that students use a systems approach to describe and execute solutions to a number of problems and issues; organize an improvement plan for a current product, service, or process to solve innovation challenges facing an organization or society; implement a sustainable, creative cross-discipline approach to the systems challenges; explain leadership characteristics that promote change through the presentation of a live project; and demonstrate a cross-discipline solution to initiate an innovation process that solves a complex problem or issue.</p>
<b>Learning Outcomes and Assessment Plan:</b>

## EXECUTIVE SUMMARY

**Learning Outcome 1:** Graduates of the BS in Operations Management and Technology will apply systems thinking and data-driven decision making to optimize decision(s) to solve complex problems for a variety of industries/organizations.

- **Concepts:** Data driven thinking; statistical analyses; economic behavior; uncertainty reduction; game theory; risk and reward analysis.
- **Competencies:** Students will apply data driven thinking, to include applied statistics, behavioral economics, scenario planning, optimization, algorithms, risk and game theory. Students will use statistical tools to reduce uncertainty and risk, to optimize processes and improve efficiency within engineering settings.
- **Assessment Method:** Students will use a systems approach to describe and execute solutions to multiple problems or issues in the final project for TEM 494: Data Driven Decision Making. The projects will be assessed with a faculty designed rubric that assesses their ability to use tools of statistical analysis to drive decision making to analyze a complex problem, and make recommendations to improve efficiency and reduce errors in manufacturing, technology or other engineering contexts. At graduation, students will be surveyed (Graduating Senior Report Card) to evaluate the quality of their university preparation to solve complex problems and after three years, the students will be surveyed again to measure the longer-term impact of their university preparation (via the University Alumni Survey).
- **Measures:** Direct measures will include assessment of complex problem solving in Data Driven Decision Making, based on the assignment rubric. Indirect measures will include feedback surveys and evaluations. Twice a year, the program convenes a meeting of its Industry Advisory Board, composed of faculty, students, alumni, parents and industry partners, to make recommendations for improvement of the curriculum and program objectives. The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to apply systems thinking and data-driven decision making to optimize decision(s) to solve complex problems.

**Learning Outcome 2:** Graduates of the BS in Operations Management and Technology will demonstrate proficiency in critical thinking by developing a strategic plan that includes analysis of issues, assumptions, evidence, and implications in the management of technology.

- **Concepts:** Mission; vision; organizational goals; decision making; long-term planning; deductive reasoning; stakeholder assessment; macroeconomic trends within American institutions of business and industry.
- **Competencies:** Students will apply critical thinking knowledge from all functional areas of engineering or technology organizations to develop and implement an effective strategic plan that reflects an understanding of American enterprise, including the history of free markets. The students will develop a vision, mission, objectives and goals for the organization using a variety of tools in quantitative and qualitative analysis techniques.
- **Assessment Methods:** Students will organize a strategic plan for a current product, service, or process to solve innovation challenges facing an organization in the final project for TMC 430: Enterprise Strategy and Innovation. The projects will be assessed with a faculty designed and industry informed rubric that assesses their ability to apply critical thinking knowledge to develop and implement an effective strategic plan in manufacturing, technology or other engineering contexts. At graduation, students will be surveyed (Graduating Senior Report Card) to evaluate the

## EXECUTIVE SUMMARY

quality of their university preparation to think critically and after three years, the students will be surveyed again to measure the longer-term impact of their university preparation (via the University Alumni Survey).

- **Measures:** Direct measures will include the detailed presentation regarding organizational challenges in Enterprise Strategy and Innovation, based on the assignment rubric. Indirect measures will include feedback surveys and evaluations.

The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to demonstrate proficiency in critical thinking by developing a strategic plan that includes analysis of issues, assumptions, evidence, and implications and feedback from the Industry Advisory Board.

**Learning Outcome 3:** Graduates of the BS in Operations Management and Technology will demonstrate proficiency in creativity and innovation by developing creative, imaginative solutions to innovate a new product or process using technology.

- **Concepts:** Process innovation; creativity; imagination; invention; ideation; product development or improvement.
- **Competencies:** Students will implement creative methodologies and imaginative solutions to stakeholder pain points. The students will demonstrate the ability to ideate new ideas to solve the needs of their stakeholders, leveraging the technical discipline of engineering as applied to the management of technology.
- **Assessment Method:** Students will apply creativity and imagination to the use of technology to ideate new processes, products or services based on stakeholder pain points and input in the final project for OMT 230: Creativity and Business Innovation. The projects will be assessed with a faculty designed and industry informed rubric that assesses their ability to create and innovate an effective product, process or service improvement in a technical context. At graduation, students will be surveyed (Graduating Senior Report Card) to evaluate the quality of their university preparation to use creativity in solving complex problems or issues and after three years, the students will be surveyed again to measure the longer-term impact of their university preparation (via the University Alumni Survey).
- **Measures:** Direct measures will include feedback on the ideation designs in Creativity and Business Innovation, based on the assignment rubric. Indirect measures will include feedback surveys and evaluations. The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to demonstrate proficiency in creativity and innovation by developing a creative solution and feedback from the Industry Advisory Board.

**Learning Outcome 4:** Graduates of the BS in Operations Management and Technology will demonstrate proficiency in managing teams of people by developing a strategic plan for a business, in teams.

- **Concepts:** Teamwork; diversity; civil discourse; leadership; organizational structure; culture; strategic planning; social responsibility; ethics; sustainability; change management.
- **Competencies:** Students will work in teams to prepare a professional presentation that analyzes the interaction of individuals and group behavior with organizational efficiencies, strategies, structure, culture, social responsibility and sustainability so organizations work more effectively and efficiently. Students will demonstrate the

## EXECUTIVE SUMMARY

ability to interpret an organization's strategic plan, analyze situations under various ethical frameworks and recognize the impact of an organization within the context of the larger American macroeconomic landscape and preservation of natural resources.

- **Assessment Method:** Students will analyze the organizational structure, leadership and culture in their final qualitative research project for TMC 330: Leading the Enterprise. At graduation, students will be surveyed (Graduating Senior Report Card) to evaluate the quality of their university preparation to develop leadership characteristics that promote change and after three years, the students will be surveyed again to measure the longer-term impact of their university preparation (via the University Alumni Survey).
- **Measures:** Direct measures will include feedback on the qualitative research project based on the assignment rubric. Indirect measures will include feedback surveys and evaluations. The curriculum will be monitored and refined based on direct and indirect measures indicating student ability to demonstrate proficiency in analysis of and recommendations for organizational structure, leadership and culture and feedback from the Industry Advisory Board.

**Learning Outcome 5:** Graduates of the BS in Operations Management and Technology will demonstrate proficiency in collaborating with diverse team members by developing professional team presentations to convey improvement plans for businesses or organizations.

- **Concepts:** Innovation management; project management; human resources; quality improvement; professional communication; teamwork; ethics; civil discourse; diversity; inclusion.
- **Competencies:** Students will engage in respectful, civil discourse with classmates, collaborate with diverse team members, empathize with varied perspectives and better position organizations to deal with rapidly changing environments. Teams will apply project management, human resources concepts and ethical frameworks to develop analytical, diagnostic, group-building, and professional presentation skills.
- **Assessment Method:** Students will utilize qualitative and quantitative methods to implement a cross-discipline innovation initiative that solves a complex problem or issue as the final project for TEM 431: Innovation Management. At graduation, students will be surveyed (Graduating Senior Report Card) to evaluate the quality of their university preparation to coordinate with others to solve problems or issues and after three years, the students will be surveyed again to measure the longer-term impact of their university preparation (via the University Alumni Survey).
- **Measures:** Direct measures will include feedback on the final presentation of the innovation initiative that solves a complex issue, based on the assignment rubric. Indirect measures will include feedback surveys and evaluations. The curriculum will be monitored and refined based on direct and indirect measures indicating the student's abilities to collaborate with diverse team members by developing professional team presentations to convey improvement plans and feedback from the Industry Advisory Board.

### Projected Enrollment for the First Three Years:

1st year: 150  
2nd year: 300

## EXECUTIVE SUMMARY

3rd year: 450

### **Evidence of Market Demand:**

The need for innovators who understand technology transformation is currently a high demand field. The 21st century worker will need a blended set of skills including human (collaboration, creativity), business (project management, synthesizing and integrating businesses) and digital (data decision making, analytics, mining) to be effective in this digital age.

Technology-based enterprises spend \$3T globally and \$1.5T domestically [1]. In 2017, out of 22.4 million posted jobs, 11.9 million were related to digital skills and there is an increase in demand of 32% over the past 5 years [2].

There is also a shortage of skills and a skills gap in strategy and planning [3]. There is an estimated skills gap of 4.4 million positions; in particular, there are large gaps in health care (1.2 million), business and financial operations (985k) and Computers and Mathematics (356k) [4]. Specifically, the number of positions in transformation skills (2 million) is considerable (US jobs: management analysis (900k), Market analysis (730k), and Training development (315k)). [5]

Since 2010, global GDP growth has been trending down from 5.5% to 3.5% in 2018 [6]. Innovators with new skillsets are needed to invigorate growth. In a poll of 505 businesses, 77% expect to add jobs due to digital/transformational projects over the next 5 years [7]. There will be 2 million unfilled jobs in manufacturing globally between 2015-2025 [8]. The operations aspect of the degree aligns with manufacturing. 75 to 375 million workers will need to switch to new fields and learn new skills [9]. The degree will allow workers to pivot into the state of the art.

[1] Forrester, Midyear Global Tech Market Outlook for 2017 to 2018, September 25, 2017.

[2] Burning Glass database, 2007-2017.

[3] The Digital Marketing Skills Gap in the USA, UK and Ireland, Digital Marketing Institute, December 2017.

[4] Bureau of Labor Statistics, "Employment Situation – December 2017", January 2018; Burning Glass.

[5] www.bls.com.

[6] International Monetary Fund 2010-2018.

[7] YouGov Survey, Appian, reported by Forbes, April 9, 2017.

[8] C. Giffi et al, The jobs are here, but where are the people?, Deloitte Insights, Nov 2018.

[9] McKinsey Global Institute, Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages, November 2017.

### **Similar Programs Offered at Arizona Public Universities:**

University of Arizona:  
BSBA in Operations Management

Northern Arizona University - No directly related programs

## EXECUTIVE SUMMARY

ASU's proposed program focuses on management **and** technology.

**New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

This proposal leverages existing Ira A. Fulton Schools of Engineering offerings. The faculty in Technological Entrepreneurship and Management already offer a BS and minor in Technological Entrepreneurship and Management, a BAS in Operations Management and Technology and an MSTech in Management of Technology. All but one of the required courses are already offered by Fulton faculty as required or elective courses for other Fulton degree programs. One faculty member will work with existing instructional design support to develop the new class (OMT 494: Prediction and Machine Learning).

This program will draw on the existing Fulton Schools infrastructure in advising and student services teams to support a rapidly growing student population. The school is confident they can handle first-year enrollment in the new program and will expand as needed using revenue from enrollment.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐

**Estimated Amount: \$525 per semester (resident); \$900 per semester (nonresident)**

**Program Fee Justification:**

The fee for undergraduate programs was changed last year and replaced previously approved undergraduate immersion program fees and differential tuition and applies to all undergraduate programs in the particular college, school or division.

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** None

## EXECUTIVE SUMMARY

### New Academic Program Request

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Bachelor of Science in Dietetics
<b>Academic Department:</b>
College of Health Solutions
<b>Geographic Site:</b>
Downtown Phoenix Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
120
<b>Proposed Inception Term:</b>
Fall 2020.
<b>Brief Program Description:</b>
<p>The establishment of a BS in Dietetics will offer students a clear route to the profession of dietetics. Dietetics can be defined as the branch of knowledge concerned with the diet and its effects on health, especially with the practical application of a scientific understanding of nutrition. The goal of this degree program is to prepare graduates for entry into and successful completion of the supervised practice in the dietetics profession and/or post-baccalaureate education. This program will also provide quality dietetics instruction to prepare graduates for careers in health care. This is an accredited Didactic Program in Dietetics as outlined by the accrediting body (Accreditation Council for Education in Nutrition and Dietetics). Dietetics plays an important role in ASU's fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.</p>
<b>Learning Outcome and Assessments:</b>
<p><b>Learning Outcome 1:</b> Graduates with a BS in Dietetics will be able to demonstrate how to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions on nutrition- related topics in a variety of healthcare environments.</p> <ul style="list-style-type: none"><li>● <b>Concepts:</b> Critical thinking; problem-solving; ethics; understand and identify evidence based, peer evaluated research.</li><li>● <b>Competencies:</b> Graduates will learn to evaluate professional, peer-reviewed research and understand the importance of and utilization of research when making nutrition practice decisions; and the role of ethics in making healthcare decisions during patient/client care.</li></ul>



## EXECUTIVE SUMMARY

- **Assessment Method:** Throughout the human nutrition course series, students will identify and evaluate professional research, recognize the importance of peer-reviewed research and its use throughout each practice decision. Students will be specifically assessed during a capstone human nutrition course (Advanced Human Nutrition II- NTR 441) utilizing a faculty developed rubric for the Evidence Based fact sheet assignment. The assignment will be monitored and refined based on measures indicating student ability to understand the concepts of utilization of peer reviewed, evidence-based research and their abilities to demonstrate ethical decision making in a variety of healthcare settings.
- **Measures:** Direct measures will include results of the Evidence Based fact sheet assignment, and the faculty developed rubric for the literature review final paper on a self-selected nutrition topic. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to discuss graduate's proficiency in the foundational knowledge requirements for Didactic Programs in Dietetics (DPD) as outlined by the program accrediting body.

**Learning Outcome 2:** Graduates with a BS in Dietetics will demonstrate effective and professional oral and written communication and documentation skills.

- **Concepts:** Effective communication styles, both oral and written including visual communication arts; reading levels; communication barriers including use of tone and body language in presentations; psychology.
- **Competencies:** The graduates will be able to effectively communicate in a professional tone and manner in both written and oral presentations; understand the importance of reading levels; create inclusive, respectful and civil discourse about nutrition; recognize communication barriers and potential ways to overcome barriers; and acknowledge significance in tone and body language while communicating information.
- **Assessment Method:** Throughout the human nutrition course series and nutrition communication courses, students will be exposed to a variety of communication methods and be required to utilize a variety of methods (oral, written and visual) in a diverse series of assignments/exercises. Specifically, students will be assessed during upper division human nutrition course (Advanced Human Nutrition I- NTR 440) utilizing a faculty developed rubric for a research paper critique and oral presentation on a selected micronutrient deficiency. Additionally, students will be assessed during a capstone nutrition communication course (Nutrition Counseling -NTR 350) utilizing a faculty developed rubric for a video speech on a nutrition-related topic of the student's choosing. The assignments will be monitored and refined based on measures indicating student ability to understand the concepts and importance of professionalism of both oral and written communication, recognition of reading levels and tone, and body language in oral presentations.
- **Measures:** Direct measures will include results of the research paper critique and oral presentation on a selected micronutrient deficiency, and the faculty developed rubric for video speech on a nutrition topic. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to discuss

## EXECUTIVE SUMMARY

graduates' proficiency in the foundational knowledge requirements for Didactic Programs in Dietetics as outlined by the accrediting body.

**Learning Outcome 3:** Graduates with a BS in Dietetics will effectively use the Nutrition Care Process to make decisions, identify nutrition-related problems and determine and evaluate nutrition interventions.

- **Concepts:** Nutrition Care Process; ethical decision making; nutrition-related problems; scientific dimensions of nutrition including organic chemistry, anatomy and physiology, microbiology and biochemistry; use of professional judgement.
- **Competencies:** Graduates will understand the Nutrition Care Process (a systematic problem solving method that dietetic practitioners use to critically think and make decisions to address nutritional related problems and provide safe, effective, high quality nutrition care) and become proficient in utilizing it when determining what intervention(s) should be made for a variety of nutrition-related problems; and the role of ethical decision making.
- **Assessment Methods:** Students will be assessed on their understanding and appropriate use of the Nutrition Care Process in the introductory Medical Nutrition Therapy course (Medical Nutrition Therapy I -NTR 341) utilizing a faculty developed rubric for an in-class case study. Additionally, students will be assessed on their abilities to implement the Nutrition Care Process effectively and appropriately in the capstone Medical Nutrition course (Medical Nutrition III -NTR 446) utilizing faculty developed rubric for an in-class lab on anemia. The assignments will be monitored and refined based on measures indicating student ability to understand the concepts and importance of the Nutrition Care Process in nutrition-related problems and ethical decision making.
- **Measures:** Direct measures will include results of the in-class lab on anemia and the case study. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to discuss graduate's proficiency in the foundational knowledge requirements for Didactic Programs in Dietetics as outlined by the accrediting body.

**Learning Outcome 4:** Graduates with a BS in Dietetics will apply management theories to the development of food management operations, community-based programs and other nutrition related programs or services.

- **Concepts:** Math; statistics; chemistry; leadership; program development; management theories and application in program development; United States government regulating bodies as American institutions, including the United States Department of Agriculture (USDA) and Federal Department of Agriculture (FDA); history and economies of food in the context of American governance.
- **Competencies:** Graduates will be proficient in identifying varying management theories, analyze the theories to determine effectiveness in program development, recognize the involvement of government regulating bodies within food service organizations, and recognize the difference between leadership and management.
- **Assessment Method:** Students will be assessed on their understanding of different management theories and concepts of program development in the second course of

## EXECUTIVE SUMMARY

the Food Service Management series (Nutrition Management and Leadership -NTR 344) during their second exam in the course. Additionally, students will be assessed on their application of management skills and development of a food service operation/program and theories while in the capstone Food Service Management course (Management of Food Service Systems -NTR 445) utilizing a faculty developed rubric on their lab group production day execution and team management. The assignments will be monitored and refined based on measures indicating student ability to understand the concepts and importance of various management theories, program development and leadership.

- **Measures:** Direct measures will include results of the lab group production execution and team management in the Management of Food Service Systems course, and the exam for Nutrition Management and Leadership. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to discuss graduate's proficiency in the foundational knowledge requirements for Didactic Programs in Dietetics as outlined by the accrediting body.

### **Projected Enrollment for the First Three Years:**

1st year: 250

2nd year: 300

3rd year: 400

### **Evidence of Market Demand:**

Gray Associates' Program Evaluation System provides an overall score for a specific program of interest based on individual scores within Student Demand, Employment Opportunities, Strategic Fit, and Competitive Intensity categories. Gray's robust database assembles information from various market drivers indicative of successful campus programs including student inquiries, applications, demographics, completions, job openings, job postings, and placement rates from sources including IPEDS, BLS/O\*NET, Department of Education, Burning Glass, U.S. Census, SkillsEngine, Google, and the National Higher Education Benchmarking Institute. The database was custom built for the College of Health Solutions to include up to ten markets including the Arizona and national market. Emsi Analytics and Burning Glass provide additional market analyses indicating high demand for dietetics. The market results from Gray Associates, Emsi, Burning Glass, the U.S. Bureau of Labor and Statistics (BLS), IPEDS, and the U.S. Census Bureau's American Community Survey are provided below and indicate positive growth in this career.

According to IPEDS, there were a total of 3,373 completions at 108 campuses of which 71% were at the bachelor's degree level in 2017. According to Burning Glass, there were 14,272 job postings related to this area which is a 1,170 year-over-year change compared to the previous year. Emsi states that there were 341,640 total job posting between January 2017 to August 2019, of which 73,766 were unique. Emsi projects a +13.4% change in occupations (70,799 jobs in 2017 to 80,263 jobs in 2024) for Dietitians and Nutritionists between 2017 to 2024. The U.S. Bureau of Labor and Statistics (BLS) reports the current employment for Dietetics/Dietitian to be 36,305 which is a compound annual growth rate of 4.6% for year-over

## EXECUTIVE SUMMARY

year employment, 6.4% for 3-year historic growth, and 5.8% for 5-year historic growth. The 10-Year forecast for compound annual growth rate is 1.3%. According to the American Community Survey administered by the U.S. Census Bureau, wages range between \$34,969 (age < 30) to \$64,720 (age 30-60).

### **Similar Programs Offered at Arizona Public Universities:**

University of Arizona:  
BS in Nutritional Sciences, emphasis in Dietetics

Northern Arizona University:  
BS in Health Sciences - Nutrition and Foods  
ASU's program focuses on dietetics and the role of registered dietitians.

### **New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

The BS in Dietetics program currently exists as a concentration BS in Nutrition (Dietetics). No new resource allocations are needed for the BS in Dietetics. The infrastructure of courses, labs, and faculty are already in place.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$385 (resident); \$660 (non-resident) per semester**

### **Program Fee Justification:**

The fee for undergraduate programs was changed last year and replaced previously approved undergraduate immersion program fees and differential tuition and applies to all undergraduate programs in the particular college, school or division.

**Specialized Accreditation?** YES ☒ NO ☐

**Accreditor:** This program will be accredited through the Accreditation Council for Nutrition and Dietetics (ACEND).

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Bachelor of Science in Food and Nutrition Entrepreneurship
<b>Academic Department:</b>
College of Health Solutions
<b>Geographic Site:</b>
Downtown Phoenix Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
120
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief Program Description:</b>
<p>Food and Nutrition Entrepreneurship graduates will be prepared for careers within companies looking to innovate in the delivery of products and services, research and development, management of foodservice and sustainable food systems, and nutrition and health communication and promotion, as well as have capabilities to launch startups and businesses focused on individual practice, consulting and new product and service development.</p> <p>This program will prepare students to work in the expanding field of food and nutrition related entrepreneurial ventures and program initiatives. Graduates will be poised to meet the demands within food and nutrition industries for the application of valid nutritional concepts. Experiential learning is integrated into the program's curriculum; students will have opportunities to work with external stakeholders and community partners specializing in food and nutrition entrepreneurship to gain real-world experience, develop professional relationships, and establish a foundation and direction for their future careers.</p> <p>This program includes exploration of important emerging topics, including developing an evidence-based online presence through social media, blogging, and podcasting; creating stand-alone businesses in nutrition, such as individual practices and consulting programs; and entrepreneurship in the food industry through development of new products and services. Food and nutrition entrepreneurship encompasses vital topics related to the business of food and health and advances ASU's commitment to health, innovation and entrepreneurship</p>

## EXECUTIVE SUMMARY

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Graduates of the program will demonstrate the ability to communicate evidence-based food and nutrition information and basic food science information.

- **Concepts:** Food science including organic chemistry and microbiology; communication styles and channels for diverse audiences and cultures; communication styles, both oral and written, including visual communication arts.
- **Competencies:** Graduates will be able to communicate with a variety of different audiences basic food and nutrition information through oral and written communication and simplify evidence-based research for the general public.
- **Assessment Method:** Students' demonstration of food and cooking techniques and ability to disseminate food and nutrition information through oral and recorded cooking labs will be assessed at multiple points during the semester in NTR 142 Applied Food Principles using a faculty designed rubric. Students in NTR 351 Nutrition Communication will be assessed on their creation of an online presence through social media deploying evidence-based food and nutrition information to the general public. Students in NTR 355 Eating for Lifelong Health or NTR 450 Eating through the Lifecycle will be assessed on their interpretation and oral and written presentation of food and nutrition information across age groups in a capstone project involving evidence-based research with a faculty developed rubric.
- **Measures:** Direct measures will include results of the cooking labs, the online presence rubric for social media, and the "In the News" assignment or comprehensive assignment. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to review graduates' ability to effectively communicate food and nutrition information to the general public.

**Learning Outcome 2:** Graduates of the program will demonstrate the ability to use food and nutrition data to make improvements in the workplace using the tenets of food safety.

- **Concepts:** Food safety; microbiology; food management in the workplace; menu development for diverse cultures; data gathering, interpretation and performance improvement.
- **Competencies:** Graduates will be able to utilize the tenets of good food safety to manage a kitchen, develop and follow recipes, and gather and interpret data to make improvements.
- **Assessment Method:** Students in NTR 445 Management of Food Service Systems will be assessed on a final capstone project including analyzing data for continuous quality improvement in a food service environment using a faculty developed rubric. Students in NTR 445 will also be assessed on their work and ability to deliver quality food and nutrition services in the Kitchen Café during student production days and execution of their final menu development and food management plan using a faculty developed rubric. Lastly, students will be assessed on their food safety knowledge through a national certification exam (ServSafe) taken early in NTR 445 and taken again if not successful in passing the first time.

## EXECUTIVE SUMMARY

- **Measures:** Direct measures will include results of the final capstone project portfolio, survey lab data collection and analysis, and ServSafe certification. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to review graduate's ability to use food and nutrition data to make improvements in the workplace using the tenets of food safety.

**Learning Outcome 3:** Graduates of the program will demonstrate application of principles of food management and systems in the provision of food and nutrition services to individuals and organizations.

- **Concepts:** Food management; social and behavioral sciences; evaluation and interpretation of food and nutrition data; budget review; social media and website design; human resources including ethics, civility, diversity and inclusion; United States government regulating bodies (United States Department of Agriculture (USDA), Federal Department of Agriculture (FDA), Department of Health and Human Services (DHHS)) and the history and economy of food.
- **Competencies:** Graduates will be able to run all aspects of a food service establishment.
- **Assessment Method:** Students in NTR 343 Food Service Purchasing will be assessed on their evaluation of a budget and financial data then creation of a final budget for a hospitality organization using a faculty developed rubric. Students in NTR 300 Computer Applications in Nutrition or NTR 302 Digital Technology in Nutrition Communication will be assessed on their management of technology resources specific to food service management, social media and/or website design using a faculty developed rubric on a final capstone project. Students in NTR 445 Management of Food Service Systems will be assessed on their management and application of the principles of human resource management in the Kitchen Café during student production days. Students in NTR 448 Community Nutrition will engage in civil discourse regarding the Supplemental Nutrition Assistance Program (SNAP), food waste, and public policy. Students are assessed by their ability to engage in discussions both as a large and small group in oral and written formats.
- **Measures:** Direct measures will include results of the budget for a hospitality organization based on the faculty developed rubric, the comprehensive assignment on technology resources, and the lab production day management. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board to review graduates competency in model practices for strategic application of principles of food management and systems in the provision of services to individuals and organizations.

**Learning Outcome 4:** Graduates of the program will demonstrate an understanding of a food and nutrition business, individual practice, new product and service development and be able to apply skills learned to the workforce.

- **Concepts:** Food science, chemistry and microbiology; food and nutrition marketing, business creation and economics; communication styles and channels for diverse audiences, and cultures; effective communication styles, both oral and written

**EXECUTIVE SUMMARY**

- **Competencies:** Graduates will be proficient in food and nutrition information and how to parlay that into a business or new product creation.
- **Assessment Method:** Students in NTR 345 Development of Healthy Cuisine will be assessed on their creation of menus and new food products based on nutrition and consumer demand using a faculty developed rubric. Students in NTR 442 Experimental Foods will be assessed on their capstone project of developing a new food product, packaging the product and marketing the product using a faculty developed rubric. Students in NTR 401 Preprofessional Preparation in Nutrition will be assessed on their ability to apply learned skills to an assigned experiential learning location (60 hours) using a faculty developed rubric completed by the workplace supervisor where student completed the hours. Students in NTR 448 Community Nutrition will be assessed on their development and presentation of a community nutrition lesson for a specific age group in a final capstone presentation using a faculty developed rubric.
- **Measures:** Direct measures will include the capstone project focusing on menu creation or the development of a new food product, the experiential learning component, and the Nutrition Education Lesson presentation. The curriculum will be monitored and refined based on direct and indirect measures of exit surveys including graduating senior and alumni surveys, as well as annual meetings with a nutrition advisory board discussing graduates understanding of food and nutrition business, individual practice, new product and service development.

**Projected Enrollment for the First Three Years:**

1<sup>st</sup> Year: 150

2<sup>nd</sup> Year: 250

3<sup>rd</sup> Year: 400

**Evidence of Market Demand:**

Gray Associates Program Evaluation System provides an overall score for a specific program of interest based on individual scores within Student Demand, Employment Opportunities, Strategic Fit and Competitive Intensity categories. Programs in the national undergraduate category for health and health related programs (based on 2-Digit CIP codes) could score anywhere from a 35 (extremely high market demand) to a -29 (extremely low market demand). The undergraduate national market for employment in Food, Nutrition, and Wellness Studies, General (CIP 19.0501), Foodservice Systems Administration/Management (CIP 19.0505), and Entrepreneurship/Entrepreneurial Studies (CIP 52.0701), scored a 19, 9, and 22 respectively according to Gray's Program Evaluation System. This means that there is a moderate (score of 9) to very high (scores of 19 and 22) market demand for the areas within the proposed Food and Nutrition Entrepreneurship BS program. According to IPEDS, there were a total of 6,564 completions at 266 campuses with bachelor's degree level completions ranging from 47% (Entrepreneurship) to 74% (Foods, Nutrition, and Wellness Studies) in 2017. Distance education was offered by institutions between 2%-10% for these areas. According to Burning Glass, there were 62,278 job postings related to these areas.

According to Indeed.com, a popular job search website, there are 385 current job postings in high-level food manufacturing which include positions for Food and Beverage Operations



## EXECUTIVE SUMMARY

Manager, V. P. of Food Safety, Director of Food Manufacturing, Sustainable Food and Water Program Director, and Wellness Specialist. According to the data below, the forecast for these types of career is positive and growing.

According to the Bureau of Labor Statistics, current employment in these fields totals 286,650. There was between a 2.1% to 7.9% change in year-over year employment, 4.9% to 7.8% increase in 3-year historic growth (compound annual growth rate), and a 4.2% to 7.4% increase in 5-year historic growth (compound annual growth rate) for these fields. The 10-Year forecast for compound annual growth rate for these fields is between 0.9% to 1.2%. According to the American Community Survey administered by the U.S. Census Bureau, wages for these fields range between the lowest at \$32,431 (age < 30) to the highest at \$94,761 (age 30-60).

### **Similar Programs Offered at Arizona Public Universities:**

University of Arizona:  
BS in Nutrition and Food Systems  
Northern Arizona University:  
BS in Hotel and Restaurant Management  
BS in Health Sciences - Nutrition and Foods

ASU's program provides instruction in both food business and entrepreneurship, as well as the nutritional science curriculum.

### **New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

The BS in Food and Nutrition Entrepreneurship will utilize resources that are currently in place for the nutrition degree programs in the College of Health Solutions. No new faculty, courses, assistantships, or scholarships are needed to launch this program. Existing resources will be arranged and deployed to maximize utility and efficiencies.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$385 (resident); \$660 (non-resident) per semester**

### **Program Fee Justification:**

The fee for undergraduate programs was changed last year and replaced previously approved undergraduate immersion program fees and differential tuition and applies to all undergraduate programs in the particular college, school or division.

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** N/A

**EXECUTIVE SUMMARY**

**New Academic Program Request**

University: Arizona State University

<b>Name of Proposed Academic Program:</b>
Bachelor of Arts in Digital Media Literacy
<b>Academic Department:</b>
Walter Cronkite School of Journalism and Mass Communication
<b>Geographic Site:</b>
Downtown Phoenix Campus
<b>Instructional Modality:</b>
Immersion and online
<b>Total Credit Hours:</b>
120
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief Program Description:</b>
<p>The immersive nature of digital media has opened immense opportunities for positive change through expanded access to information about health care, government, education, conflict, sustainability and many other topics. But it has also intensified the spread of misinformation, which now threatens our communities and our democracy. The Aspen Institute and the Knight Commission on Trust, Media and Democracy's recent report <i>Crisis in Democracy: Renewing Trust in America</i>, called for a national effort to "provide students of all ages with basic civic education and the skills to navigate online safely and responsibly."</p> <p>This new bachelor's degree program establishes ASU as a central leader in addressing this urgent challenge. The program is rooted in the traditions of the liberal arts, with deep focus on critical thinking, communication, ethical decision making, global awareness and problem solving. It teaches students to apply these skills in the context of digital media, understanding how information and technology affect our personal, social and professional interactions. Graduates of the program will be able to use cutting-edge tools and tactics to analyze the context of the media we consume. They will be able to verify and interpret information to make decisions that improve their own lives and that benefit our larger society. Nowhere are these digital media literacy skills more important than in the workplace. Organizations of all sizes, public and private, are learning to cope with unprecedented change in how we interact with and use information. This program will prepare students to be at the forefront of important strategic and ethical issues related to digital media, including automation, verification, security and privacy.</p> <p>This program aligns with ASU Design Aspirations including transforming society, fusing intellectual disciplines, being socially embedded, engaging globally and enabling student</p>

## EXECUTIVE SUMMARY

success. The New American University will be a leader in bringing 21st-century literacies to the people who need them.

### Learning Outcomes and Assessment Plan:

**Learning Outcome 1:** Graduates of the program will demonstrate that they can critically evaluate the accuracy and credibility of digital media sources and information.

- **Concepts:** Scientific method; critical thinking; data literacy, statistical significance and quantitative reasoning; social and behavioral science research methods; intellectual property and attribution of external sources; differentiating fact from opinion and misinformation; techniques of persuasion; the sources of misinformation; the economic and political drivers of misinformation campaigns and how misinformation spreads online.
- **Competencies:** Students will apply skills in statistical analysis, image verification, contextual evaluation, inference, communication and critical thinking to determine the credibility of information delivered through digital media and to create their own content for an online audience.
- **Assessment Methods:** In MCO 426: Digital Media Literacy II, students will create a portfolio of digital content, focused on a niche topic that evaluates, describes and attributes information from external sources. Outside industry evaluators will assess a sample of that work using a rubric of professional standards. In MCO 425: Digital Media Literacy I, students will complete an exam that presents a series of online stories. For each set of stories, students will have to identify which are verifiable news stories, which are fake news stories and which are opinion or satire. In addition, in Cronkite course evaluations, students self-report the extent to which the course taught them how to conduct research and evaluation information; write correctly and clearly; critically evaluate work for accuracy, fairness, clarity and grammatical correctness; and apply basic numerical and statistical concepts.
- **Measures:** The curriculum will be refined based on the assessment of student work in MCO 425 and MCO 426, feedback from industry professionals and indirect measures via student course evaluations.

**Learning Outcome 2:** Graduates will demonstrate the ability to participate in real-world digital media networks securely and ethically.

- **Concepts:** Risk assessment; privacy; how commercial interests drive data collection by corporations such as Google and Facebook; cybersecurity; national and international intellectual property law; personal ethics and responsibilities; corporate ethics and responsibilities; techniques of civil discourse; First Amendment right to freedom of expression; how search engine and social network algorithms work; economics of online advertising and commerce; intercultural understanding and inclusion, and the sociopolitical influences of digital media.
- **Competencies:** Students will apply skills in writing, quantitative analysis, photo editing, attribution of sources and production of graphics in creating secure digital content and ethical guidelines for digital communities. Writing about a niche topic

## EXECUTIVE SUMMARY

against regular deadlines will require students to apply skills in time management and problem solving.

- **Assessment Methods:** In MCO 426: Digital Media Literacy II, students create a personal website using appropriate technology. They must develop a code of ethics and guidelines for civil discourse within their online space and apply them in writing blog posts about a niche topic. Outside industry professionals will evaluate that written content and the code of ethics against a rubric of professional standards. In addition, in Cronkite course evaluations, students self-report the extent to which the course taught them how to understand and apply ethical principles; understand concepts and apply theories in the presentation of images and information; apply appropriate communications tools and technologies; and think critically, creatively and independently.
- **Measures:** The curriculum will be refined based on feedback from portfolio reviews by industry professionals and indirect measures via student course evaluation feedback.

**Learning Outcome 3:** Graduates will apply their understanding of how information ecosystems work to assist others in learning how to participate in real-world digital media networks securely and ethically.

- **Concepts:** How communication networks operate; the history and evolution of the internet; centralized and decentralized control of the digital media ecosystem; threat modeling; the economic, social and political factors that influence what consumers see online; persuasive rhetoric and techniques for reaching diverse audiences.
- **Competencies:** Students apply skills in written and oral communication, critical thinking and problem solving, as well as global, historical and cultural awareness to teach other people how information ecosystems work and how best to navigate them.
- **Assessment Methods:** In MCO 425: Digital Media Literacy I, students will create a public service announcement, including oral communication and visual images, to educate an audience on how to best behave online. Industry professionals will evaluate a sample of these submissions using a rubric professional standards for accuracy and persuasive messaging. In MCO 494: Freedom of Expression in the 21st Century, students will write a set of guidelines for personal digital privacy and security. Their guidelines will be scored against a standardized rubric of best practices. In addition, in Cronkite course evaluations, students self-report the extent to which courses taught them to understand the history and role of professionals and institutions in shaping communications, and to understand the diversity of peoples and cultures and the impact of mass communication in a global society.
- **Measures:** The curriculum will be refined based reviews by industry professionals and indirect measures via student course evaluation feedback.

**Learning Outcome 4:** Graduates will demonstrate that they can explain the role of communication in a free society.

- **Concepts:** The American institutions of the U.S. Constitution and Bill of Rights; the role of freedom of expression throughout U.S. history; principles and institutions of American democracy; freedom of expression through literature and fine arts; practices of civic engagement; the role of the internet in empowering individual expression,

## EXECUTIVE SUMMARY

inclusion and distribution of diverse perspectives; global threats to free expression, and differences between communication channels.

- **Competencies:** Graduates will use written and oral communication to apply understanding of these concepts in explaining the role of communication in a free society.
- **Assessment methods:** In MCO 494: Freedom of Expression in the 21<sup>st</sup> Century and MCO 425: Digital Media Literacy I, relevant assignments are scored using a standardized rubric for clarity of written and oral communication an accuracy and complexity of explanations. In addition, in Cronkite course evaluations, students self-report the extent to which courses taught them to understand and apply the principles and laws of freedom of speech and press.
- **Measures:** The curriculum will be refined based on scoring of student work against standardized, professional rubrics and indirect measures via student course evaluation feedback.

### Projected Enrollment for the First Three Years:

1<sup>st</sup> Year: 50  
2<sup>nd</sup> Year: 150  
3<sup>rd</sup> Year: 300

### Evidence of Market Demand:

Employers in virtually every industry are grappling with how to leverage digital media to better inform consumers while combating misinformation. The skills students will develop in this program will prepare them for careers in a variety of fields, including as media and communication workers, marketing specialists, and public relations and fundraising managers— all positions the U.S. Department of Labor identifies as having “bright outlooks.” Emsi Analyst reports an average of 34,464 monthly job postings for public relations specialists, with approximately 2 percent growth in the past year. Digital media literacy skills will set graduates apart from their peers in competition for these jobs, as employers look for candidates with deep understanding of how the public perceives and evaluates media in order to effectively communicate messages for their brands.

Technology companies including Google, Apple, Microsoft and Facebook are among those that are making sizable investments to counter misinformation and improve digital literacy skills. When announcing a recent initiative, Apple CEO Tim Cook said, “News literacy is vital to sustaining a free press and thriving democracy, and we are proud to be collaborating with organizations on the front lines of this effort.”

### Similar Programs Offered at Arizona Public Universities:

University of Arizona:  
BA in Journalism - Digital Journalism emphasis

Northern Arizona University  
English - Rhetoric, Writing and Digital Media Studies

## EXECUTIVE SUMMARY

ASU's proposed program will focus on digital media analysis and graduates will assist others in learning how to participate in real-world digital media networks.

**New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):**

This proposal leverages existing Cronkite School offerings, reorganized and delivered in this new degree program. All but one of the required courses are already being offered by Cronkite faculty as required or elective courses for other Cronkite degree programs. One faculty member will work with existing instructional design support to develop the new class, which will be available as an elective for all ASU students. The school expects this course to draw broad enrollment, which will more than cover the cost of development and delivery. The Cronkite School has recently expanded its student services team to support a rapidly growing student population. The school is confident they can handle first-year enrollment in the new program and will expand as needed using revenue from enrollment.

**Program Fee/Differentiated Tuition Required?** YES ☒ NO ☐  
**Estimated Amount: \$525 (resident); \$900 (nonresident) per semester**

**Program Fee Justification:**

The fee for undergraduate programs was changed last year and replaced previously approved undergraduate immersion program fees and differential tuition and applies to all undergraduate programs in the particular college, school or division.

**Specialized Accreditation?** YES ☐ NO ☒

**Accreditor:** None

## EXECUTIVE SUMMARY

**Item Name:** Request for New Academic Units for Arizona State University

☒ Action Item

**Requested Action:** Arizona State University asks the board to approve the new academic unit requests effective in the 2020-2021 academic year.

### Background/History of Previous Board Action

As provided in the board policy, new program requests may be submitted throughout the year with the approval of the Academic Affairs and Educational Attainment Committee.

### Discussion

- In keeping with the goal to establish ASU as a leading global center for interdisciplinary research, discovery and development, the College of Global Futures will become a prominent American center for innovation and entrepreneurship in biomimicry, complex adaptive systems, the future of innovation in society, and sustainability.
- The College of Global Futures will house the School of Sustainability, School for the Future of Innovation in Society, and the proposed School of Complex Adaptive Systems.
- The College of Global Futures will be funded through internal reallocation of resources. No net new expenses are anticipated.
- ASU proposes the establishment of the School of Complex Adaptive Systems to leverage trans-disciplinary relationships to address complex global challenges in health, sustainability, security and education by creating entirely new technologies and novel solutions. This requires integration of diverse research disciplines across the university and building an extended network of global collaborations.
- No net new resources will be required. Existing resources in the Complex Adaptive Systems Initiative will be reallocated to fund the school, along with revenues generated through enrollments.
- The School of Film proposed by ASU will be the largest, most egalitarian, most innovative film school in the nation, with a base on the Tempe campus, state-of-the-art production facilities in Mesa, and direct access to the industry through ASU's evolving presence in the Los Angeles Herald Examiner building.

### Contact Information:

Mark Searle, ASU

Chad Sampson, ABOR

[mark.searle@asu.edu](mailto:mark.searle@asu.edu)

[chad.sampson@azregents.edu](mailto:chad.sampson@azregents.edu)

480-965-9585

602-229-2512

## **EXECUTIVE SUMMARY**

---

- The new School of Music, Dance and Theatre combines the current School of Music and the dance and theatre areas of the current School of Film, Dance and Theatre, which will be disestablished. The synergies created by housing music, dance and theatre in one school will boost national reputation, grow enrollment, and serve students more effectively.
- No new net resources are required in this reorganization. Existing resources associated with dance and theatre will move to the School of Music, Dance and Theatre. The Film School's financial needs will be met by existing resources, and by the resources planned for the Mesa facility and the Herald Examiner building.

### **Committee Review and Recommendation**

The Academic Affairs and Educational Attainment Committee reviewed this item at its March 19, 2020 meeting, and recommended forwarding the item to the full board for approval.

### **Statutory/Policy Requirements**

ABOR Policy 2-223.C. "Academic Organizational Units"



## EXECUTIVE SUMMARY

### New Academic Organizational Unit Request

University: Arizona State University

Name of Proposed Organizational Unit:
College of Global Futures
Is the proposed unit an amalgamation/reorganization of existing units? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Geographic Site:
Tempe campus
Proposed Inception Term:
Fall 2020
Brief explanation of the need for the new unit:
<p>Aligning with the goal to establish ASU as a leading global center for interdisciplinary research, discovery and development, the College of Global Futures will become a prominent American center for innovation and entrepreneurship in biomimicry, complex adaptive systems, the future of innovation in society, and sustainability. The College of Global Futures will solidify ASU's national standing in academic quality and impact to global futures; highlight ASU as a leading global center for interdisciplinary research, discovery and development in global futures; and enhance ASU's local impact and social embeddedness in topics related global futures. The College of Global Futures will house the School of Sustainability, School for the Future of Innovation in Society and proposed School of Complex Adaptive Systems.</p>
<b>Degree Programs housed in new unit:</b>
<p>School of Sustainability:</p> <ul style="list-style-type: none"> <li>BA in Sustainability</li> <li>BS in Sustainability</li> <li>BS in Sustainable Food Systems</li> <li>MA in Sustainability</li> <li>MS in Sustainability</li> <li>MS in Global Sustainability Science</li> <li>EMSL in Sustainability Leadership</li> <li>MSL in Sustainability Leadership</li> <li>MSUS in Sustainability Solutions</li> <li>MAP in Sustainable Energy</li> <li>MSP in Sustainable Energy</li> <li>MSE in Sustainable Engineering</li> <li>PhD in Sustainability</li> <li>PhD in Sustainable Energy</li> </ul> <p>School for the Future of Innovation in Society:</p>

## EXECUTIVE SUMMARY

---

BA in Innovation in Society  
BS in Innovation in Society  
MA in Applied Ethics  
MS in Global Technology and Development  
MSTP in Science and Technology Policy  
PhD in Human and Social Dimensions of Science and Technology  
PhD in Innovation in Global Development

School of Complex Adaptive Systems:

MS in Biomimicry  
MS in Complex Systems Science

Resource Implications:

The College of Global Futures will be funded through internal reallocation of resources. No net new expenses are anticipated.

Projected number of students served:

Currently, the School of Sustainability serves 627 undergraduate students and 222 graduate students. The School for the Future of Innovation in Society serves 49 undergraduate students and 168 graduate students. The MS in Biomimicry enrolls 74 students. Anticipated enrollment growth for all programs is 8 percent per year.

## EXECUTIVE SUMMARY

### New Academic Organizational Unit Request

University: Arizona State University

<b>Name of Proposed Organizational Unit:</b>		
School of Complex Adaptive Systems		
<b>Is the proposed unit an amalgamation/reorganization of existing units?</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
<b>Geographic Site:</b>		
Tempe campus		
<b>Proposed Inception Term:</b>		
Fall 2020		
<b>Brief explanation of the need for the new unit:</b>		
<p>In keeping with the goal to establish ASU as a leading global center for interdisciplinary research, discovery and development, the School of Complex Adaptive Systems will leverage trans-disciplinary relationships to address complex global challenges in health, sustainability, security and education by creating entirely new technologies and novel solutions. This requires integration of diverse research disciplines across the university and building an extended network of global collaborations.</p>		
<b>Degree Programs housed in new unit:</b>		
<p>MS in Biomimicry  MS in Complex Systems Science</p> <p>Faculty are conducting market analyses for additional degrees in complex adaptive systems at the undergraduate and doctoral levels.</p>		
<b>Resource Implications:</b>		
<p>No net new resources will be required. Existing resources in the Complex Adaptive Systems Initiative will be reallocated to fund the school, along with revenues generated through enrollment.</p>		
<b>Projected number of students served:</b>		
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>
75	82	89

**EXECUTIVE SUMMARY**

**New Academic Organizational Unit Request**

<b>Name of Proposed Organizational Unit:</b>				
The Film School				
<b>Is the proposed unit an amalgamation/reorganization of existing units?</b> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>				
<b>Geographic Site:</b>				
ASU Tempe campus, Mesa facility, and Los Angeles Herald Examiner building				
<b>Proposed Inception Term:</b>				
Fall 2020				
<b>Brief explanation of need for new unit:</b>				
<p>The Film School of ASU will be the largest, most egalitarian, most innovative film school in the nation, with a base on the Tempe campus, state-of-the art production facilities in Mesa, and direct access to the industry through ASU's evolving presence in the Los Angeles Herald Examiner building. The Film School of ASU will bridge the three locations and will also be the most diverse film school in the nation, standing in stark contrast to elite film programs elsewhere. The film program at ASU is one of the fastest growing in the country, expanding from 0 to over 700 students in eight years.</p>				
<b>Degree Programs housed in new unit:</b>				
<p>BA in Film</p> <p>Faculty are conducting market analyses of the need for skills and competencies in film that would be the basis for other film degrees at the graduate and undergraduate levels.</p>				
<b>Resource Implications:</b>				
<p>No new net resources required. Program needs will be met by existing resources, and by the resources planned for the Mesa facility and the Herald Examiner building.</p>				
<b>Projected number of students served:</b>				
<b>Student Majors Headcount</b>	<b>(Fall)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>
The Film School		723	774	828

**EXECUTIVE SUMMARY**

**New Academic Organizational Unit Request**

<b>Name of Proposed Organizational Unit:</b>
School of Music, Dance and Theatre
<b>Is the proposed unit an amalgamation/reorganization of existing units? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></b>
<b>Geographic Site:</b>
Tempe campus
<b>Proposed Inception Term:</b>
Fall 2020
<b>Brief explanation of need for new unit:</b>
The new School of Music, Dance and Theatre combines the current School of Music and the dance and theatre areas of the current School of Film, Dance and Theatre. The synergies created by housing these related performance/presentation arts in one school will boost national reputation, grow enrollment, and serve students more effectively.
<b>Degree Programs housed in new unit:</b>
BA in Music BA in Performance and Movement BA in Theatre BFA in Dance BMUS in Music Learning and Teaching BMUS in Music Therapy BMUS in Performance BMUS in Theory and Composition  DMA in Music MA in Music MA in Theatre MFA in Dance MFA in Theatre MM in Composition MM in Music Learning and Teaching MM in Music Therapy MM in Performance PHD in Music PHD in Theatre

EXECUTIVE SUMMARY

Resource Implications:

No new net resources are required. Existing resources associated with dance and theatre will move to the School of Music, Dance and Theatre.

Projected number of students served:

Student Majors Headcount	(Fall)	2020-21	2021-22	2022-23
School of Music, Dance and Theatre		1,230	1,280	1,331



# ARIZONA BOARD OF REGENTS

ASU ♦ NAU ♦ UA

January 16, 2020

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis

Subject: Request for Organizational Change


---

Per ABOR Policy 2-223.B.6., Arizona State University requests the following organizational change in The College of Liberal Arts and Sciences:

- Move Master of Arts in American Studies, from the School of Historical, Philosophical and Religious Studies to the School of Social Transformation

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved: 

John Arnold, Executive Director

Date: 2/4/2020

Attachment

## REGENTS

Fred DuVal ♦ Jay Heiler ♦ Ram Krishna ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry Penley ♦ Executive Director John Arnold

2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004  
602.229.2500 | AZREGENTS.EDU

## EXECUTIVE SUMMARY

### ARIZONA STATE UNIVERSITY ACADEMIC ORGANIZATIONAL CHANGES

**Table 1: Proposed Moves of Academic Programs**

Current Program	College/School (location)	Action requested	Justification/Brief Description	Impact on Current Students
<b>Graduate Programs To Be Moved</b>				
Master of Arts in American Studies	The College of Liberal Arts and Sciences <i>School of Historical, Philosophical and Religious Studies</i> (Tempe)	Move program: From: School of Historical, Philosophical and Religious Studies To: School of Social Transformation	The faculty in the School of Historical, Philosophical and Religious Studies who had initiated and supported the MA in American Studies have left the university. Many faculty in The College of Liberal Arts and Sciences' School of Social Transformation (SST) who were part of the original planning of the MA will continue the program. In addition, the majority of the faculty in SST work in American Studies. The SST faculty are engaged in the work currently being done in the field and are at the leading edge of American Studies. Social Transformation is the most logical place to house the degree program.	There are no students currently in the master's degree program.





ARIZONA BOARD OF  
**REGENTS**

ASU ♦ NAU ♦ UA

November 8, 2019

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis *cl*

Subject: Request for Academic Program Name Change

---

Per ABOR Policy 2-223-B.6, Arizona State University requests to change the following:

- Bachelor of Science in Nutrition to Bachelor of Science in Nutritional Sciences
- Bachelor of Arts in American Cultures to Bachelor of Arts in American Studies
- Master of Science in Information Management to Master of Science in Information System Management

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved: 

John Arnold, Executive Director

Date: 11/14/19

Attachment

**REGENTS**

Fred DuVal ♦ Jay Heiler ♦ Ram Krishna ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry Penley ♦ Executive Director John Arnold

2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004  
602.229.2500 | [AZREGENTS.EDU](http://AZREGENTS.EDU)



# ARIZONA BOARD OF REGENTS

ASU ♦ NAU ♦ UA

November 8, 2019

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis *CS*

Subject: Request for Organizational Unit Change

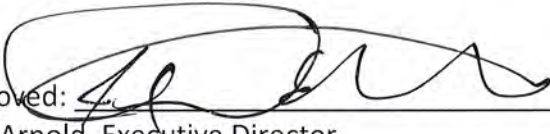
---

Per ABOR Policy 2-223-C.4, Arizona State University requests to move the following academic programs:

- Move Master of Liberal Studies from The College of Liberal Arts and Sciences to College of Integrative Sciences and Arts
- Move Doctor of Philosophy in Biological Design from School of Biological and Health Systems Engineering; Ira A. Fulton Schools of Engineering to School for Engineering of Matter, Transport and Energy; Ira A. Fulton Schools of Engineering

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved: 

John Arnold, Executive Director

Date: 11/25/19

Attachment

## REGENTS

Fred DuVal ♦ Jay Heiler ♦ Ram Krishna ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry Penley ♦ Executive Director John Arnold

2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004  
602.229.2500 | AZREGENTS.EDU



## EXECUTIVE SUMMARY

### ARIZONA STATE UNIVERSITY ACADEMIC ORGANIZATIONAL CHANGES

**Table 1: Proposed Moves of Academic Programs**

Current Program	College/School (location)	Action requested	Justification/Brief Description	Impact on Current Students
<b>Graduate Programs To Be Moved</b>				
Master of Liberal Studies	The College of Liberal Arts and Sciences (Tempe)	Move program: From: The College of Liberal Arts and Sciences To: College of Integrative Sciences and Arts	The Master of Liberal Studies better fits within the College of Integrative Sciences and Arts because it aligns well with their already existing Bachelor of Arts degree in Liberal Studies. The Humanities in The College of Liberal Arts and Sciences already have numerous master's programs and the Master of Liberal Studies is less robust than it would be elsewhere as a result.	No impact on students expected as the program will continue under the same degree name in the College of Integrative Sciences and Arts.
Doctor of Philosophy in Biological Design	Ira A. Fulton Schools of Engineering (Tempe)	Move program: From: School of Biological and Health Systems Engineering; Ira A. Fulton Schools of Engineering To: School for Engineering of Matter, Transport and Energy; Ira A. Fulton Schools of Engineering	The Biological Design PhD program is highly interdisciplinary involving faculty and PhD students who perform research in bio-health, bio-energy, and bio-environmental areas. In contrast to School of Biological and Health Systems Engineering, which primarily focuses on bio-health research, the School for Engineering of Matter, Transport and Energy has a much broader portfolio, which covers all research areas in the Biological Design PhD program. The broader scope in research will enable the program to be more inclusive and more importantly, promote more interdisciplinary research collaboration and student training.	The impact on students will be positive, as the School of Engineering of Matter, Transport and Energy will be a more appropriate and interdisciplinary unit for the program.

## EXECUTIVE SUMMARY

			<ul style="list-style-type: none"> <li>• 5 job postings for every 1 job, indicating that organizations may be trying harder to hire for these positions. 4:1 is typical (Program Overview)</li> <li>• Top Hard Skills (Job Posting Analysis)</li> <li>• The term “information management” only appears in 29% of job postings</li> <li>• The term “information systems” appears in 77% of relevant job postings</li> </ul> <p>Google Trends:</p> <ul style="list-style-type: none"> <li>• “Information management” is searched about half as often as “information systems” when searching for higher education.</li> <li>• The #3 related search for “information systems” is “best master’s degree” because “informatics” and “health informatics” are breakout searches, meaning the term had few, if any, prior searches and is rising in popularity</li> </ul> <p>Summary</p> <p>Effective lead generation is now, in many ways, inextricably linked to highly targeted search engine optimization and management. The current title of the degree does not allow the college to maximize the search engine planning for the degree, and so the change from the MS in Information Management to MS in Information Systems Management addresses this issue by providing a strong, aligned tool in the search engine lead generation sense.</p> <p>Information Systems Management may not be the most dramatic prima facie change, but it addresses the enrollment concerns and keeps the degree clearly distinct from more technical degrees in Computer Science or Information Technology.</p>	degree for purposes of long-term recognition and career success.
--	--	--	---	--



## EXECUTIVE SUMMARY

			<p>The faculty who are designing the program are active members of the American Studies Association, and the learning outcomes, concepts and competencies of the new degree are based in American Studies.</p> <p><b>Market Need:</b></p> <p>An American Studies bachelor's degree will provide our students cross-disciplinary knowledge and skills focused on understanding civic engagement and working productively with diverse groups and communities. With an emphasis on examining the United States and its people from a variety of perspectives, the College Board identifies a number of career fields well suited for American Studies majors including advertising, marketing, and public relations; curators; K-12 educators; government executives and legislators; news analysts, reporters, and correspondents; and public interest lawyers (<a href="https://bigfuture.collegeboard.org/majors/area-ethnic-cultural-gender-studies-area-studies-american-studies">https://bigfuture.collegeboard.org/majors/area-ethnic-cultural-gender-studies-area-studies-american-studies</a>).</p> <p>The outlook on these occupational categories is strong. The O*NET review of Community and Social Service Specialists, for example, projects faster than average growth for this career field nationally (7-10% annual growth on average with an average salary in 2018 of \$42,620) and exceptionally strong growth in Arizona (with job openings growing 30% between 2016 and 2026) (<a href="https://www.onetonline.org/link/summary/21-1099.00">https://www.onetonline.org/link/summary/21-1099.00</a>).</p> <p>Emsi labor market analyses echo these trends, with career opportunities for Community and Social Service Specialists expected to increase more than 7% over the next 5 years. The top posted job titles under this occupational category include: community outreach representatives; organizers; social service specialists; community coordinators; customer service representatives; probation officers; program coordinators (community and social service); education specialists (community and social service); training and development specialists; and volunteer coordinators.</p>	
--	--	--	---	--

## EXECUTIVE SUMMARY

Rename Existing Graduate Degree			
Master of Science in Information Management	W. P. Carey School of Business  <i>Department of Information Systems</i> (Tempe)	Rename to: ✓ Master of Science in Information Systems Management	<p><b>Description and Justification:</b></p> <p>After almost 6 years of declining enrollment, this MS was formally evaluated, and the study yielded the name of the program as a primary concern. The proposed change is from the existing program name, Master of Science in Information Management, to a new title of Master of Science in Information Systems Management.</p> <p>Information Management is a term that has morphed into something different from the way the phrase was used more than a decade ago when the degree was established. Now Information Management is an area of study that encompasses Information Systems among many others within the discipline. The change in name to Information Systems Management addresses this challenge by more clearly indicating the content of the degree: information systems and management.</p> <p>Further, a major concern this will address is that over the last several years, "Information Management" has shifted to represent disciplines like Library Sciences or Content Management. Internet search results are oriented in this way, as are most of our peers and competitors, who list their programs as Information Systems Management. Feedback from prospective students as well as targeted search engine queries associate Information Management as one of the core disciplines of Library Sciences, which has generated confusion in the market as to what the degree truly offers. This change addresses this issue by explicitly stating the content of the degree in the very title. This name was chosen from the name of the offering department, and to stay distinct from other programs at the university.</p> <p><b>Market Need:</b></p> <p>Emsi Analyst Market Data:</p> <ul style="list-style-type: none"> <li>11% predicted growth in the next 10 years in Computer and Information Systems Managers (Occupation Overview)</li> </ul>
			<p>There is no expected impact on current students, as current students will graduate with the current program name. As the alumni and current students serve as de facto ambassadors for the new name, all alumni will share the positive impact on long-term employment. The rename allows data about the name and student success to guide our decision: feedback from applicants who decline their offer of admission to the program, employers, current students, and alumni have shared that the Information Management name requires explanation, and that the current name does not effectively convey what students learn in the program. As such, the college believes the program name much more clearly defines the</p>



## EXECUTIVE SUMMARY

### ARIZONA STATE UNIVERSITY ACADEMIC PROGRAM CHANGES

**Table 1: Proposed Rename of Existing Degrees**

Current Program	College/School (location)	Action Requested	Brief Description, Justification and Identified Market Need	Impact on Current Students
Bachelor of Science in Nutrition	College of Health Solutions (Downtown Phoenix)	Rename to: Bachelor of Science in Nutritional Sciences ✓	<p><b>Description and Justification:</b></p> <p>The College of Health Solutions is requesting a name change from a BS in Nutrition to a BS in Nutritional Sciences. The name Nutritional Sciences will leverage current strengths while orienting the program to the future of cutting-edge solutions in health. Current nutrition degree offerings reflect a traditional academic structure in the discipline of nutrition; with this name change, the nutrition program leverages ASU's reputation for innovative, solutions-based education.</p> <p>Nutritional Sciences combines concepts of healthy living and a healthy environment; metabolic, applied and physiological research; and nutrition education. This name change will allow the college to set up new, innovative concentrations in nutrition solutions and provide additional value to students by offering new degrees that target other areas of nutrition studies, including food entrepreneurship and dietetics.</p> <p><b>Market Need:</b></p> <p>Within the undergraduate national market, the Nutrition Sciences (CIP 30.1901) program area had an overall score of 28 according to Gray's Program Evaluation System. The highest scored program in the national undergraduate category for health and health-related programs (based on 2-Digit CIP codes) was a 35 and the lowest scored program was a - 29. According to IPEDS, there were 2,564 completions at 67 campuses of which 66% were at the bachelor's level in 2017. This is an increase of 15% for year-over-year completions.</p>	<p>The name change will benefit students because the new program name is tied more closely with specific career outcomes.</p>

## EXECUTIVE SUMMARY

				According to Burning Glass, there were 10,531 job postings related to this area which is a 6.4% year-over-year change (663 additional jobs) compared to the previous year. According to the Bureau of Labor Statistics, current employment in this field is 24,696, and there was a 2.3% change in year-over year employment, 5.3% increase in 3-year historic growth (compound annual growth rate), and a 4.9% increase in 5-year historic growth (compound annual growth rate). The 10-Year forecast for compound annual growth rate is 1.3%. According to the American Community Survey administered by the U.S. Census Bureau, wages range between \$38,209 (age < 30) to \$73,414 (age 30-60).	
Bachelor of Arts in American Cultures	The College of Liberal Arts and Sciences  (Tempe)	Rename to: ✓ Bachelor of Arts in American Studies	<b>Description and Justification:</b> The College of Liberal Arts and Sciences is requesting a name change from a BA in American Cultures to a BA in American Studies. The degree has been approved for planning by ABOR and is now in the development phase. The name change aligns with faculty expertise, disciplinary norms, and it will parallel the MA in American Studies already offered by ASU.  American Studies is a multi- and transdisciplinary inquiry-based program about the diverse cultures, social systems, institutions and political ideologies of the United States. This area of study spans the humanities, social sciences, science and society, and it involves understanding the diversity of U.S. society, how the national community represents and imagines itself, and the social movements that attempt to drive political, legal, and economic change. The ASU program has several distinctive features. Students will be trained in critical methodologies, applied research methods pertaining to community involvement and engagements, and the use of storytelling and narratives. They will understand the sociohistorical contexts of contemporary U.S. cultures and social relations; learn how alternative voices are key in research, politics and policy, and social justice work; and learn how to represent diverse communities and facilitate broader understanding across groups.	There are no students currently enrolled in the program.	





**ARIZONA BOARD OF  
REGENTS**

ASU ♦ NAU ♦ UA

April 28, 2020

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis

Subject: Request for Organizational Unit Name Change

---

Per ABOR Policy 2-223.C.5., Arizona State University requests the following organizational unit name change within the Herberger Institute for Design and the Arts

- From the Film School to The New American Film School

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved:   
John Arnold, Executive Director

Date: 5/7/2020

Attachment

**REGENTS**

Fred DuVal ♦ Kathryn Hackett King ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry E. Penley ♦ Executive Director John Arnold

**2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004**

**602.229.2500 | AZREGENTS.EDU**

## EXECUTIVE SUMMARY

### ACADEMIC ORGANIZATIONAL CHANGES

Table 1: Modified Academic Organizations

College/School	Department/School Current Name	Proposed Name	Justification	Impact on Current Students	Fiscal Impact	Proposed Effective Term
Herberger Institute for Design and the Arts  (Tempe)	The Film School	The New American Film School	ASU requests a change in name from The Film School to The New American Film School. The New American Film School builds off of ASU's reputation as a New American University – one that is predicated on excellence and inclusion. Most ranked film schools in the country are based on exclusion – they are highly competitive, many are expensive, and they limit access to production equipment, technology and spaces to a limited and select group of students. ASU's film program, currently ranked in the top 25, has an opportunity to do something different – to be the most egalitarian film school in the nation. With new facilities in Mesa and Los Angeles, we will be able to continue to grow enrollments, admit diverse students from every background, and emerge as a new type of film school – focused on the future, embracing technology and new media, and serving all students. The New American Film School is the best name for advancing this distinctive mission and brand.	The new name will better serve the students as it is more easily identifiable. There is no negative impact on students.	None	Fall 2020

## EXECUTIVE SUMMARY

### ARIZONA STATE UNIVERSITY ACADEMIC PROGRAM CHANGES

**Table 1: Proposed Rename of Existing Degrees**

Current Program	College/School (location)	Action Requested	Brief Description, Justification and Identified Market Need	Impact on Current Students
<b>Rename Existing Undergraduate Degree</b>				
Bachelor of Science in Nutritional Sciences	College of Health Solutions  (Downtown Phoenix)	Rename to: Bachelor of Science in Nutritional Science	<p><b>Description and Justification:</b>                      This change corrects an error in the original submission for the name change from the BS in Nutrition to Nutritional Science.</p> <p>Nutritional Science will combine healthy living and a healthy environment; metabolic, applied, and physiological research; and nutrition education. This name change will allow the college to set up new, innovative concentrations in nutrition solutions and provide additional value to students by offering new degrees that target other areas of nutrition studies, including food entrepreneurship and dietetics.</p> <p><b>Market Need:</b>                      According to Burning Glass, there were 10,531 job postings related to this area which is a 6.4% year-over-year change (663 additional jobs) compared to the previous year. According to the Bureau of Labor Statistics, current employment in this field is 24,696, and there was a 2.3% change in year-over year employment, 5.3% increase in 3-year historic growth (compound annual growth rate), and a 4.9% increase in 5-year historic growth (compound annual growth rate). The 10-Year forecast for compound annual growth rate is 1.3%. According to the American Community Survey administered by the U.S. Census Bureau, wages range between \$38,209 (age &lt; 30) to \$73,414 (age 30-60).</p>	The name change will not impact current students.



**ARIZONA BOARD OF  
REGENTS**

**ASU ♦ NAU ♦ UA**

April 7, 2020

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis

Subject: Request for Academic Organizational Change

---

Per ABOR Policy 2-223.B.6., Arizona State University requests the following organizational changes:

- Move Master of Science in Complex Systems Science from The College of Liberal Arts and Sciences to College of Global Futures
- Move Master of Science in Biomimicry from The College of Liberal Arts and Sciences to College of Global Futures

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved:   
John Arnold, Executive Director

Date: 5/7/2020

Attachment

**REGENTS**

Fred DuVal ♦ Jay Heiler ♦ Ram Krishna ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry Penley ♦ Executive Director John Arnold

**2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004  
602.229.2500 | AZREGENTS.EDU**



**ARIZONA BOARD OF  
REGENTS**

ASU ♦ NAU ♦ UA

April 7, 2020

To: John Arnold, Executive Director

From: Chad Sampson, Vice President Academic Affairs and Institutional Analysis

Subject: Request for Academic Program Change

---

Per ABOR Policy 2-223.B.6., Arizona State University requests the following organizational changes:

- Rename Bachelor of Science in Nutritional Sciences to Bachelor of Science in Nutritional Science

Please indicate your approval by signing in the space provided below. A copy of your approval will be sent to Arizona State University.

Thank you.

Approved:   
John Arnold, Executive Director

Date: 5/7/2020

Attachment

**REGENTS**

Fred DuVal ♦ Jay Heiler ♦ Ram Krishna ♦ Lauren L'Ecuyer ♦ Lyndel Manson  
Larry Penley ♦ Bill Ridenour ♦ Karrin Taylor Robson ♦ Anthony Rusk ♦ Ron Shoopman  
Governor Doug Ducey ♦ Superintendent of Public Instruction Kathy Hoffman

Chair Larry Penley ♦ Executive Director John Arnold

**2020 N. CENTRAL AVENUE, SUITE 230 | PHOENIX, ARIZONA 85004**  
**602.229.2500 | AZREGENTS.EDU**



## EXECUTIVE SUMMARY

### ARIZONA STATE UNIVERSITY ACADEMIC ORGANIZATIONAL CHANGES

**Table 1: Proposed Moves of Academic Programs**

Current Program	College/School (location)	Action requested	Justification/Brief Description	Impact on Current Students
<b>Graduate Programs To Be Moved</b>				
Master of Science in Complex Systems Science	The College of Liberal Arts and Sciences <i>School of Life Sciences</i> (Tempe)	Move program:  From: The College of Liberal Arts and Sciences  To: College of Global Futures	The College of Global Futures will house ASU's academic programs in biomimicry, complex adaptive systems, the future of innovation in society, and sustainability. The interdisciplinary Master of Science in Complex Systems Science develops skills in theoretical foundations, modeling, problem solving, critical thinking, and the importance of direct experience through research or related activities in the context of complex systems. This is a collaborative degree in partnership with the Santa Fe Institute, which is a world leader in complex systems science with over 30 years of research in complex systems. The fit with the College of Global Futures is ideal.	There are no students currently in the master's degree program.
Master of Science in Biomimicry	The College of Liberal Arts and Sciences <i>School of Life Sciences</i> (Tempe)	Move Program:  From: The College of Liberal Arts and Sciences  To: College of Global Futures	The College of Global Futures will house ASU's academic programs in biomimicry, complex adaptive systems, the future of innovation in society, and sustainability. The MS in biomimicry, which is the practice of emulating nature's strategies for human designs, empowers change agents passionate about a world mentored by life's genius. The graduates work toward innovative and sustainable solutions to pressing global challenges by exploring the way business is conducted, how buildings and products are designed,	There will be no impact on current students as the coursework and faculty will remain unchanged.

## EXECUTIVE SUMMARY

---

			governments are run, health care is provided, and goods are manufactured, and how future generations will be educated --- all inspired by nature's time-tested sustainable solutions developed over the last 3.8 billion years. This is a vision strongly aligned with the College of Global Futures.	
--	--	--	---	--