

Phase One – Academic Direction

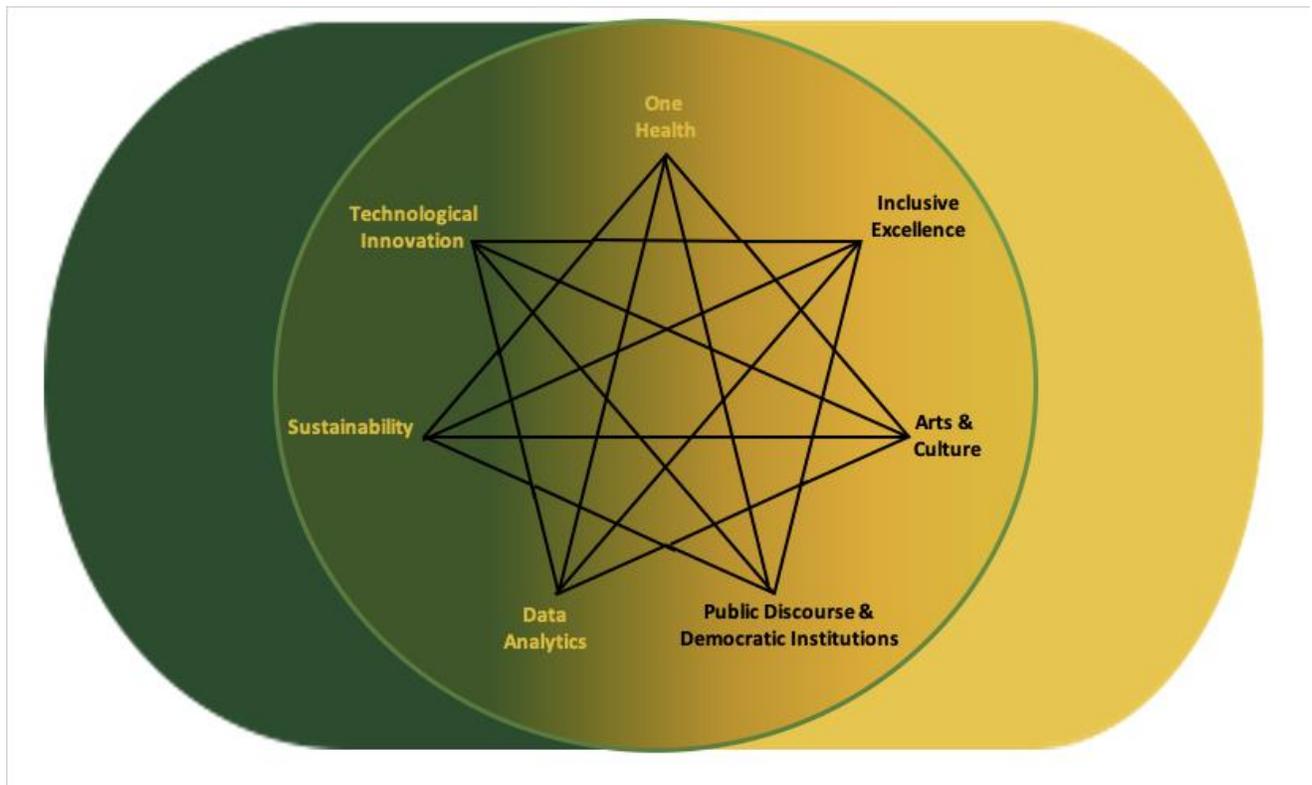
January 20, 2022

Executive Summary

Colorado State University’s Academic Master Plan (AMP) is an essential building block of the University-wide *Courageous Strategic Transformation* (CST) process.

Phase One of the Academic Master Plan process identified seven strategic themes and approaches that offer transformative opportunities for innovative academic offerings, advanced research and development, and inspiring community engagement. All build on a commitment to student success, engaged and impactful scholarship, and meaningful involvement with the University’s many stakeholders. They are inter-related – grounded in **interdisciplinarity**. They are strategic – acknowledging important global trends and building on recognized areas of expertise and excellence at CSU.

The themes and approaches incorporate “areas of targeted impact” from CST and range from science-based **sustainability** and **health**-related topics to humanistic **public discourse** and **creative** topics. The rapid pace of **technological** change and **data analytics** affect all fields. CSU is strongly committed to **inclusive excellence**, serving a more diverse population, and cultivating a culture of inclusivity, equity, and social justice.



Each theme or approach represents and encapsulates a complex cluster of related topics. As interdisciplinary work in these themes continues, new bodies of knowledge emerge. Most themes involve analytical approaches, impacts, and processes or results. For example, achieving **Sustainability** requires disciplinary study of ecological systems and

how humans interact with them. **Technological Innovations** and **Data Analytics** are based in core scientific knowledge that leads to new discoveries and broader applications across disciplines.

CST discussions have articulated the first two themes, so AMP is incorporating CST terminology for them. The other themes arose during AMP Phase One, so they have “working definitions” subject to further refinement as the Academic Master Planning process moves forward.

- **Sustainability**
 - Broadly defined: “We explicitly recognize that to sustain human life and wellbeing for the future we must accept the interconnectedness of planetary and human health, of living and nonliving systems. And we affirm that sustainable solutions must be interdisciplinary, ecologically sound, socially just, and economically viable” (CST).
 - Other key terms and concepts: systems thinking, climate change, adaptation, resiliency, life cycle analysis, environmental health.
- **One Health**
 - Integrative health: “We will be globally recognized for a transdisciplinary, integrative approach to environmental, plant, animal, and human health, with an emphasis on disease, agricultural, and water issues” (CST).
 - Other key terms and concepts: global health, environmental health, comparative medicine, health disparities.
- **Technological Innovation**
 - New inventions, their applications, and their impacts.
 - Examples: laser science, bioprocess engineering, internet of things.
- **Data Analytics**
 - New foundational skills, data literacy, privacy, security, and the ethical use of data.
 - Other key terms: data science, big data, quantum information.
- **Inclusive Excellence**
 - Integrating multiple narratives and complementary perspectives.
 - Advancing diversity, equity, inclusion, and social justice.
- **Public Discourse and Democratic Institutions**
 - Communication, dialogue, collaboration, policymaking, engagement, civility.
 - Concerned with reversing the erosion of trust in government and science.
- **Arts and Culture**
 - Extending creative forms and norms beyond Eurocentric (or Western) traditions.
 - Enhancing the participant and audience (viewer, listener, reader) experience.

Representatives of CSU colleges, departments, centers, and institutes aspire to expand their curricula, research agendas, and engagement activities to provide leadership in meeting and anticipating future needs in these areas. Some leaders of educational programs feel they need to create or update traditional degrees to incorporate these themes and better serve a broader audience. In addition, they identified less conventional offerings such as short courses and specialized certificates to engage a more diverse student population and lifelong learners.

Leaders of research and engagement activities saw opportunities to involve students through capstone projects, lab assignments, research projects, internships, field placements, service learning, and other forms of experiential education. They also recognized the potential to broaden interest and increase understanding and impact of their disciplines through the “co-production” of knowledge (e.g., through community engagement, “citizen science,” etc.) and sharing faculty and student work off campus beyond traditional extension activities.

COLORADO STATE UNIVERSITY
Academic Master Plan

Phase One – Academic Direction

January 24, 2022¹

Introduction

This report on Phase One of Colorado State University's Academic Master Plan (AMP) begins with a summary of the context for undertaking academic master planning at this time, and the process the University has followed. After that, the report summarizes findings based on input provided by the AMP Advisory Committee, two campus-wide fora, detailed templates completed by academic departments, programs, and some centers and institutes, and college-level summaries.

The information from Phase One provides background for continuing discussions during Phase Two, which will focus on how CSU can respond to changing demographic trends and reach out to new student populations, research partners, and community clients to expand its leadership and impact as a research and land grant university.

Appendices to this report include a sample copy of the AMP Phase One template, college executive summaries, and detailed examples of cognitive knowledge and skills identified as important in the future.

¹ Revised by the AMP planning team following Advisory Committee discussion and input. The AMP planning team consists of Linda C. Dalton, PhD, FAICP, planning consultant with Dalton Education Associates; Linda Nagel, chair of the AMP Advisory Committee, and Professor and Head, Forest and Rangeland Stewardship; Emily Seems (Allen), Chief of Staff to the Provost, now Associate Vice President for Community Affairs and Engagement; Jenelle Beavers, Vice President for Strategy; Andrea Duffy, CST Fellow, now Assistant Vice Provost; Kathy DuQuoin, Executive Assistant to the Provost; Pam Jackson, Associate Vice Provost for Communication; and Laura Jensen, Vice Provost for Planning and Effectiveness. The AMP Advisory Committee members include Dr. Nagel; Jennifer Aberle, Associate Dean, College of Health and Human Sciences; Brandon Bernier, Vice President for Information Technology; Amy Charkowski, Professor and Department Head, Bioagricultural Sciences and Pest Management; Kauline Cipriani, Vice President for Inclusive Excellence; Dierdre Cook, Alumna and retired school principal; David Dandy, Professor, Chemical and Biological Engineering; Nancy Deller, Interim Associate Vice President for University Marketing and Communications; Catherine DiCesare, Associate Professor, Art and Art History; Sue Doe, Professor, English, and Chair, Faculty Council; Jody Donovan, Dean of Students; Andrea Duffy, Assistant Professor, College of Liberal Arts, Assistant Vice Provost, and CST Fellow; Sam Halabi, Senior Associate Vice President for Health Policy and Ethics; Roze Hentschell, Associate Dean, College of Liberal Arts; Chad Hoseth, Associate Vice President for International Affairs; Meggan Houlihan, Assistant Professor, Libraries; Brandon Lowrey, Student, Biomedical Sciences and ASCSU Director of Academics; Shrideep Pallickara, Professor, Computer Sciences; Sandra Quackenbush, Associate Dean, College of Veterinary Medicine and Biomedical Sciences; Monique Rocca, Associate Dean, Warner College of Natural Resources; Lindsey Shirley, Associate Vice President, CSU Extension; Beth Walker, Dean, College of Business; and Lindsay Winkenbach, Ph.D. candidate, Biochemistry and Molecular Biology.

Colorado State University's Academic Master Plan (AMP) – Context

Colorado State University's Academic Master Plan (AMP) is an essential building block of the University-wide Courageous Strategic Transformation (CST) process. Early CST documents stressed that the AMP should lead toward strategic academic innovation.



The Academic Master Plan has five purposes:

- Articulate CSU's distinct areas of excellence in teaching, research, and community engagement;
- Inspire innovative and meaningful educational programs in these distinct areas that reach a broader future student population and build on foundational competencies that all students should master;
- Encourage research projects in these areas of excellence that attract a wider range of participants, partners, and consumers;
- Promote community engagement activities in these distinct areas that will serve a more extensive clientele; and
- Initiate effective strategies and a timeline to achieve these aspirations.

The AMP will be integrated with, draw from, and contribute to related educational, research, and community engagement efforts at CSU:

- CST and the CSU mission
- Areas of targeted impact in CST
- Institutional Learning Outcomes
- Programs of Research and Scholarly Excellence
- Academic program review

- New program proposals
- University-wide and specialized accreditation reports
- Interdisciplinary initiatives
- Grant applications
- Fund-raising case statements
- Facility proposals
- Hiring priorities for faculty, research, and engagement colleagues
- Future enrollment targets
- Resource allocation

CSU is developing the Academic Master Plan in a four-phase process, followed by implementation and monitoring.

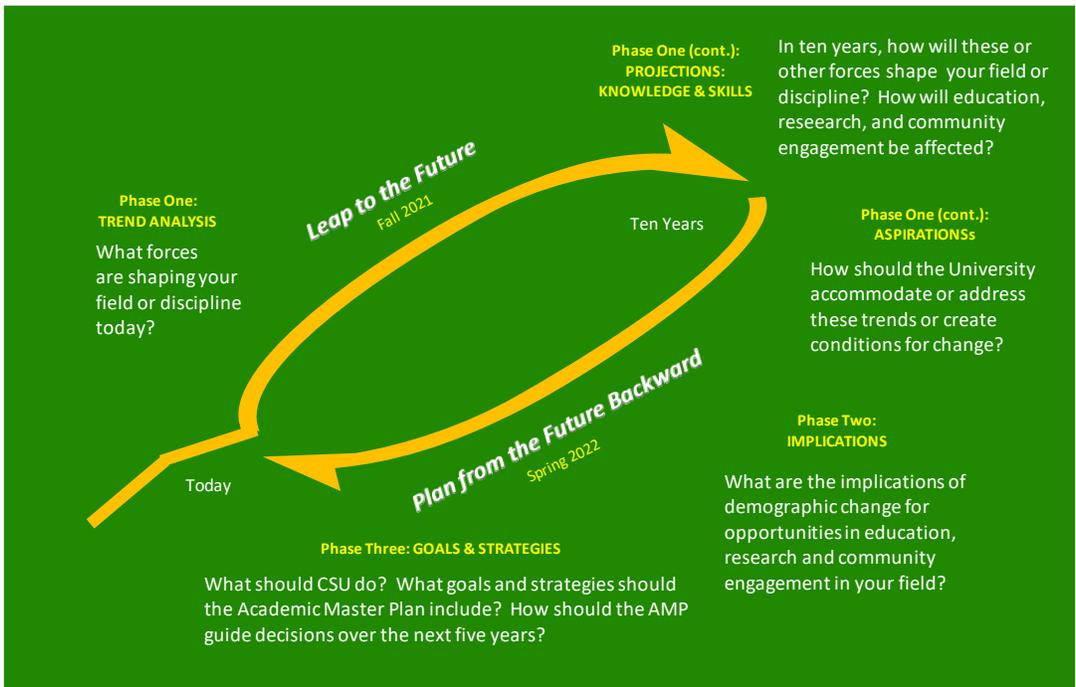
- Phase One: Academic Direction – Trends and Aspirations for Academic Programs, Research and Community Engagement
- Phase Two: Demographics and Emerging Opportunities for Education, Research, and Community Engagement – Future Audiences and How to Reach Them
- Phase Three: Academic Master Plan Goals and Strategies – Including Timeline and Monitoring
- Phase Four: Initial Implementation – For example, Future Enrollment Targets

The Academic Master Plan Advisory Committee, comprised of faculty, administrators, students, and a community representative, will be responsible for drafting the Academic Master Plan during Phase Three. Each of the first two phases involves a forum sponsored by the Provost; and all three phases provide opportunities for input from all sectors of the CSU community. An academic planning team, headed by Dr. Linda Dalton, a higher education planning consultant, supports the process.

A planning process known as “Planning from the Future Backward”² provides the framework for creating the Academic Master Plan. It emphasizes that universities should both anticipate and guide the future by first looking ahead ten years or so; setting some expectations, and then figuring out what it will take to make the aspirations a reality. Universities can respond to emerging trends and projections in three different ways:

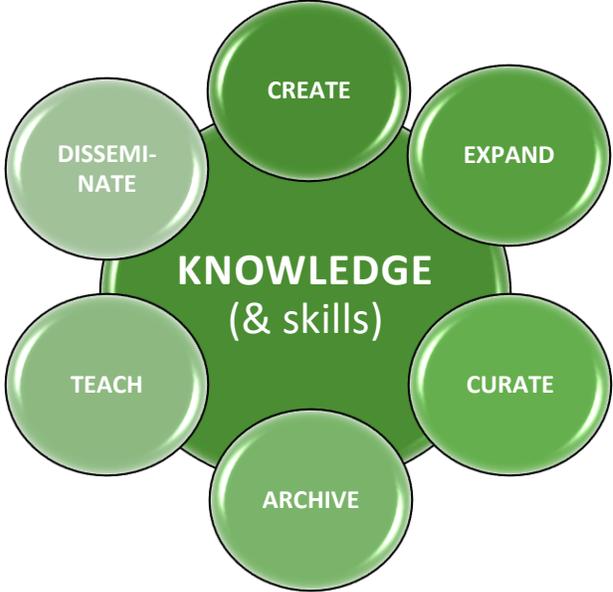
- Accommodate, support, or address trends and likely projections:
 - E.g., demographic changes; social trends; technological advances; digital divide
- Prepare for uncertainty or contingencies (negative or positive):
 - E.g., natural disasters; the next pandemic; economic downturns
 - E.g., windfalls
- Create the conditions for grounded aspirations to become realities:
 - E.g., a new interdisciplinary degree program; a leading-edge research initiative; an innovative community engagement activity.

² Norris, Donald et al. (2013), Transforming in an Age of Disruptive Change: Part 2: Getting Started, Getting it Done, *Planning for Higher Education*, 41:2, Figure 7 (redrawn).



CSU AMP Phase One: Academic Direction – Process and Participants

The purpose of Phase One has been to articulate the distinct expertise or body of knowledge and skills for which CSU aspires to provide intellectual leadership. This means thinking broadly about how a research, land grant university develops and shares knowledge and skills along with its teaching mission.



Sample discussion questions and topics included these:

- What should draw new faculty or research colleagues to CSU?
- What kinds of programs should attract future students to CSU?
- Why should donors invest in CSU?
- Areas of targeted impact from the CST
- Research and scholarly excellence programs

The AMP Planning Team organized Phase One to inform the CSU community about academic planning and involve that academic community in the process.

- Overview – Provost Pedersen and Dr. Dalton provided an overview of the AMP, focused on Phase One, at the Provost’s summer leadership retreat in July 2021, for the Faculty Council in September, and at college leadership meetings in August and September.
- The Provost’s Fall Forum on October 1 focused on Phase One, highlighting a keynote address by the Colorado State Demographer, Elizabeth Garner; and work sessions to engage participants in academic planning.
- Two CST fora in October, open to the entire CSU community, focused on the AMP. The second of the two fora was designed to encourage involvement by centers and institutes in the AMP process.

The AMP planning team designed a template based on “Planning from the Future Backward” to collect data from the academic departments, colleges, centers, and institutes. The template (included in the Appendix) provided space for each program to address the following as well as provide an overview:

- Assess how past, current, and future trends affect the field or discipline;
- Project how these trends might shape the knowledge and skills needed in the future;
- Express aspirations for how the field or program might develop in the future, including interdisciplinary opportunities;
- Indicate how the program contributes to the CST “areas of targeted impact;” and
- Comment briefly on program locations and delivery modes.

Academic departments submitted their completed templates through their deans, who added a college-level summary. Participating centers and institutes submitted their completed templates directly to the Office of the Provost and Executive Vice President.

CSU AMP Phase One: Academic Direction – Summary of Findings

Phase One reports documented a logical process building from an assessment of trends toward future aspirations. This summary follows the same sequence with a brief summary of trends and emerging themes, and future knowledge and skills, which lead to a discussion of aspirations for the future.

Trends and Themes

Participants focused on trends that affect their fields or disciplines as well as thinking about trends in higher education. The trends are grouped into six general categories. The following table synthesizes the common and more nuanced topics that emerged for each type of trend. The terms in the chart are illustrative, as the reports did not always use the same ones.

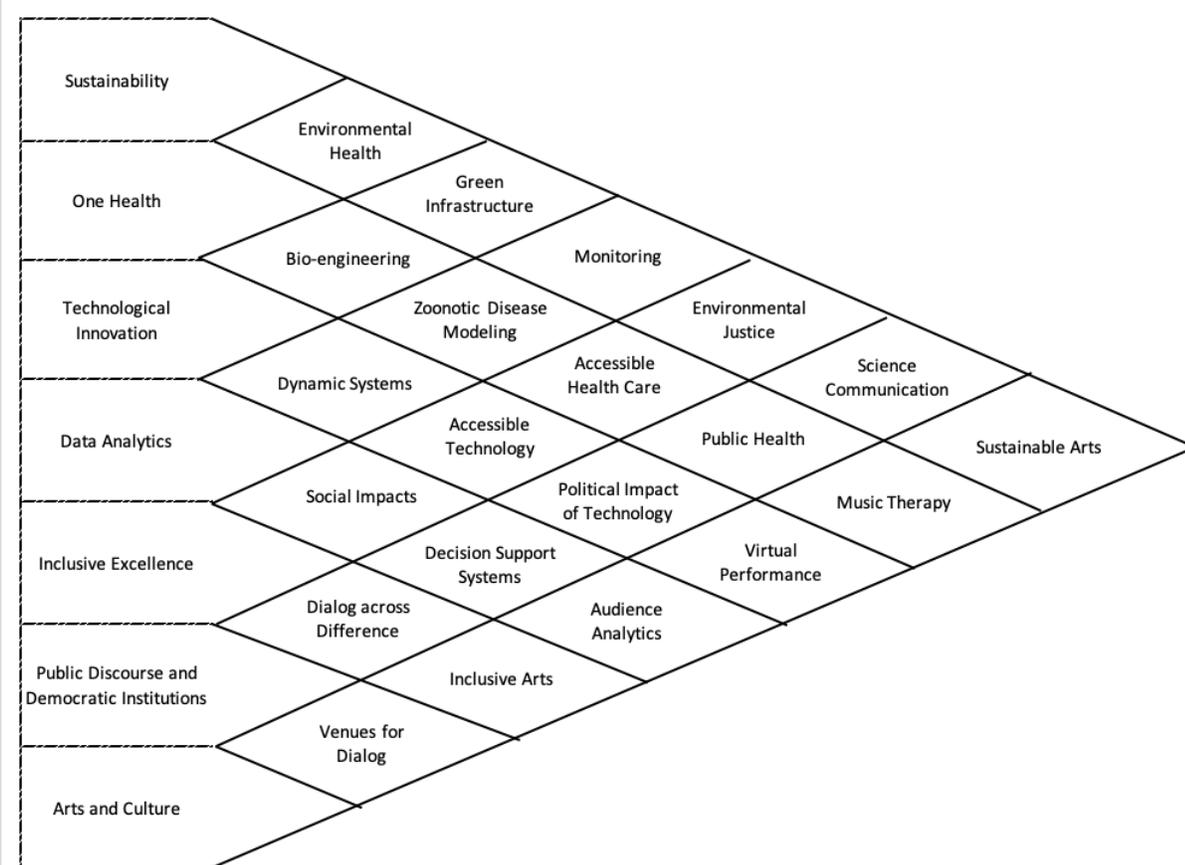
Trends	Common Topics	More Nuanced Topics
Economic	Changing nature of work	Critical worker shortages
	More diverse workforce	Creative economy
		Green economy
Environmental	Sustainability	Nature and human health
	Climate change	Healthy communities
	Resiliency	Measurement and management of change
Political	Divisiveness in general	Distrust in government
	Science/expertise backlash	Civility, public deliberation
Social	Demographic change	Specific groups – e.g., aging, Hispanic, international
	Diversity, equity, inclusion, social justice (DEIJ)	Inequities in higher education
Technological	Pervasiveness of new developments	Transformative impacts
	Data analysis and decision-making	Social impacts
Higher Education	Interdisciplinarity	New bodies of knowledge
	Student preparation and success	Alternative pathways to higher education
	Beyond traditional degrees	Funding for research and graduate students
	Cost of and funding	

The environmental, social, and technological trends dominated the discussion of how different fields and disciplines will be affected in the future. Economic and political factors tended to be intermingled with environmental and social trends. Higher education themes were more internally focused, reflecting strong commitments to interdisciplinarity and student success

involving experiential learning. College and center/institute summaries revealed how these trends not only will affect the future of their fields and disciplines but also open opportunities for academic programs, research, and community engagement.

- All colleges and several centers were eager to engage in more **interdisciplinary** work; and each of the emerging themes engages more than one college.
- The themes and approaches incorporate “areas of targeted impact” from CST and range from (green) science-based **sustainability** and **health**-related topics to (gold) humanistic **public discourse** and **creative** topics.
- In between, the themes pick up rapid pace of **technological** change, and several colleges commented on how novel computing and **data**-driven approaches can accelerate research innovation in their fields.
- The templates reflected CSU’s strong commitment to **inclusive excellence**, serving a more diverse population, and cultivating a culture of inclusivity, equity, and social justice.
- Each college has strengths in one or more of the themes as their disciplines frame the discussion, undertake research, provide explanations, and develop solutions or products. Disciplines in other colleges then apply the analysis or work developed by disciplines – for example, disciplines in all colleges employ data analytics.

Examples of Interdisciplinary Relationships among Themes and Approaches



Future Knowledge and Skills

Some skills important to future students, colleagues, and community members came across as common for all disciplines/fields, and they reinforce or expand on traditional core competencies. Other areas of knowledge and skills are more specific to a college, field, or discipline, and are summarized later. Representatives of academic departments stressed the importance of rigor and mastery, not just familiarity with the areas of knowledge and skills they listed.

Common Skills (alphabetical order)

- Civility
- Collaboration
- Communications of all kinds
- Conflict resolution
- Critical thinking, critical analysis
- Cultural competence
- Data analytics
- Digital literacy
- Leadership
- Problem solving
- Systems thinking
- Teamwork

This list overlaps and expands on some of the skills and abilities that employers value most; however, the CSU list does not include sales and customer service, perception and attentiveness, or a capacity for teaching and learning, which were also among the top ten in a survey conducted by the Georgetown University Center on Education and the Workforce.³

Specific areas of cognitive knowledge were associated with different disciplines. Thus, department representatives identified areas of expertise that their students should develop. For centers and institutes, future knowledge requirements were centered on the substantive focus of that entity. The table below lists a few examples of emerging topics from the colleges, departments, and centers/institutes organized around the dominant themes rather than the units. The right-hand column lists contrasting examples of topics and educational approaches that are being de-emphasized or phased out as they become less relevant. Generally, contextual and multi-disciplinary knowledge, applied learning, and technology-assisted skills are displacing more narrowly-defined areas of knowledge, rote learning, and manual skills (e.g., less single PI research, fewer hand-drawn documents). Appendix C contains many more detailed examples from the departmental templates.

³ Georgetown University Center on Education and the Workforce (2020), *Workplace Basics: The Competencies Employers Want*; <https://cew.georgetown.edu/cew-reports/competencies/> (accessed December 8, 2021). Colorado State Demographer, Elizabeth Garner, shared another list showing the top common skills in job postings and applicant profiles during the October 1, 2021, Provost's forum with communications at the top, followed by management, customer service, sales, operations, and leadership.

<u>Theme or Approach</u>		
<u>Emerging Knowledge & Skills (examples)</u>	<u>Emerging Applications (examples)</u>	<u>Waning Knowledge and Skills (examples)</u>
<u>Sustainability</u>		
Ecosystem approach, incorporating sustainability's "three legs": physical environment, social (human), and economic	Mitigation and adaptation techniques, climate action plans, GHG reduction	<i>Environment as limitless resource for human exploitation</i>
<u>One Health</u>		
Global health for humans, animals, and the environment	Accessible and affordable health care	<i>One cure</i>
<u>Technological Innovation</u>		
Internet of things	Accessible technology	<i>Compartmentalized technology and skills</i>
<u>Data Analytics</u>		
Complex/dynamic systems analysis and modeling	Big data management	<i>Reductionist analysis</i>
<u>Inclusive Excellence</u>		
Analysis of equity and justice impacts of public and private actions	Aligning business strategy with societal responsibility	<i>Acritical best practices</i>
<u>Public Discourse and Democratic Institutions</u>		
Analysis of alternatives, multiple perspectives, holistic frameworks, and solutions	Community-engaged research, collaboration, community science, community journalism	<i>Arguments from authority alone</i>
<u>Arts and Culture</u>		
Viewer experience, time-based arts	Creative writing to build community	<i>Eurocentric emphasis in arts, literature, music, philosophy</i>

Aspirations

Representatives of colleges, schools, departments, programs, centers, and institutes expressed a wide range of aspirations for the future. First, all sought to maintain or increase the quality

and national or international recognition of their academic programs, research, and community engagement activities. In addition, academic program representatives expressed a continuing commitment to student success, aspiring to attract a more diverse group of students, increase retention, improve pedagogy, expand experiential, field placement and service-learning opportunities, and respond to student interest in “making a difference.”

Most aspirations build directly on existing or emerging subject-matter expertise in the colleges, schools, departments, or centers and institutes involved rather than adding entirely new areas. Nearly all academic programs include research and engagement activities, often involving centers and institutes housed within the college. Representatives of high-demand fields sought to expand capacity by adding faculty, staff, and facilities to support them.

The aspirations underscored the need for more interdisciplinary or trans-disciplinary thinking and matched the emerging themes and approaches from Phase One of the Academic Master Plan.

- **Interdisciplinarity** (including trans- or multi-disciplinary programs, research, and engagement) – extending connections within and across colleges and increasing collaboration between academic programs and centers and institutes.
- **Sustainability**
 - Broadly defined: “We explicitly recognize that to sustain human life and wellbeing for the future we must accept the interconnectedness of planetary and human health, of living and nonliving systems. And we affirm that sustainable solutions must be interdisciplinary, ecologically sound, socially just, and economically viable” (CST).
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The following list illustrates where the themes and approaches might be expanded through academic offerings, research, and community or civic engagement. Some of the less conventional academic offerings and community engagement activities also serve as professional development, “upskilling,” and lifelong learning opportunities.

Conventional Academic Programs

- Additional masters and doctoral degrees, including joint degrees
- Occasional new undergraduate programs
- Additional minors, concentrations, and specializations – sometimes across disciplines
- Curriculum redesign

Other Academic Offerings

- Numerous specialized certificates – many at the post-baccalaureate level
- Continuing education units for professional development and certification
- Training – e.g., facilitation, conflict resolution
- Summer programs
- Short courses
- Accelerated programs
- Online programs as complements to programs offered on site

Pre-College Programs

- Pathways into selected fields
- Early start preparation

Research and Community/Civic Engagement

Clients and Partners

- PK-12 or PK-16 education
- Industry
- Community organizations
- Public agencies
- Legislative bodies

Research

- Engaged scholarship (faculty and students)
- High impact scholarship
- Sponsored research
- Post-doctoral fellowships
- More inclusive research subject pools

Community/Civic Engagement

- Extension programs in general
- Co-production of knowledge
- Evidence-based policy and applications of research
- Sharing faculty and student research and other activities through public events, exhibits, etc. on or off campus
- Community building, community empowerment
- Student involvement in civic projects
- Skill or competency building, such as English as a second language

