Higher Education Engagement in Economic Development:
Foundations for Strategy and Practice

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ASSOCIATION OF
PUBLIC &
LAND-GRANT
UNIVERSITIES

CICEP ECONOMIC
ENGAGEMENT FRAMEWORK

UNIVERSITY
ECONOMIC
DEVELOPMENT
ASSOCIATION

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Acknowledgements

Contents

Who We Are

This statement of *Foundations* about the roles of institutions of higher education in economic development and engagement with their constituencies is produced in support of higher education institutions, as represented by the Association of Public and Land-grant Universities (APLU) and the University Economic Development Association (UEDA).

Association of Public and Land-grant Universities

APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the US, Canada, and Mexico. With a membership of 238 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement.

APLU created its Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP) to help APLU member universities—including presidents and chancellors, senior research officers, provosts, other officers and their staffs—plan, assess, and communicate their institutions' work in local and regional economic development.

University Economic Development Association

Established in 1976, UEDA is North America's membership organization that brings together public and private higher education; private sector; public agencies; and community economic development stakeholders in economic development. UEDA's members work to expand economic opportunity and prosperity in our communities and regions by leveraging education / talent development; research and technology development; and community-building and place-making strategies. UEDA's mission is to serve its members by advancing knowledge and practice in economic engagement by institutions of higher education.

UEDA's Body of Knowledge (BoK) Committee works to support UEDA's members by providing information and resources to advance higher education-related economic development and engagement accomplishments. The Committee's mandate is to organize existing knowledge and support creation of new knowledge allowing members to better develop and carry out economic development and engagement programming.

Purposes of These *Foundations*

Each of the three sections of this document addresses one of its three purposes:

- ■ **FIRST, WE DEFINE UNIVERSITY ECONOMIC DEVELOPMENT AND ENGAGEMENT.** A common definition will lead to easier development of roadmaps, tools, and metrics for assessing progress while also stimulating internal institutional dialogue—all-important to affecting the culture of what we value.

- ■ **SECOND, WE PROVIDE A COMMON SET OF PRINCIPLES** for the practice of economic development and engagement that institutions can consider as part of their planning and assessment framework.

- ■ **THIRD, WE PRESENT A TAXONOMY OF PROGRAMS,** intended to assist institutions and their partners in understanding how discreet programs connect to the larger vision and purposes.

The *Foundations* are meant to inspire institutions to reinvent *the relevant college or university* for the 21st century and to think more comprehensively about how economic development and engagement activities connect to each other and to an institution's core mission. That said, the foundations expressed in this document are intended to provide a useful and provocative framework—not a precise or limiting prescription. Further, the *Foundations* also should help institutions strengthen their communications of accomplishments to stakeholders—taking into account a broader definition of economic development roles of institutions.

Building Our Frameworks

These *Foundations* extend previous work of APLU CICEP, including publications in its *Economic Engagement Framework* (http://www.aplu.org/CICEPFramework) and its *Innovation and Economic Prosperity Universities* program. It also builds from UEDA's Awards Program (http://awards.universityeda.org) and is a framework for concurrent launch of UEDA's *Journal of Economic Development in Higher Education*. Thus, in many ways, this document is part of an ongoing process by APLU CICEP and UEDA to create a body of knowledge to support institutions in their pursuit of economic engagement purposes and initiatives.

Finally, we acknowledge the work of many others who have devoted considerable effort to developing frameworks for these endeavors in higher education. (Graphics and references included in the Appendices provide selected examples.) We hope we are, in turn, building on that growing body of work.

Definition of Economic Development for the 21st Century

In the second half of the 20th century, as *economic development* emerged as an art form in the late *industrial economy*, it was commonly understood to mean primarily recruitment of companies to a specific jurisdiction for *job creation*, with tax revenues and capital investment being secondary goals. Most early attention was on creating industrial park sites, utilities capacity, and transportation—and then working to relocate manufacturers to the jurisdiction in question. In the last few decades, economic incentives, supported by taxpayers and public policy, became another set of major tools.

This now is an archaic and too-narrow view of *economic development,* which, in the 21st century's *global knowledge economy,* is a far more complex enterprise. Universities and colleges begin their definitions and their principles and practices based on a much broader meaning of *economic development*, based on this new definition from Feldman et al.:

> *Economic development is defined as the expansion of capacities that contribute to the advancement of society through the realization of individuals', firms', and communities' potential.*

> *Economic development is the means to achieve sustained increases in prosperity and quality of life realized through innovation, lowered transaction costs, and the utilization of capabilities towards the responsible production and diffusion of goods and services.*

The authors continue with the following principles:

> *Economic development requires effective institutions grounded in norms of openness, tolerance for risk, appreciation for diversity, and confidence in the realization of mutual gain for the public and the private sector.*

> *Economic development is essential to creating the conditions for economic growth and ensuring our economic future.* (Feldman et al., forthcoming)

Definition of Economic Development for Higher Education

For higher education, the definition of *economic development* begins from the notion of broadly "creating the conditions" for economic prosperity. As used by APLU CICEP and UEDA, economic development in/by higher education is defined as follows:

> *In higher education, economic development means proactive institutional engagement, with partners and stakeholders, in sustainable growth of the competitive capacities that contribute to the advancement of society through the realization of individual, firm, community, and regional-to-global economic and social potential.*

TALENT — Cradle-to-Grave Human Capital and Talent Development

INNOVATION — Research, Creative Works, Problem-Solving, and Entrepreneurship

PLACE — Community-Connected Institutions and Stewardship for Vibrant Communities
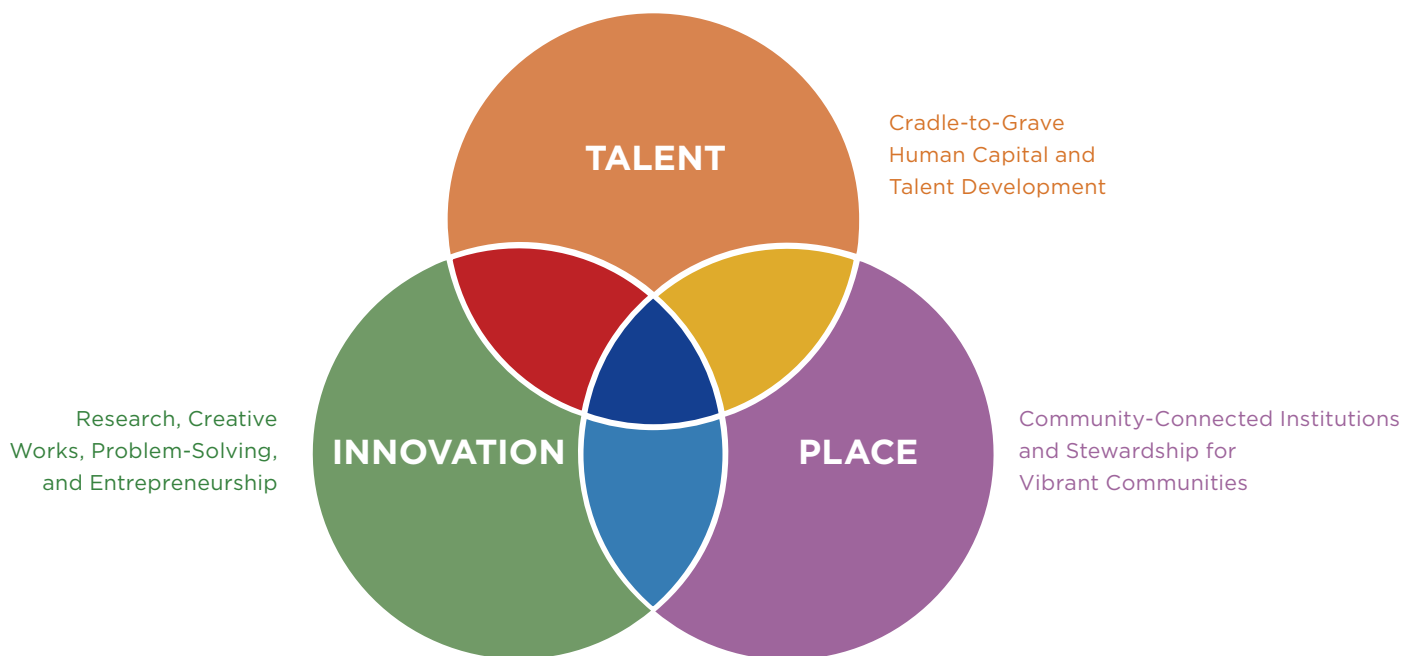
Colleges and universities enhance the competitiveness of their communities and regions—and also serve global society— through many diverse programs, services, and activities that span realms of:

- **HUMAN CAPITAL / TALENT DEVELOPMENT;**

- **RESEARCH AND INNOVATION** in science, technology, public policy, humanities, and social realms, and

- **STEWARDSHIP OF PLACE.**[1]

Economic development is not a fourth mission; it is one lens through which the traditional three missions are now interpreted.

As our institutions succeed in economic development, thus broadly defined, the communities and regions they serve will realize sustained advances in economic prosperity and quality of place, because they become increasingly attractive to entrepreneurs / innovators, businesses, investors, and highly-skilled job-seekers (and even students).

The three components of talent, innovation, and place are both autonomous and linked efforts within higher education's economic development environment, as illustrated in the graphic above.

This definition is designed for those who plan, lead, prioritize, and carry out economic development / engagement activities. Importantly, many of the most vibrant and effective programs and services fall in the intersections between these three elements. These intersections are noted in *Section 3: Taxonomy of Programs.*

These three elements also build on traditional mission formulations (*Teaching, Research, and Service*; or *Learning, Discovery, and Engagement*) and can serve to extend interpretations of mission across the institution.

When an institution has active and effective programs in all three realms and in their intersections—the institution is achieving what we may call high-impact economic engagement.

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1   *Stewardship of Place* is an extremely useful construct, advanced initially by the American Association of State Colleges and Universities (AASCU), and adopted for this material. See Appendices for AASCU graphic and references.

The Relevant College or University

When an institution embeds considerations of these purposes and functions in most or all of its internal planning and priority-setting, it is achieving a definition of itself as a *relevant college or university* in the 21st century—an institution that, engaging with others, applies its many assets and capabilities toward realization of individual, firm, community, regional, and global economic and social potential.

ALL THE ABOVE NOTWITHSTANDING, THE 21ST CENTURY RELEVANT COLLEGE OR UNIVERSITY WILL FIND THE PATHWAYS TO GREATER ENGAGEMENT WITH PRIVATE SECTOR AND COMMUNITY WHILE STILL PRESERVING ALL THE MOST IMPORTANT TRADITIONAL VALUES OF THE UNIVERSITY— FOREMOST OF WHICH IS ACADEMIC AND SCHOLARLY INTEGRITY.

Preamble

Twenty-first century institutions of higher learning share in responsibilities for *economic development*, as defined herein. They engage, in varying roles, as *stewards of place* in the communities and regions they serve. They further understand economic development and engagement as functions of the entire institution—connected with (or embedded in) core missions.

A. Strategic Program Principles of Practice

Accordingly, the economically-engaged institution seeks to adapt and enact, in ways consistent with its mission, the following general **Strategic Program Principles:**

1. **EMBED ECONOMIC ENGAGEMENT, INNOVATION, AND ENTREPRENEURSHIP ACROSS INSTITUTIONAL MISSIONS.** Apply knowledge, transfer technology, support regional industry clusters, and otherwise create innovation to achieve intellectual, scientific, public policy, social, cultural, and economic outcomes.

2. **VALUE AND PROMOTE SCHOLARSHIP ACROSS A CONTINUUM OF DISCOVERY AND APPLICATION.** Value intellectual endeavors in many forms—from basic research to use-inspired research and, in the realm of innovation, from applications to problem-solving.

3. **BE GOOD COMMUNITY PARTNERS, PROVIDING LEADERSHIP AS BOTH CONVENERS AND ACTIVE PARTICIPANTS.** Engage with communities—in social, physical, and virtual forms—and actively pursue working and collaborating for the common good with other community stakeholders.

4. **ENGAGE IN REGIONAL INNOVATION ECOSYSTEMS.** Help create and be active in an interconnected, regional ecosystem (formal framework of knowledge, services, capital, and resources) that supports innovation-based economic development, and comprises elements provided by government, business, industry, not-for-profit, and institutional collaborators.

5. **IDENTIFY AND STRENGTHEN THE INSTITUTION'S STRATEGIC COMPETITIVENESS.** Focus on identifying and building strategic / selective areas of expertise, to sustain institutional relevance and competitiveness and to help strengthen and diversify regional economic sectors, thus contributing to the communities' and regions' economic development and global competitiveness.

6. **SERVE REGIONAL HUMAN CAPITAL AND WORKFORCE NEEDS.** Consider human capital development to mean the cultivation of intellect, general knowledge, career / occupation skills, life / civic responsibility, and global citizenship—and encompassing diverse populations (age, race, ethnicity) served directly or indirectly.

7. **CONTRIBUTE TO THE HEALTH AND WELL-BEING OF THE COMMUNITY AND PEOPLE THE INSTITUTION SERVES.** Share responsibility with many other organizations in the institution's communities and regions for achieving health, wellness, and social well-being of people and communities.

8. **FACILITATE 21ST CENTURY KNOWLEDGE CREATION AT THE INTERSECTIONS, COLLISIONS, AND NEW FUSIONS OF ACADEMIC DISCIPLINES.** Recognize that generating knowledge in the 21st century increasingly requires problem-focused and transdisciplinary perspectives, and, to that end, enhance opportunities for faculty, students, and staff to engage with the public, industry, and government beyond their disciplines and institutions.

9. **AFFIRM THAT, IN INNOVATION AND ENGAGEMENT, HUMANITIES, ARTS, SOCIAL SCIENCES, AND STEM DISCIPLINESARE ALL VITAL.** Recognize that Science, Technology, Engineering, and Mathematics (STEM) disciplines, Humanities, Arts, and Social Sciences all play significant roles in creating economic opportunity and effective societies; in contributing to public and social policy; and in making communities competitive and desirable places to live.

10. **INNOVATE CONTINUOUSLY IN TEACHING AND LEARNING PRACTICES.** Innovate in teaching and learning, to produce educated people and a highly-skilled, leadership-ready, and entrepreneurial 21st century workforce for a globally-connected world; learning innovations include (at a minimum) traditional and flipped classroom, online / virtual, discovery-based, experiential, service, and international modes of education.

B. Business and Policy Principles of Practice

To achieve the **Strategic Program Principles,** the economically-engaged institution understands that some change and evolution may be required in business and policy approaches, and, indeed, in aspects of *institutional culture.* Accordingly, the economically-engaged institution evaluates its need to commit to the following eight **Business and Policy Principles:**

1. **ASSESS OUTCOMES FROM COLLABORATIVE WORK, AND MEASURE A SPECTRUM OF ECONOMIC, SOCIAL, AND CULTURAL IMPACTS FROM OUR RESEARCH AND INNOVATION ACTIVITIES.** Be accountable for outcomes and measures that matter to external constituents, in addition to pursuing outcomes and metrics that the institution values. The economically-engaged institution adapts measures and communications of outcomes to incorporate properly those that are the result of shared aspirations and collaborative initiatives.

2. **WORK TO ALIGN ECONOMIC DEVELOPMENT GOALS WITH INSTITUTIONAL INCENTIVES.** Employ strategic rewards and incentives programs for faculty and staff, including faculty promotion and tenure standards, that encourage innovative teaching; traditional scholarship; community-engaged research and scholarship; patenting and commercialization of discoveries; other forms of innovation in solving economic, policy, or social problems; and creative works.

3. **MAKE ACCESS TO THE INSTITUTION'S ASSETS AND COLLABORATION WITH ITS EXPERTS EASIER.** Provide both organizational structures and internet "front doors" to facilitate access by various constituents to information about the institution's resources and expertise.

4. **ALIGN BUSINESS PROCESSES WITH GOALS FOR COLLABORATION AND INNOVATION.** Value productive partnerships and collaborations and ensure that business processes reflect this value. While respecting legitimate institutional or governmental constraints, also redesign, streamline, and adapt business and decision-making processes.

5. **PRESERVE ACADEME'S CORE VALUES OF ACADEMIC AND INTELLECTUAL INTEGRITY.** In development of more— and more effective—partnerships, strictly maintain the traditional values of academic and intellectual integrity.

6. **EXERCISE RESPONSIBLE STEWARDSHIP OF RESOURCES.** Pursue diversified, sustainable funding, including revenue from innovation and engagement activities and advocate for proper levels of public funding. Also, commit to efficient and productive use of all resources— people, operating funds, and capital funds.

7. **FACILITATE CREATION ON AND AROUND THE INSTITUTION'S CAMPUSES OF NEXT-GENERATION RESEARCH PARKS AND INNOVATION DISTRICTS—KNOWLEDGE-CENTRIC, MIXED-USE COMMUNITIES.** Create robust, mixed knowledge communities both virtually and by physical co-location strategies. *Place* strategies include bringing non-academic business and community / public uses into campus environments and / or extending the assets of campuses into non-academic environments.

8. **DEPLOY THE INSTITUTION'S PROCUREMENT AND INVESTMENT BUSINESS PRACTICES TO MAXIMIZE ECONOMIC IMPACT.** Remain mindful of the potential for catalyzing local economic development through the institution's own procurement, licensing, and investment policies; seek to amend statutes or regulations that would prohibit strategic investment of financial assets to encourage local economic development; consider use of institutional funds to provide venture capital for start-ups that flow from commercialization of discoveries, or to provide social capital for critical community investments.

SECTION 3: Taxonomy of Programs

Within the broader contexts of the *Definition* and the *Principles of Practice*, the *Taxonomy of Programs* is meant to provide a more granular way to define how a great number of specific programs and activities can or do relate to economic development, engagement, and innovation—also including core functions of the institution that, under an older definition, would not have been considered to connect to *economic development.*

This *Taxonomy* is meant to provide one organized way of thinking about how college and university programs of many types relate to economic development and engagement goals. It is not intended to be prescriptive. It certainly does not mean to convey that all institutions must actively provide all programs. Rather, it is offered as one tool—based on this new definition of economic development in higher education—that institutions may use in:

- **UNDERSTANDING WHAT THEY ALREADY DO THAT CONTRIBUTES TO ECONOMIC DEVELOPMENT;**

- **ASSESSING AND PLANNING FOR EXISTING AND NEW PROGRAMS; AND**

- **ORGANIZING THEIR COMMUNICATIONS TO STAKEHOLDERS AND FUNDERS ABOUT THEIR ROLES AND ACCOMPLISHMENTS.**

As an initial tool, a worksheet template is provided in the Appendices. Certainly, other approaches to use of this *Taxonomy,* or altogether different ones, are possible.

Also included in the Appendices is a sample classification of programs at the University of Idaho, based on this taxonomy.

Definitions and Program Examples—Three Main Framework Elements

● Talent: Cradle-to-Grave Human Capital and Talent Development

DEFINITION

Talent development **includes the spectrum of knowledge transfer activities by which universities educate people, developing human capital for the 21st century Knowledge Economy.**

Programs range from formal, credit-bearing programs to informal teaching and learning modes; short-format education and training; service and experiential learning; mentoring; and all other forms of teaching and learning. The learner experience includes theory and practice, and the connections between these. Outcomes in 21st century core skills and competencies are considered in curriculum design. Delivery modes include on-site / face-to-face; off-site / online; and blended instruction formats.

With school, community, and corporate partners, colleges and universities participate in cradle-to-grave talent development. Talent development encompasses the delivery of lifelong learning at multiple levels and to multiple audiences: the effective education of children in the pre-K–12 pipeline;

undergraduate education; specialized graduate and post-doctoral training; executive degree programs (e.g., accelerated MBAs for mid-career professionals); continuing education for adults throughout life; industry training; and beyond.

PROGRAM EXAMPLES

Talent Development is the core mission of higher education. It takes the form of traditional degree programs and also occurs in many specialized "adjunct" programs. Institutions constantly attend to improving pedagogy and to assessing the outcomes of learning—and they do so in many ways, with and without partners.

Following are the kinds of programs institutions might consider as aligning with the *Talent Development* category of this taxonomy.

- 21st Century Skills / Core Competencies for Functioning in Careers and Civic Life
  - Critical thinking skills
  - Communication skills
    - · Relationship-building skills (networking)
    - · Negotiation / persuasion skills
    - · Public speaking skills
    - · Listening skills
  - Basics of managing—schedule, time, projects, people
  - Leadership
  - Building confidence
  - Mentorship
  - Citizenship
  - Ethics / protocol
  - Cultural sensitivities (across generations, gender, social, communities, race, ethnicities)

- Degree Programs in the Arts and Sciences
  - Sciences and Mathematics
  - Arts and Culture
  - Humanities
  - Social Sciences
- Professional Degree Programs (incomplete list)
  - Business
  - Medicine / Allied Health / Nursing / Pharmacy / Dentistry
  - Engineering
  - Law
  - Design and Architecture
  - Computer Sciences and Information Technologies
  - Biotechnology / Bioengineering
  - Public Administration
  - Education
  - Social and Behavioral Sciences
  - Social Work
  - Agriculture / Life Sciences
  - Agriculture / Natural Resources
  - Journalism
  - Special Schools / Colleges, (e.g. Forestry, Mining, Textiles, Hospitality / Tourism, etc.)
- Experiential Education and Discovery-Based Learning Programs
  - Internships
  - Residencies
  - Post-doctoral fellowships
  - Cooperative education
  - Apprenticeships
  - Service learning
  - International and cross-cultural programs

- Senior design / capstone projects
- Undergraduate research
- Leadership development
- ■ Active alignment of curricula to industry / employer needs
    - Competency maps
    - Customized programs—technical training; executive education, etc.
    - Certification programs
    - Multidisciplinary degree programs, such as Professional Science Masters Programs
    - Vocational training / trade studies, such as coding boot camps
    - Professional development "short" courses
- ■ Active programs in Pre-K–12 education
    - Science education / experience programs
    - Career information programs
    - Programs that focus on the future needs of public school teachers, such as how to teach science, math, common core
    - On-site pre-school or other year-round, on-campus pre-K–12 programs and services
    - On-campus summer academies for K–12 students
        - · STEM or STEAM academies
        - · Talented and gifted academies
        - · Entrepreneurship programs / academies
- ■ Active programs in adult education
    - Extension education and programming
    - Literacy programs
    - Community-oriented education and training courses / programs

- ■ Faculty training / development for engagement
    - Inter-disciplinary research and engagement
    - Community-engaged research / scholarship
    - University-industry demonstration partnership (http://sites. nationalacademies.org/pga/uidp/ index.htm)
    - Communicating Science Workshops

● Innovation: Research, Creative Works, Problem-solving, and Entrepreneurship

DEFINITION

Innovation **begins with basic research, but then builds on knowledge creation to encompass knowledge transfer and application in ways that are useful and relevant to society.**

Innovation consists of intellectual, creative, and business processes—from ideation to implementation—that lead to application of new knowledge to solve problems of identifiable markets or user groups, or to otherwise enhance society. Innovation requires an intellectual orientation that is collaborative, transdisciplinary, problem-solving oriented, and risk-tolerant. Innovation and creativity are not limited to technology development and business formation. They lead to societal, economic, technological, policy, artistic, or cultural outcomes. In a way, we are, today, reinventing new forms, based on the original form of university economic development—Cooperative Extension—in place since the late 19th century.

PROGRAM EXAMPLES

For the purposes of this taxonomy, *innovation* includes all institutional efforts that lead to solutions for, or enhancements to, society. Solutions for society might include

technologies that can be developed into marketable products; new practices that help businesses, government, or not-for-profit organizations overcome challenges; or creative works that inform and inspire. While not all basic research leads to such solutions, basic research is included in the *Innovation* category because it provides a pool of discovery and creative work from which applied and transferrable solutions can be drawn; frequently, major advances that change our world arise unexpectedly from curiosity-driven basic research.

Following are the kinds of programs institutions might consider as aligning with the *Innovation* category of this taxonomy.

- Basic research

- Use-inspired research / development (applied, translational, problem-oriented, industry-contracted)

- Clinical programs of all types

- Local capacity to support innovation, entrepreneurship, and economic development, including structures, policies, programs, and resources (*"innovation systems"*)

- Regional industry cluster development

- Cooperative Extension Service (Agriculture, Engineering) and Agricultural Research Services / Experiment Stations

- Other technical assistance services / programs, e.g.:
  - Small Business Development Centers (SBDCs)
  - University-based Economic Development Centers
  - Procurement Technical Assistance Centers

- Manufacturing Extension Partnerships
- Legal clinics offering free or reduced cost services for entrepreneurs
- Materials and technology testing labs and prototyping services
- Faculty technical assistance / consulting programs

- Proof-of-concept programs / centers
  - Product Development, Comparison, and Testing
  - Prototyping
  - Experiment Analysis
  - Market and Product Viability Research and Positioning / Strategy
  - Mentorship

- Technology / knowledge transfer and commercialization

- Business formation, incubation, and acceleration

- Access to capital
  - Proof of Concept and Gap Funds
  - Angel and Seed Funds
  - State and Federal Seed Funds, e.g., SBIR / STTR
  - Venture Capital Funds

- Business plan competitions

- Entrepreneurship education and development programs for faculty, students, staff and the community (courses, special topic lectures / seminars, and boot camps)

- Networking events – pulling of industry and pushing of faculty and students

- Place strategies to support innovation
  - Collaborative research labs and other co-working spaces

- Shared major equipment / instruments
- Incubators and accelerators
- Research / technology parks

● Place: Community-Connected Institutions and Stewardship for Vibrant Communities

DEFINITION

***Place* is defined as the many and diverse ways in which institutions contribute to making attractive, competitive communities—places where people want to live; create and take jobs; raise their families; participate in civic life; and age and retire.**

Competitive, successful communities and regions are attentive to the health, education, environment, housing, safety, and entertainment needs of community members. Leadership cultivates networks and connections that build community and competencies. Citizens practice good government and the community works to assure equity of opportunity and social justice.

Campuses and sites, like research parks, are components of *place-making* and, thus, relevant to *Place,* but the focus of this definition is broader, on community, or even on regions.

PROGRAM EXAMPLES

To contribute to *quality of place*, institutions engage in a very wide variety of programs— some, like Sports and Recreation or Arts, are traditional functions. Others, like community sustainability initiatives, are much newer and often the product of faculty interests and expertise, combined with community needs.

Following are the kinds of programs institutions might consider as aligning with the *Place* category of this taxonomy.

- Programs that enhance quality in Pre-K–12 schools
- Health care facilities and wellness programs
- Arts and cultural amenities
- Sports and recreation amenities
- Environmental sustainability efforts
- Community development programs
- Real estate and urban development / redevelopment / renewal
- Rural development
- Employment and career opportunities for the community, often as a major employer
- Local government training / leadership programs
- Public policy analysis
- Infrastructure (directly or indirectly supported by a higher education institution)
  - Broadband
  - Public transportation
  - Alternative energy

Definitions and Program Examples—Connections Between the Three Framework Elements

● Talent + Place: Civic Collaboration and Leadership

DEFINITION

Programs and activities that synergistically connect *talent* and *place* in ways that enrich discourse, promote civic participation, and otherwise enhance quality of place.

Following are the kinds of programs institutions might consider as aligning with the *Talent + Place: Civic Collaboration and Leadership* category of this taxonomy.

- K–12 school improvement partnerships
- Community leadership development
- Service learning programs
- Student Civic Engagement
- Local government training institutes
- University participation in regional government and economic development organizations
- Internships and training programs in community-based organizations
- Student engagement in community health and wellness programs
- Assessment of community / regional characteristics and strengths to support portrayal of the area as a good place to live and work

● Talent + Innovation: Entrepreneurs and Creative Enterprises

DEFINITION

Programs and activities that synergistically connect *talent* and *innovation,* to create innovators of many kinds—business entrepreneurs, idea or product makers, and problem-solvers

PROGRAM EXAMPLES

Following are the kinds of programs institutions might consider as aligning with the *Talent + Innovation: Entrepreneurs and Creative Enterprises* category of this taxonomy.

- Undergraduate research
- Entrepreneurship education programs:
  - Mentoring programs
  - Short-format accelerator programs (boot camps)
  - Entrepreneurs-in-residence
- Professional science master's degree programs
- Internships, externships, and fellowships in high growth businesses or public and not-for-profit organizations
- Engineering technology capstone classes
- Elements of all education programs that cultivate creativity, problem-solving, and innovation skills

● Innovation + Place: Communities of Innovation or Innovation Districts

DEFINITION

Programs and activities that synergistically connect *innovation* and *place,* to create physical places that attract and build concentrations of talent and innovators—knowledge communities. This can be construed as either or both (1) a specific site or (2) a larger community, area, or region.

PROGRAM EXAMPLES

Following are the kinds of programs institutions might consider as aligning with the *Innovation + Place: Communities of Innovation or Innovation Districts* category of this taxonomy.

- University research and technology parks (sites for business / industry and government innovation)
- Mixed-use campuses or communities (including government and / or industry partners, as well as public / civic functions, schools, housing, retail, amenities, etc.—in addition to university and industry technology and research and development)

- Incubators, accelerators, advanced technology centers

- Arts and cultural innovation programs, events, and venues

● Talent + Innovation + Place: High Impact Economic Engagement

DEFINITION

Programs and activities that synergistically connect all three elements—*Talent, Innovation,* and *Place* and which may be specific, focused initiatives or very broad-based program components.

PROGRAM EXAMPLES

Following are a few examples of the kinds of programs institutions might consider as aligning with *all three* elements in this Taxonomy.

- Cooperative extension

- Manufacturing extension

- Advanced integrated manufacturing centers

- Social innovation & entrepreneurship initiatives

- Any programs of large or specific scale that materially involved aspects of Talent, Innovation, and Place

The Big Picture—The Relevant College or University

In addition to all the above program types, an economically-engaged institution needs to connect its outreach, economic development, and engagement activities to its core institutional values and processes.

Following are the kinds of institutional characteristics and functions that institutions might consider evaluating or connecting to engagement, thus leading us to invention of the 21st century ***Relevant College or University.***

- Mission, strategy, leadership, and culture

  - Mission purposes and language

  - Goals and aspirations

  - Program strategies and priorities

  - Institutional and regional resource attraction and allocation

  - Regional stewardship

  - Convener role

  - Boundary-spanning and entrepreneurial mindset

- Institutional organization, structures, and policy

  - Organization structures for economic engagement activities

  - Partnership development know-how

  - Leadership roles in establishing, aligning, and monitoring regional / constituent metrics

  - Strategic communications

  - Engaged alumni base

  - Portals for access to university talent and assets:

    · One-stop function

    · "Front door" function

    · Web pages and language oriented to interests of industry and community users, etc.

Appendices

Appendix 1—Selected Framework Graphics

Following are some selected framework graphics that were among the materials reviewed for these Foundations.

**AMERICAN ASSOCIATION OF STATE COLLEGES
AND UNIVERSITIES (AASCU)**

Source: Alliance for Regional Stewardship, in Tools and Insights for Universities Called to Regional Stewardship, 2006, Alliance for Regional Stewardship, AASCU and NCHEMS

OHIO BOARD OF REGENTS

Comprehensive Ecosystem for Sustainable Economic Growth

GOVERNMENT

INDUSTRY

Quality K 12 Education

Economic Opportunity Jobs

Quality Health Care Delivery System

Higher Education Ecosystem

Vibrant Culture & Recreational Environment

Affordable Housing

Well Maintained Infrastructure & Sustainable Environment

NGO S

HIGHER EDUCATION

Source: FIFTH REPORT on The Condition of Higher Education in Ohio: Advancing Ohio's Innovation Economy, Ohio Board of Regents, 2012, https://www.ohiohighered.org/files/uploads/Commercialization/2012%20Condition%20 Report_FINAL_WEB.pdf

Ecosystems that support technology commercialization must be built corroboratively by industry, higher education, and government leaders.

Research

HIGHER EDUCATION

COMMERCIALIZATION ECOSYSTEM

GOVERNMENT

INDUSTRY

Public Policy

Industry Expertise

Higher Education Engagement in Economic Development
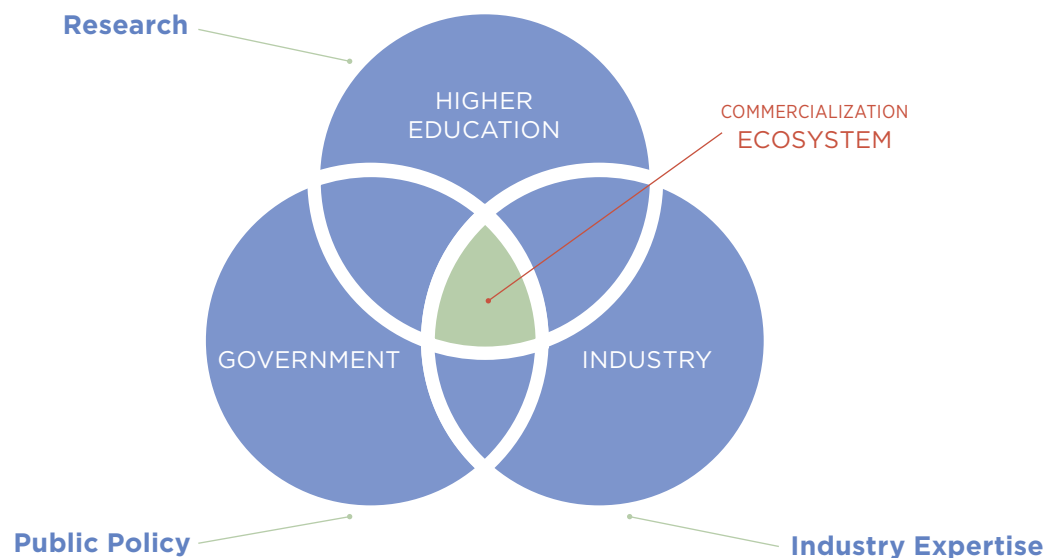
Source: Ed Morrison, distributed through a Creative Commons Attribution ShareAlike 3.0 license.

STEWARDSHIP & ENGAGEMENT

HUMAN CAPITAL

INNOVATION SYSTEM

HEALTH CARE & WELLNESS

QUALITY OF PLACE

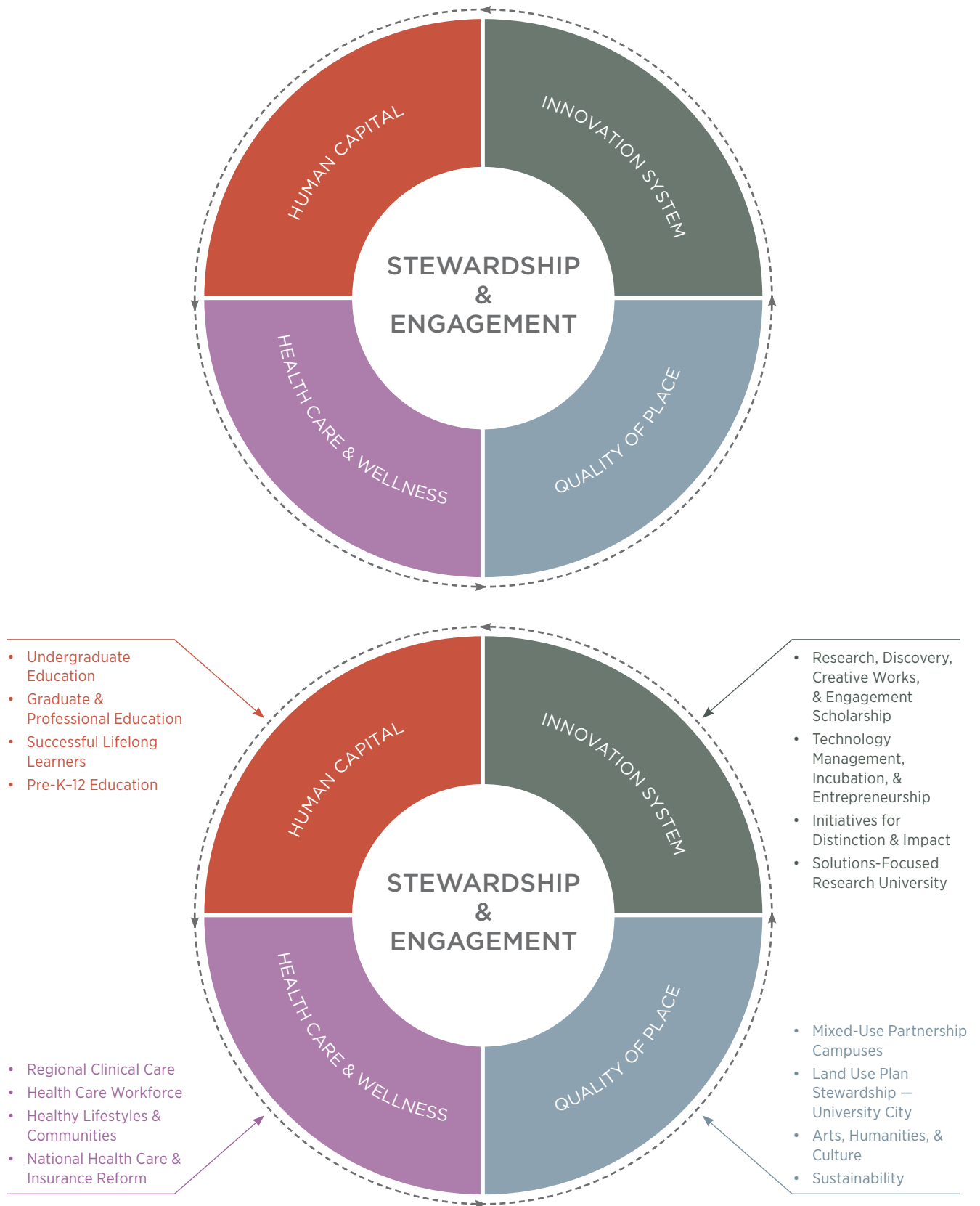STEWARDSHIP & ENGAGEMENT

HUMAN CAPITAL

INNOVATION SYSTEM

HEALTH CARE & WELLNESS

QUALITY OF PLACE

• Undergraduate Education
• Graduate & Professional Education
• Successful Lifelong Learners
• Pre-K–12 Education

• Research, Discovery, Creative Works, & Engagement Scholarship
• Technology Management, Incubation, & Entrepreneurship
• Initiatives for Distinction & Impact
• Solutions-Focused Research University

• Regional Clinical Care
• Health Care Workforce
• Healthy Lifestyles & Communities
• National Health Care & Insurance Reform

• Mixed-Use Partnership Campuses
• Land Use Plan Stewardship — University City
• Arts, Humanities, & Culture
• Sustainability

Higher Education Engagement in Economic Development

Appendix 2—Selected References

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Appendix 3—A Worksheet for Analysis of Existing Programs

Our Institution's Programs
in **INNOVATION**

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Our Institution's Programs
in **INNOVATION + TALENT**

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Our Institution's Programs
in **INNOVATION + PLACE**

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Our Institution's Programs
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Our Institution's Programs
in **TALENT + PLACE**

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Our Institution's Programs
in **PLACE**

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Our Institution's Programs in
INNOVATION + TALENT + PLACE

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Higher Education Engagement in Economic Development

Appendix 4—University of Idaho's Example—Use of the Taxonomy in Organizing Existing Programs

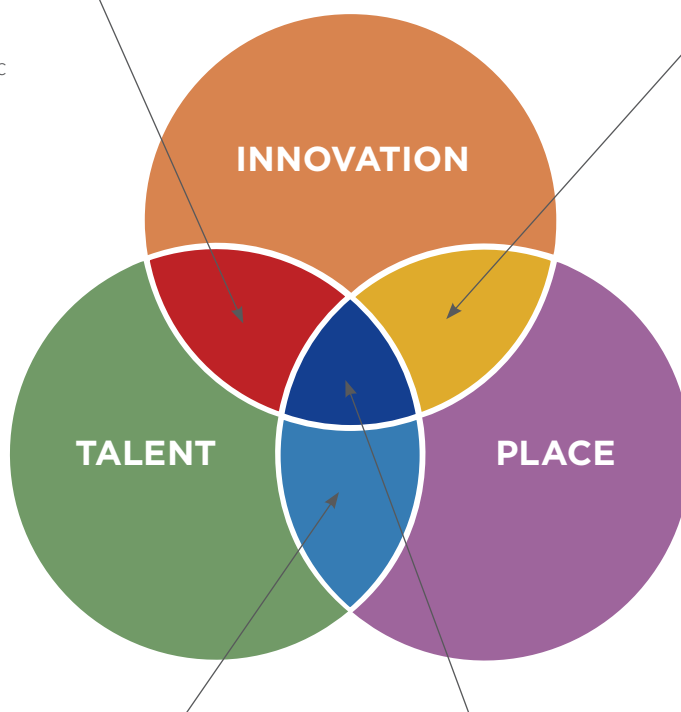**Our Institution's Programs in INNOVATION + TALENT**

- Capstone programs
- VIEW
- Externships in OTT
- Undergraduate Research Experience
- Graduate Research
- Vandal Solutions
- Barker Trading Program
- Davis Investment Group
- Business Process Center
- Small Business Legal Clinic
- Business Incubation
- Dig'n IT Initiative
- Operation Education
- Bioinformatics & Computational Biology
- Environmental Science
- Neuroscience
- National Institute for Advanced Transportation Technology

Our Institution's Programs in INNOVATION

- Basic Research
- Testing Services
- Agronomic Research
- Varietal Development
- Applied Research
- Industry-Contracted R&D
- Technology Transfer
- Integrated Design Lab
- TechHelp
- Laboratory of Anthropology
- National Gap Analysis Program
- Experiment Stations
- NASA Idaho Space Grant Consortium

Our Institution's Programs in INNOVATION + PLACE

- Center for Rural Resiliency
- Food Technology Center
- Idaho Geologic Survey
- Idaho State Climate Services
- McClure Center on Science and Public Policy
- Extension Forestry
- Policy Analysis Group
- Science on Tap

INNOVATION

TALENT

PLACE

Our Institution's Programs in TALENT

- Degree Programs
- Certifications
- Intern/extern-ships
- Utility Executive Course
- Executive Speaker Series
- Dual Credit
- Workshops
- Clinics
- Jr. Engineering Math & Science Summer Program
- Women in Engineering Day
- Federal TRiO Program
- Professional Science Master's Program
- Executive Master's of Business Administration
- Polya Math Center
- Center for Ethics
- Adventure Learning at University of Idaho (AL@UI)
- Sherman J. Bellwood Memorial Lectures
- Borah Symposium

Our Institution's Programs in TALENT + PLACE

- Service Learning
- 4-H Youth Development
- Economic Development Law Clinic
- Low Income Law Clinic
- Immigration Law Clinic
- Mediation Law Clinic
- Sports Medicine Clinic Law Pro Bono Program
- Urban Design Center
- CAA Community-based Design
- Lionel Hampton Jazz Festival
- Student Organizations
- McCall Outdoor Science School (MOSS)
- Wildland Fire Outreach
- Auditorium Chamber Music Series
- DancersDrummersDreamers
- Shades of Black
- Study Abroad

Our Institution's Programs in PLACE

- Festivals Athletic Events
- Art Exhibits
- Recitals
- Food Security
- ASUI Center for Volunteerism & Social Action
- Sustainability Center
- Outdoor Program
- Idaho Repertory Theatre

Our Institution's Programs in INNOVATION + TALENT + PLACE

- Bioregional Planning & Community Design
- Center for Disability and Human Development
- Workforce Development - DACUM
- Community Water Resource Center
- Healthy Food, Healthy Community
- Independent Study in Idaho
- Waters of the West
- Paradise Creek Watershed Research
- Experimental Forest
- Hagerman Fish R&E Center
- Cooperative Extension
- Taylor Ranch Wilderness Station