The University's Role in Innovation, Entrepreneurship, & Economic Development

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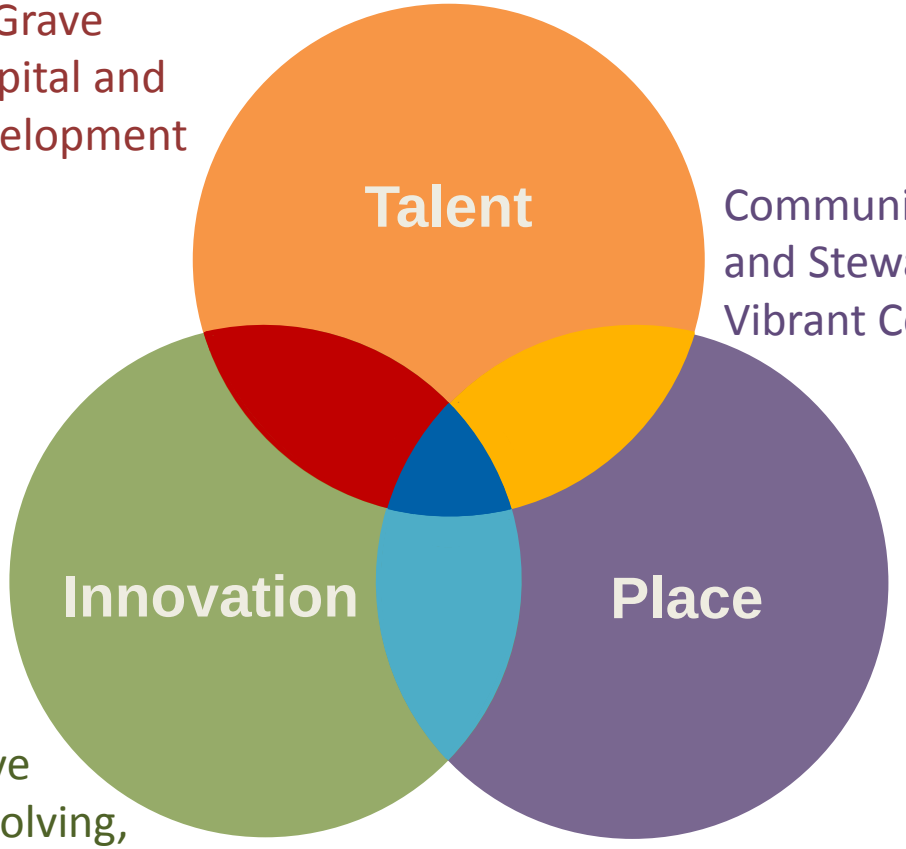
ASU Arizona State University

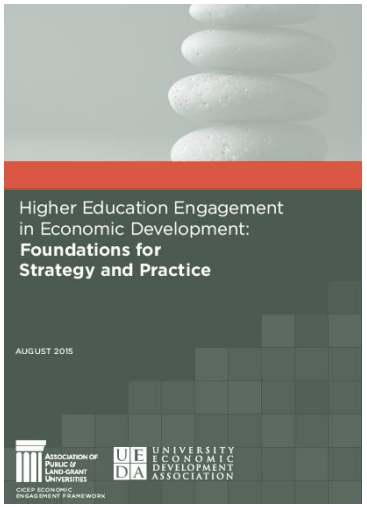
What Does Economic Development Mean for a University?

Cradle-to-Grave
Human Capital and
Talent Development



Community-Connected Institutions
and Stewardship for
Vibrant Communities

Research, Creative
Work, Problem-Solving,
and Entrepreneurship



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Sharing Resources & Best Practices
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Greater Engagement with the Private Sector
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Active & Responsive Community Partners
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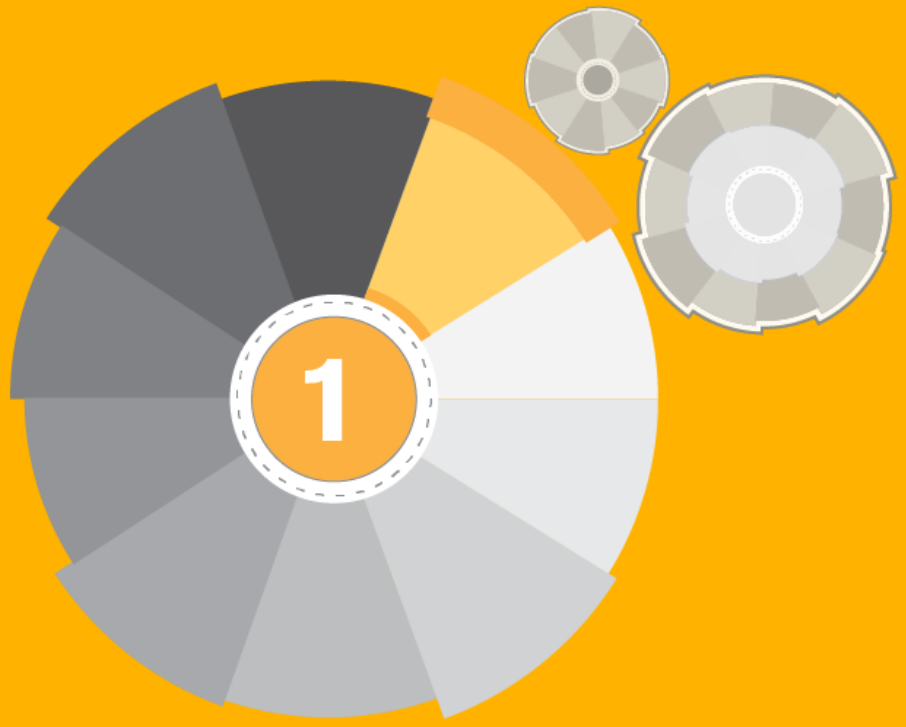
A Comprehensive Culture of Innovation & Entrepreneurship

Greater Engagement with the Private Sector



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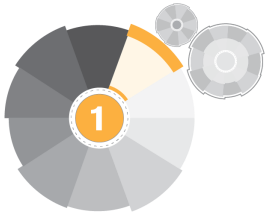


To achieve intellectual, scientific, public policy, social, cultural and economic outcomes:

- Apply knowledge
- Ease tech transfer & licensing
- Support regional industry clusters
- Accelerate innovation
- Explore new partnership models
- Assess the evolving innovation ecosystem

Purdue University – Gallup-Purdue Index

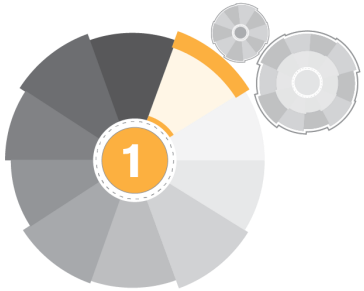
- Leveraging expertise to challenge traditional views on performance metrics
- Measures the most important outcomes of higher education
- Provides critical insights for universities, educators, and employers
- Largest representative study of college graduates in U.S. history

PURDUE UNIVERSITY GALLUP

Gallup-Purdue Index

Great Jobs And Great Lives

Greater Engagement with the Private Sector



University of Michigan
businessengagement
CENTER

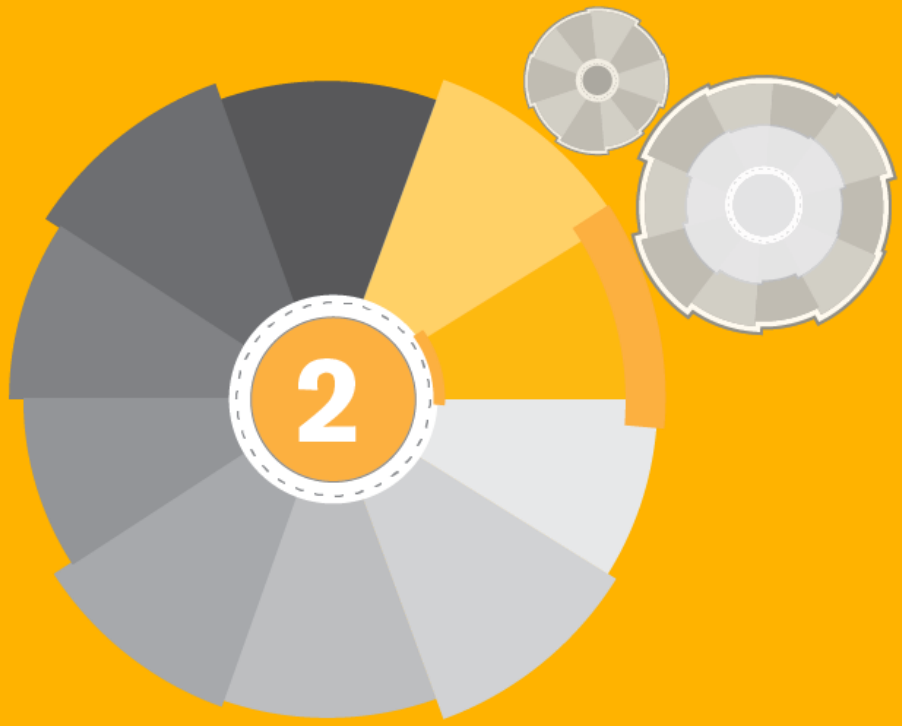
Business Engagement Center

- Provides a single, visible point of entry to the university for industry seeking to partner with university

Venture Center

- Central hub for university startup ventures
- Serves entrepreneurs and venture funding partners who are interested in starting new businesses based on university research

Health and Well-Being of the Community



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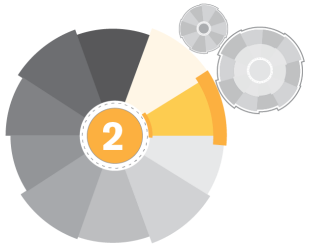
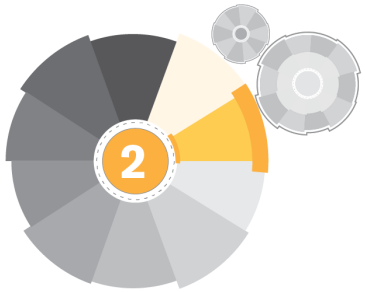
Health and Well-Being of the Community



- **Share responsibility with many other organizations in the community and region**
- **Engage with stakeholders committed to health, wellness, and social well-being of local populations**
- **Build an integrated network with deep roots in the community**
- **Leverage university expertise for community resources**

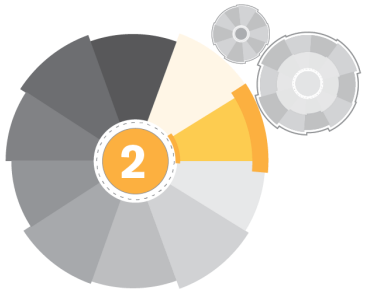


Bard College **– Bard Prison Initiative**

- Opportunity for incarcerated men and women to earn credits toward a bachelor's degree

- Largest prison initiative of its kind in the U.S.

BPI
BARD PRISON INITIATIVE



Northern Illinois University

Excellence in community, social, and cultural development

- Commitment to expanding broadband internet access throughout region and state
- Helping grow businesses and create jobs
- Supporting growth and development of an aerospace cluster in a distressed region of state
- Leveraging workforce education, R&D partnerships, regional branding, and stimulation of entrepreneurship

NIU Northern Illinois University

Transdisciplinary Research

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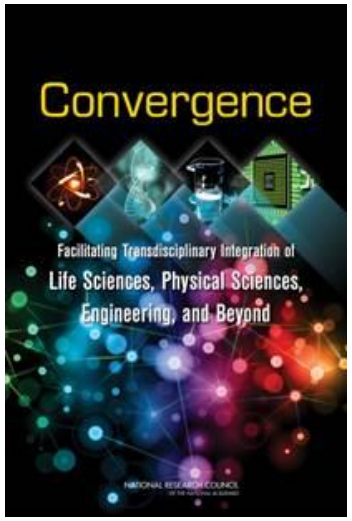
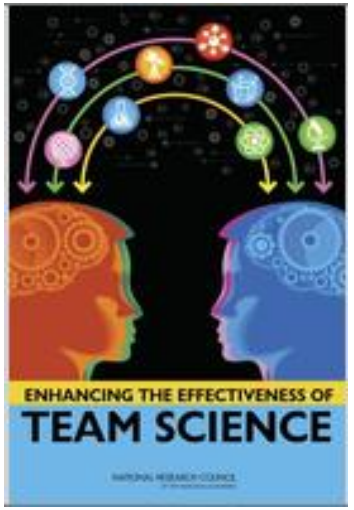
Transdisciplinary Research

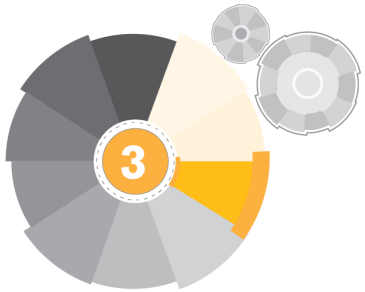
- **Facilitate 21st Century Knowledge creation at the intersections, collisions, and new fusions of academic disciplines**

- **Recognize that generating knowledge in the 21st century requires problem-focused and transdisciplinary perspectives**

- **Enhance opportunities for faculty, students, and staff to engage with the public, industry, and government beyond their disciplines and institutions**







Stanford University – Digital Humanities

Interdisciplinary program sheds new light on humanities research using tools such as:

- 3-D mapping
- Electronic literary analysis
- Digitization
- Advanced visualization techniques

STANFORD HUMANITIES CENTER

Innovation in *all* disciplines

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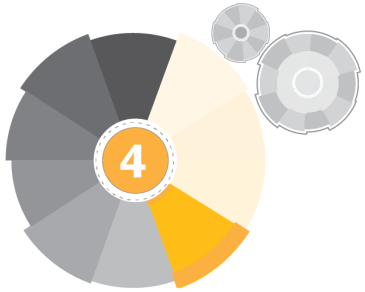
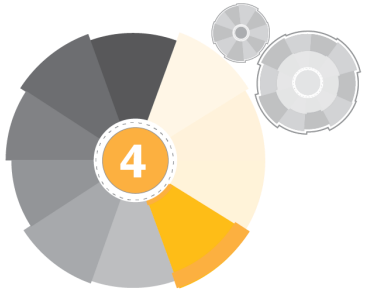
Innovation in *all* disciplines



- **Affirm that, in innovation and engagement, humanities, arts social sciences, and STEM disciplines are all vital**
- **Engage diverse disciplines to play significant roles in creating economic opportunity and effective societies**
- **Strategically integrate perspectives and strengths of multiple disciplines into public and social policy**
- **Recognize that the combination of disciplines can make communities competitive and desirable places to live**



New York University – NYU Wagner Innovation Labs

- New series of public policy experiments
- Marrying theory and practice
- Promoting informed, evidence-based decision-making in a complex world

NYU Wagner innovation LABS

Innovation in Teaching & Learning Practices

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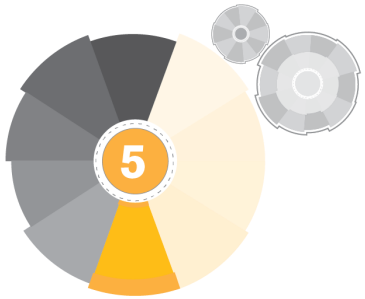
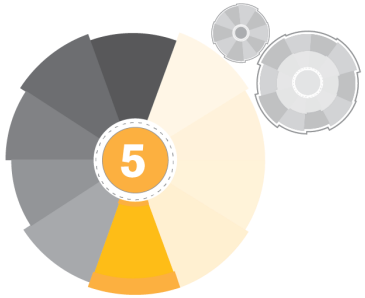
Innovation in Teaching & Learning Practices



- **Align teaching and learning goals with institutional incentives**
- **Provide access to programs that encourage innovative teaching and pedagogy exploration**
- **Convene teachers from diverse sectors and backgrounds to provide ongoing assessment of effectiveness**
- **Collaborate with cross-institution and cross-sector stakeholders to explore new practices**



Georgia State University – Center for Instructional Innovation

- Campus-wide approach to address student outcomes
- Dramatic increases in graduation rates
- Successfully eliminated income and race as predictors of student outcomes

Georgia State University | CENTER FOR INSTRUCTIONAL INNOVATION

Serving Regional Human Capital & Workforce Needs

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Serving Regional Human Capital & Workforce Needs

- **Consider human capital development to mean the cultivation of intellect, general knowledge, career/occupation skills, life/civic responsibility, and global citizenship across all populations**

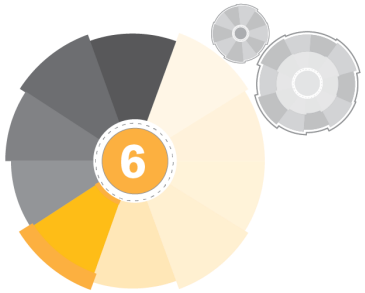
- **Leverage university resources, such as workforce education and R&D partnerships, to serve the local economy**

- **Create flexible and responsive pathways to prepare for demands of a rapidly changing economy**

University of New Mexico – Project ECHO

- Lifelong learning and guided practice model for medical education
- Increases workforce capacity to provide specialty care and reduce health disparities
- Virtual clinics with community providers to better serve rural populations

UNM



Rework America Connected

- Partnership will use online technology to improve the way job seekers find jobs, learn new skills and improve the way employers find workers.
- Rework America Connected is building the platform in partnership with LinkedIn, Arizona State University, and edX
- The City of Phoenix and Phoenix employers and educators will connect and scale these efforts while tailoring the program to Phoenix's needs

ASU Arizona State University

Maricopa Community Colleges®

City of Phoenix

Markle Advancing America's Future

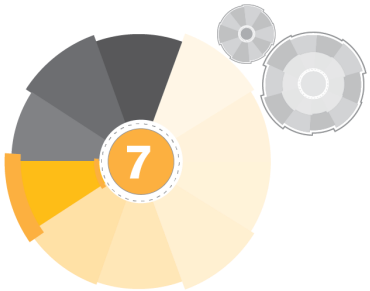
edX

LinkedIn

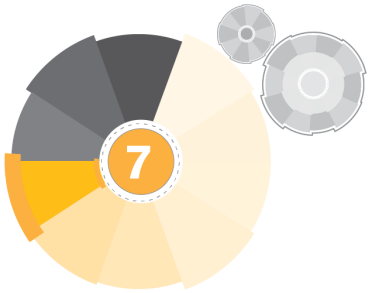
Active & Responsive Community Partners

ASU Arizona State University

Active & Responsive Community Partners



- **Engage with communities in social, physical, and virtual forms**
- **Actively pursue working and collaborating for the common good with other community stakeholders**
- **Leverage university resources to assess needs and emerging trends in community**

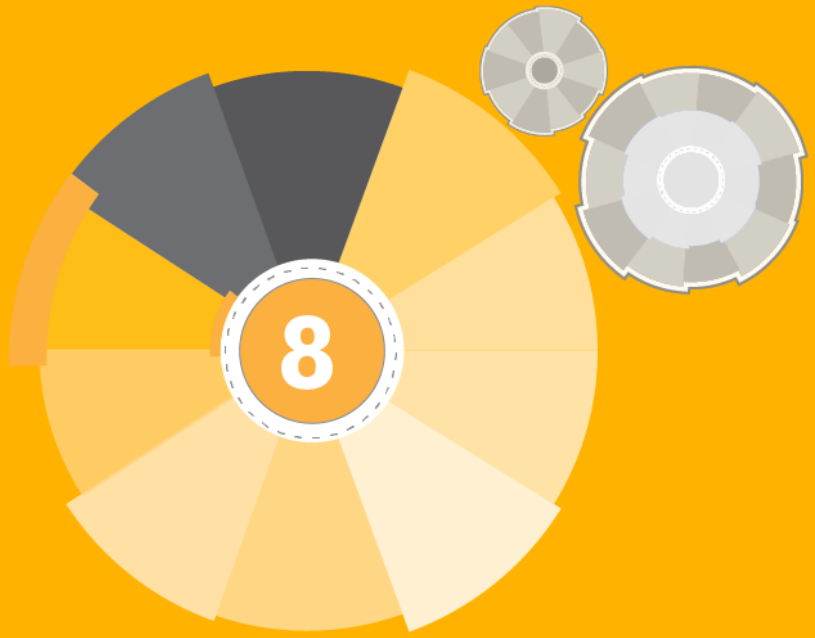


University of California system – The AB450 and Undocumented Student Center

Provides support for undocumented students, including:

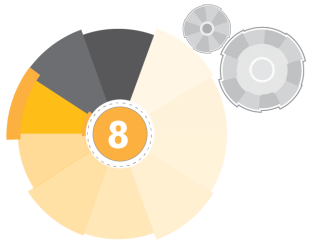
- Community resources
- Academic success services
- Pro-bono legal assistance

A Comprehensive Culture of Innovation & Entrepreneurship

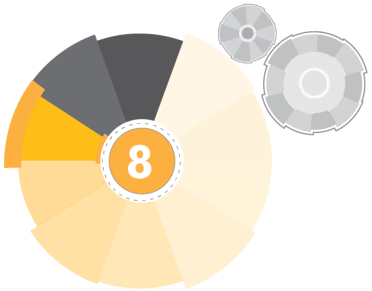


ASU Arizona State University

A Comprehensive Culture of Innovation & Entrepreneurship



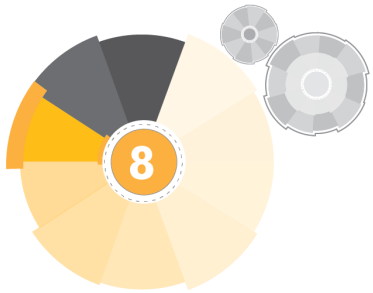
- **Embed Economic Engagement, Innovation, and Entrepreneurship Across Institutional Mission**
- **Align business process with goals for collaboration and innovation**
- **Value productive partnerships and collaborations and ensure that business processes reflect this value**
- **While respecting legitimate institutional or governmental constraints, also redesign, streamline, and adapt business and decision-making processes**



The University of North Carolina at Chapel Hill

- Kauffman Campuses Initiative recipient
- Campus culture encourages entrepreneurial mindset and innovation
- Opportunities and resources that support students and faculty across the institution

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL



University of Houston

- Creating an innovation ecosystem that fully integrates internal resources and input from university stakeholders and industry experts
- Culture of developing technical capacity and entrepreneurial talent in students
- Building an Energy Research Park that is making a social and cultural impact in community

UNIVERSITY of HOUSTON

Sharing Resources & Best Practices

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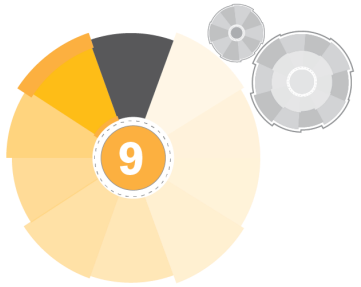
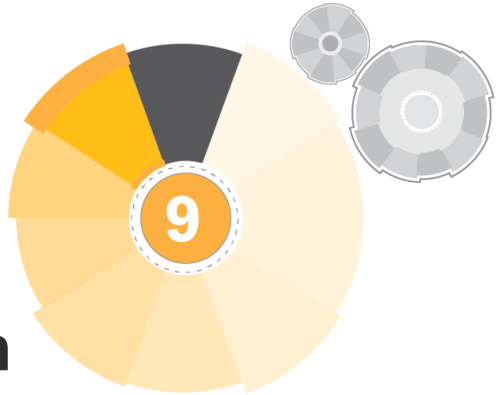
Sharing Resources & Best Practices



- **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**
- **Create responsive mechanisms for efficient information transfer and communication**
- **Provide mechanisms to proliferate best practices across institutions (e.g., University Innovation Alliance)**



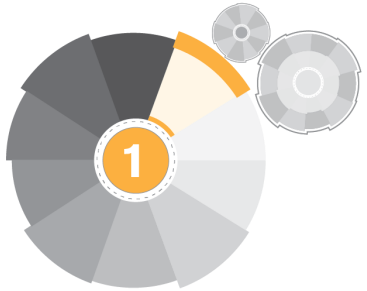
Northwestern University – Partnerships for Biotechnology Education

- Partnering with Baxter, a global healthcare company, and Lindblom Math & Science Academy, a Chicago public school serving predominantly minority and low-income students
- Trains hundreds of teachers
- Reached 20,000 students through innovative curriculum

NORTHWESTERN UNIVERSITY

Arizona State University

A New American University



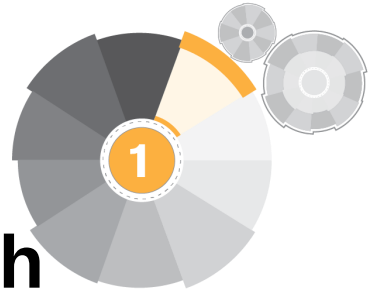
Industry Collaboration

- **Supporting industry development**

  strategic partnerships accelerate success

- **Business Retention**

  keeping a company thriving in Arizona



Collaboration & Use-Inspired Research

ASU leads **4 NSF Industry/University Cooperative Research Centers**

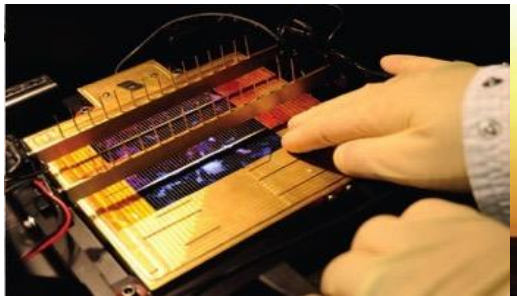
ASU is home to **2 Engineering Research Centers (ERCs)** by the National Science Foundation and partners in 3 others

- Quantum Energy and Sustainable Solar Technologies (QESST)
- The Center for Bio-mediated and Bio-inspired Geotechnics (CBBG)

QESST

CBBG
Center for Bio-mediated & Bio-inspired Geotechnics

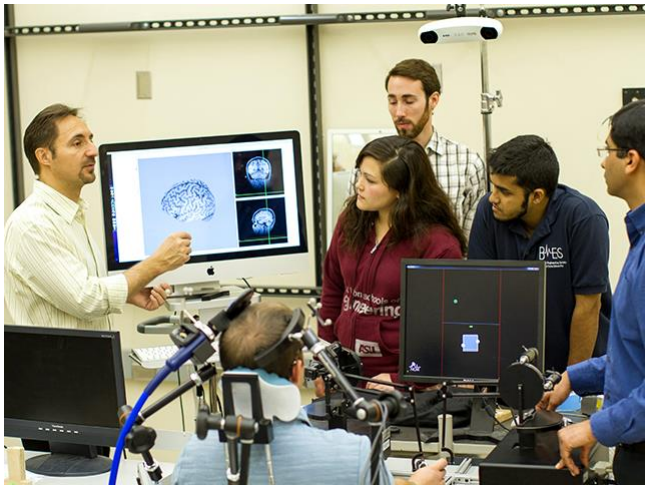
NSF



Mayo Clinic and ASU

Transforming Health Care

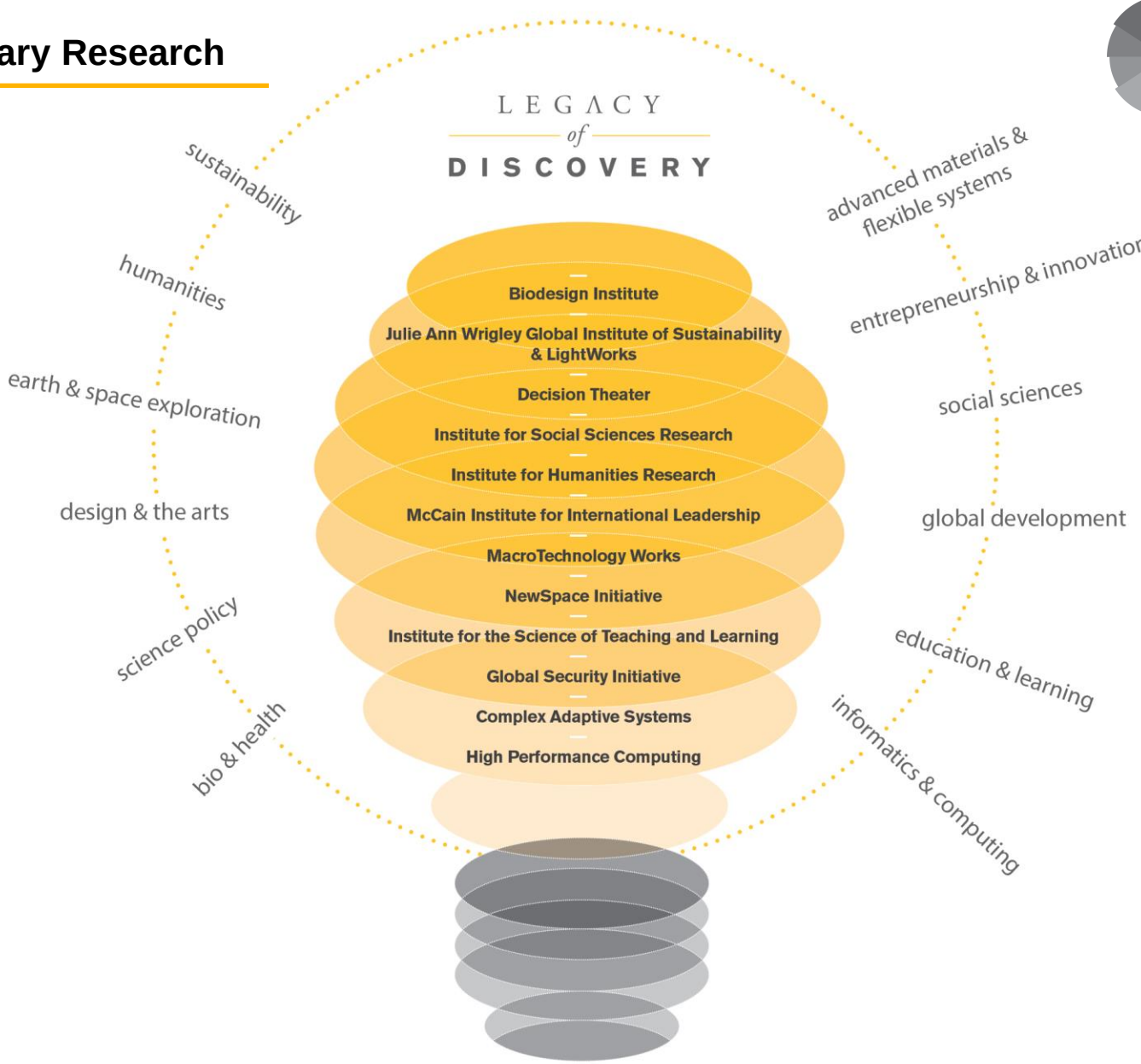
- School for the Science of Health Care Delivery
- College of Nursing and Health Innovation
- School of Biological and Health Systems Engineering
- Mayo Medical School Campus
- Joint research centers, degree options, projects, and faculty appointments
- First and only university to partner with Mayo Clinic Care Network



MAYO CLINIC

ASU ARIZONA STATE UNIVERSITY

Transdisciplinary Research



Biodesign Institute

Nature inspired solutions for advancing human health, national security and sustainability

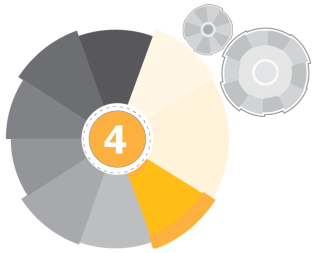
MAYO CLINIC

Center for Cognitive Ubiquitous Computing (CUbiC)

- Interdisciplinary research that serves the needs of physically challenged individuals
- Human-centered multimedia computing focusing on assistive, rehabilitative and health care technologies

CUbiC Center for Cognitive Ubiquitous Computing

Innovation in *all* disciplines



ASU school of human evolution & social change
ARIZONA STATE UNIVERSITY

ASU SCHOOL FOR THE FUTURE of Innovation in Society
ARIZONA STATE UNIVERSITY

ASU SCHOOL OF EARTH & SPACE EXPLORATION
ARIZONA STATE UNIVERSITY

2016 most innovative schools in the U.S.

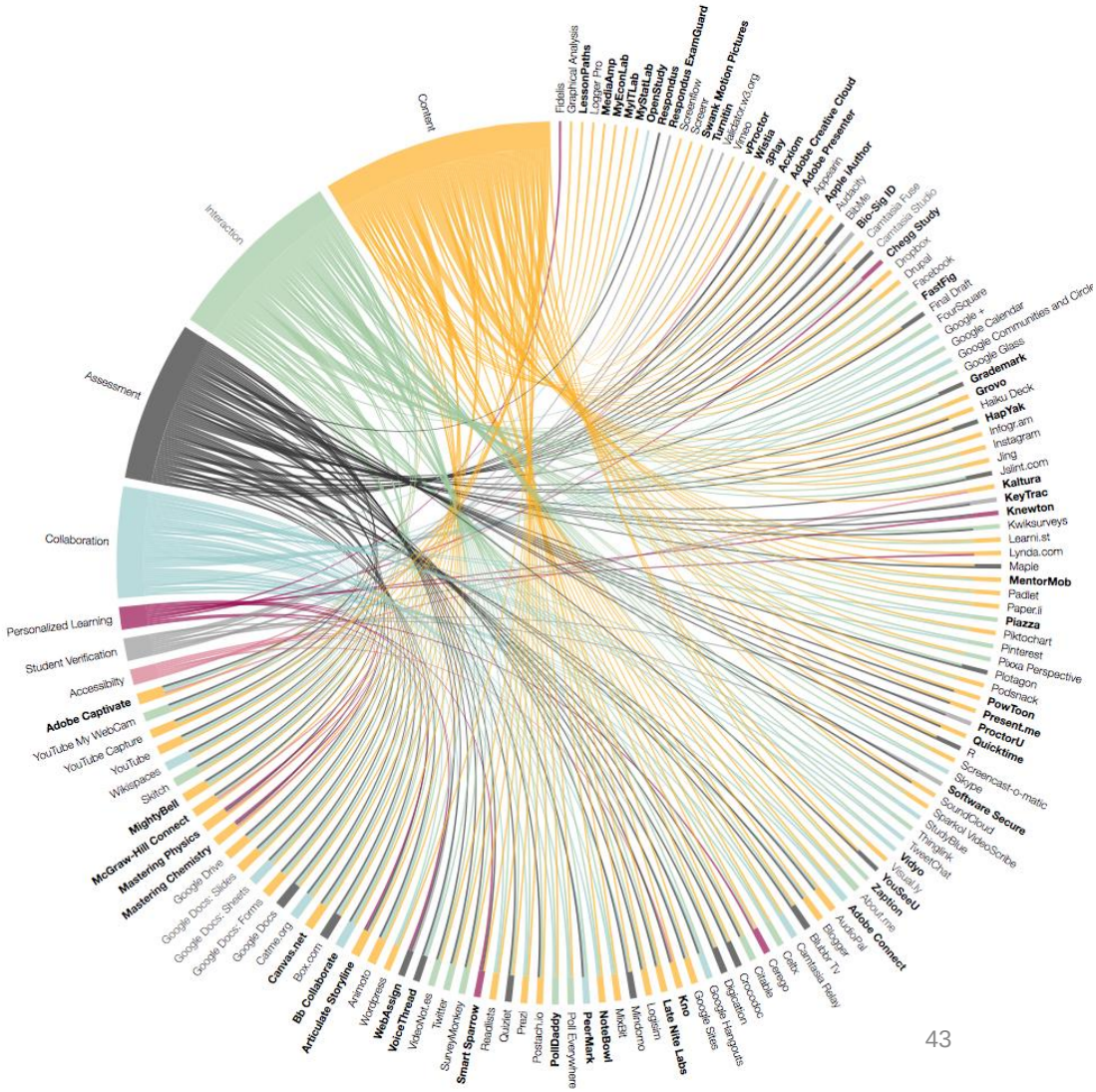
#1 Arizona State University

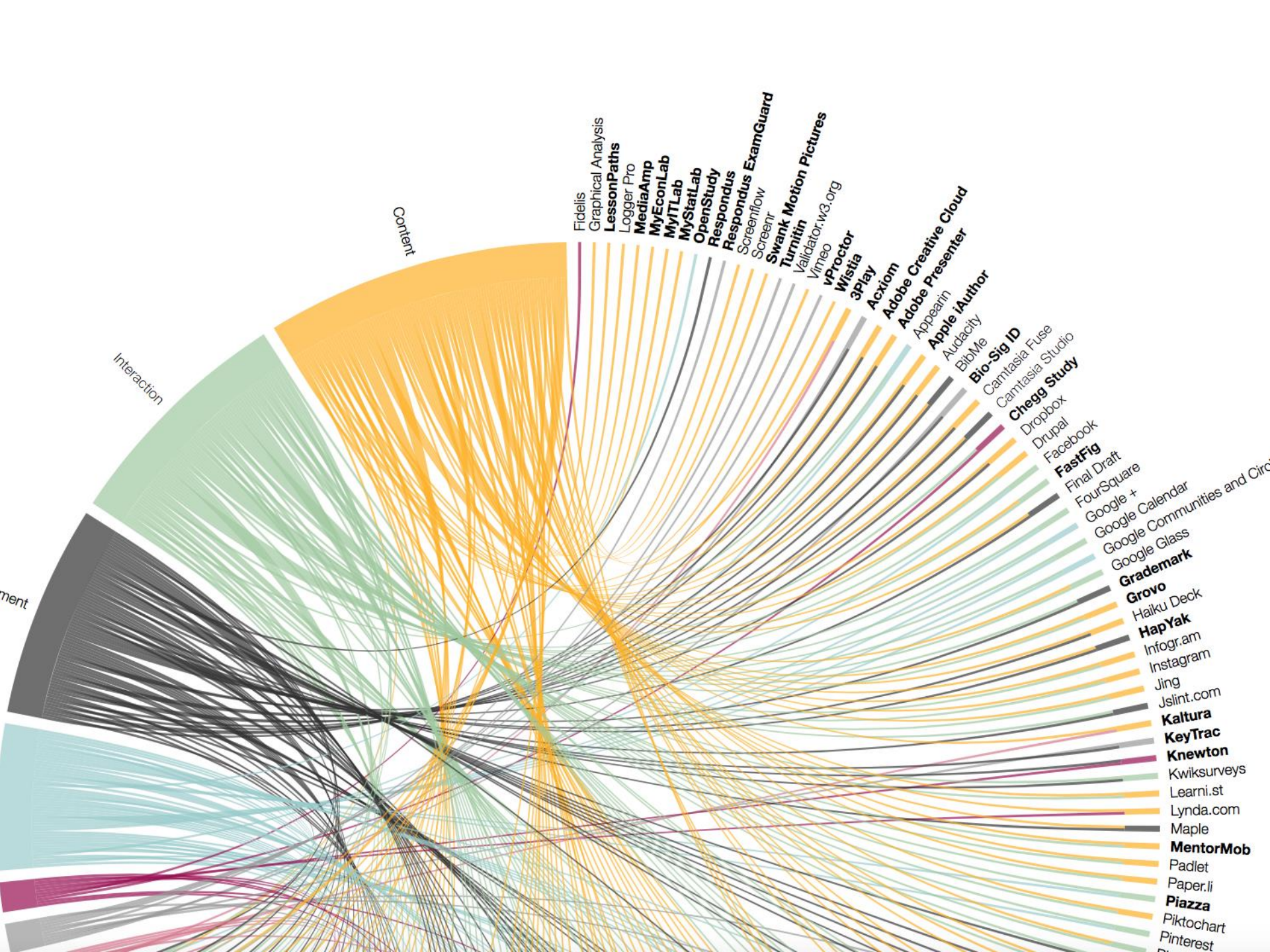
- U.S. News & World Report

Rankings based on schools making the most innovative improvements in terms of curriculum, faculty, students, campus life, technology or facilities

EdPlus at ASU

- Digital learning platform with over 130 3rd-party tools and services used by faculty and students
- Collaborative partnerships exploring technology to improve online teaching and learning experiences
- ASU Online instructional designers and technologists working with partners to guide product development




Content
Interaction
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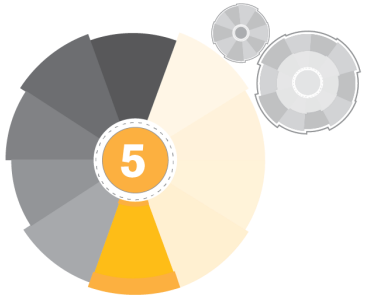
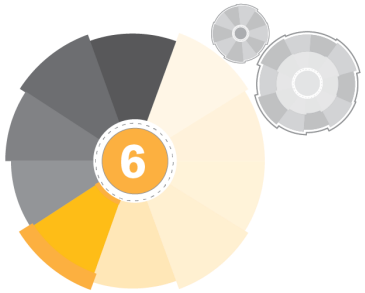
Fidelis
Graphical Analysis
LessonPaths
Logger Pro
MediaAmp
MyEconLab
MyITLab
MyStatLab
OpenStudy
Respondus
Respondus ExamGuard
Screenflow
Screenr
Swank Motion Pictures
Turnitin
Validator.w3.org
Vimeo
vProctor
Wistia
3Play
Acxiom
Adobe Creative Cloud
Adobe Presenter
Appearin
Apple iAuthor
Audacity
BibMe
Bio-Sig ID
Camtasia Fuse
Camtasia Studio
Chegg Study
Dropbox
Drupal
Facebook
FastFig
Final Draft
FourSquare
Google +
Google Calendar
Google Communities and Circ
Google Glass
Grademark
Grovo
Haiku Deck
HapYak
Infogr.am
Instagram
Jing
Jslint.com
Kaltura
KeyTrac
Knewton
Kwiksurveys
Learni.st
Lynda.com
Maple
MentorMob
Padlet
Paper.li
Piazza
Piktochart
Pinterest



Global Freshman Academy

- Partnership with edX allows individuals anywhere in the world to take freshman-level courses online for free
- After completion, students may pursue option to receive course credit from ASU
- Cost-effective, flexible opportunity for lifelong or college-track distance-learning

edX | ASU Arizona State University



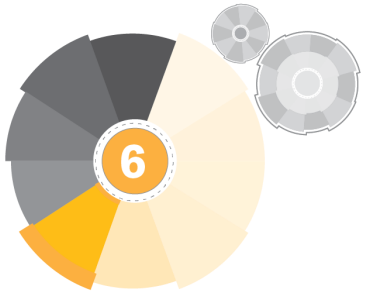
Starbucks College Achievement Plan

- Partnership between ASU and Starbucks provides education benefits to Starbucks partners
- Investment in the education of our nation's workforce through opportunity to
- Starbucks will invest up to $250 million to help at least 25,000 partners graduate by 2025
- Nearly 2,000 Starbucks partners have enrolled since April 2015

#5 in the nation for producing the best-qualified graduates

- Wall Street Journal Survey of corporate recruiters

ASU Arizona State University



Business Attraction

Leveraging ASU assets to support our local economic development objectives

ZocDoc

GoDaddy®

GM

workiva

Greater Phoenix
ECONOMIC COUNCIL

ARIZONA
COMMERCE
AUTHORITY

Collaborations with Cities

Scottsdale

- SkySong (Groupon, Theranos)
- Alexandria Co-working Network

Phoenix

- Mayo Medical School Arizona Campus
- Markle Rework America Connect

Mesa

- Air Force Research Lab (now AZLabs)

Tempe

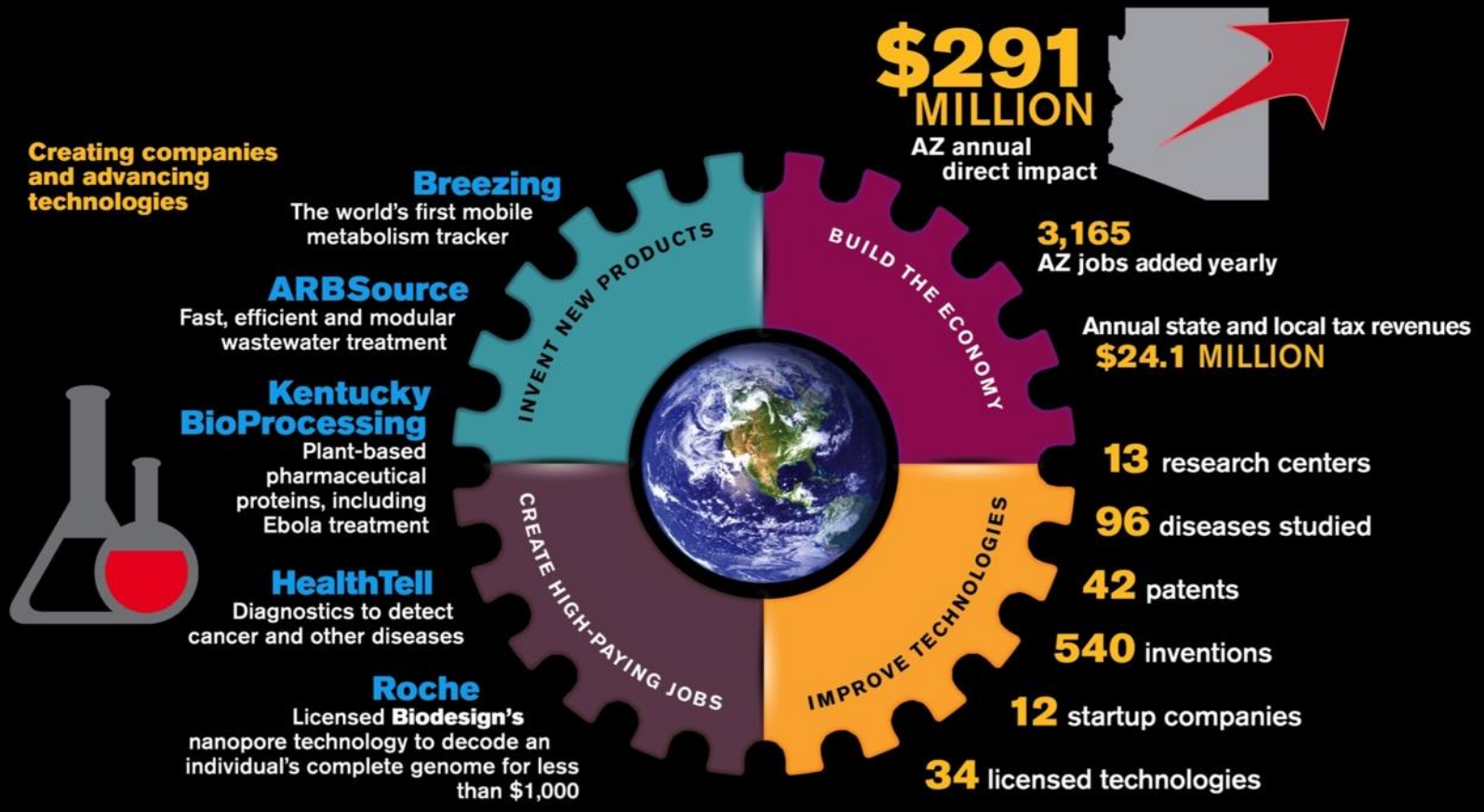
- Stadium District (State Farm)
- ASU Research Park (Go Daddy, MacroTechnology Works)

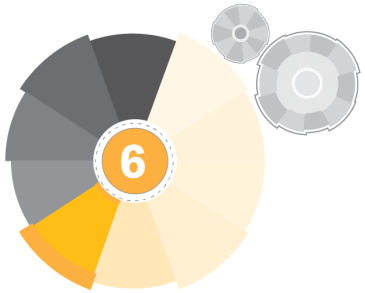
Chandler

- Intel Corporation, Arizona Campus

The Biodesign Institute: Translating research into

REAL-WORLD IMPACT





Economic impact of ASU in 2014:

County GDP impact

$3.1 billion — 2009

$3.9 billion — 2014

State & local tax revenue

$253 million — 2009

$316 million — 2014

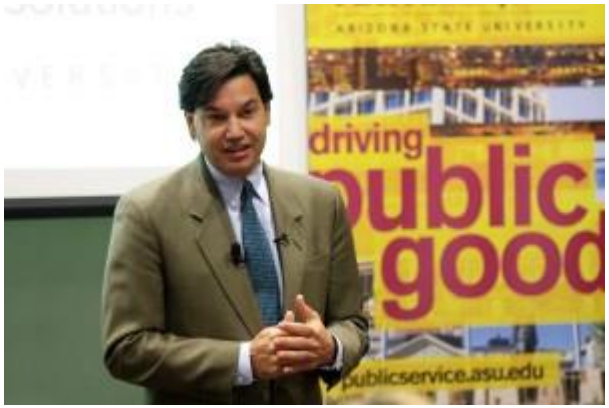
Construction growth

$15.2 Million State Revenue

2,138 jobs

ASU Public Service Academy

- First undergraduate program in the nation to integrate cross-sector and civilian-military experiences to develop collaborative leaders of character
- Two tracks: one for ROTC students and one for aspiring civilian service leaders
- Capstone project requires focus/application to community



Carnegie Foundation
Elective
Community Engagement
Classification

THE PRESIDENT'S
HIGHER EDUCATION COMMUNITY SERVICE
★HONOR ROLL★

A Comprehensive Culture of Innovation & Entrepreneurship

1.0 — 2006

KAUFFMAN
The Foundation of Entrepreneurship

$5M Kauffman Foundation grant to expand and transform ASU entrepreneurship education

2.0 — 2013 - 2014

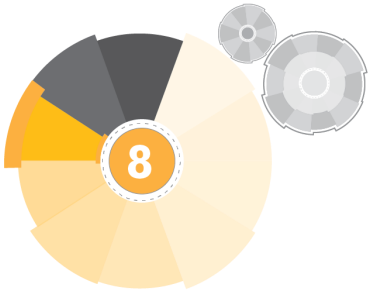
1,000 students participated in entrepreneurship programs:

- **Startup Summit**
- **Edson Student Entrepreneur Initiative**
- **Innovation Challenges**

More than 200 students participated in the **2014 CGI U conference** at ASU

3.0 — 2015

- **Entrepreneurship centers** open in schools of business and engineering
- **More than 9,000 students** participated in entrepreneurship outreach and engagement activities in 2014/2015

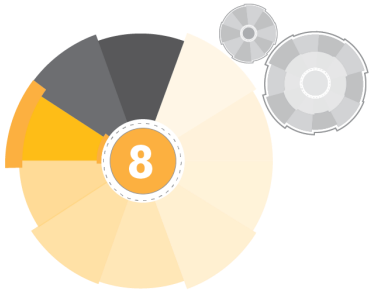


Impact: Entrepreneurship

- **Innovation Challenges, Launch Days, Start-up Spring Break** engaged **over 12,000 students** last year
- **Entrepreneurship Outreach Network**, expanded with grant from National Institute of Library and Museum Services
- **Startup School**, open access continuing education program
- **Furnace**, PACE/T2 commercializes tech from DOD labs and facilitates venture creation
- **Diversity in Entrepreneurship**, supported by U.S. Small Business Administration and JP Morgan Chase Foundation
- **Women's Entrepreneurship Initiative,** supported by U.S. Small Business Administration
- **Clinton Global Initiative University,** social entrepreneurship

NeoLight

FLUIDICENERGY™



Technology Transfer

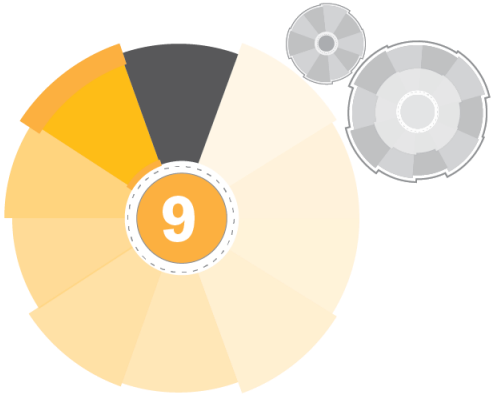
Notable achievements in FY15 include:

- 270 invention disclosures
- 63 U.S. patents
- 12 new start-up companies launched
- 81 major licensing and option transactions

***ASU California Center** in Santa Monica expands ASU's entrepreneurship networks beyond Arizona*

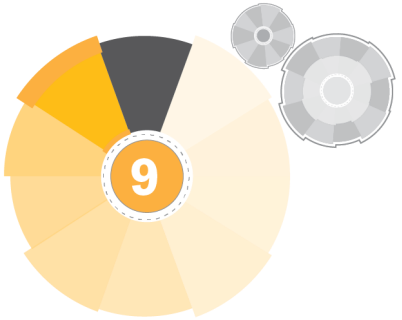
Spinout companies based on technologies developed by ASU researchers have raised over **$500 million** in external funding as of fiscal year 2015.

FLUIDICENERGY™ heliae HealthTell™



Higher Engineering Education Alliance Program (HEEAP)

ASU's Ira A. Fulton Schools of Engineering and industry partners are transforming top engineering and technical universities in Vietnam



University Innovation Alliance

A unique consortium of public research universities established to help more students from all socioeconomic backgrounds graduate from college

UNIVERSITY INNOVATION ALLIANCE

OSU Oregon State University

KU THE UNIVERSITY OF KANSAS

THE OHIO STATE UNIVERSITY

PURDUE UNIVERSITY

UC RIVERSIDE UNIVERSITY OF CALIFORNIA

IOWA STATE UNIVERSITY

MICHIGAN STATE UNIVERSITY

ASU ARIZONA STATE UNIVERSITY

THE UNIVERSITY OF TEXAS AT AUSTIN

Georgia State University

UCF

Economic Development Impact

- **Provides access** to a quality education for an increasing number of students
- **Produces highly qualified graduates** for companies to improve and increase their workforce
- **Develops multiple connection** points for the people that we serve
- **Creates collaboration** to help revitalize the the socio-economic communities in which we live
- **Enables the success** of all of our academic, industry, agency and foundation partners

ASU Arizona State University

ASU
ARIZONA STATE UNIVERSITY

Thank You and Invitation to Visit ASU

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ASU Arizona State University