BOUNDLESS
A PROGRESS REPORT FOR THE NEVER SETTLE ACADEMIC AND BUSINESS PLAN FOR THE UNIVERSITY OF ARIZONA

PRESIDENT ANN WEAVER HART
FEBRUARY 2015
2020 Enterprise Targets
2013-14 Actuals
2008-2009 Actuals
UA graduates leaders who, through a tailored learning experience, apply their knowledge and solve the world’s grand challenges.

- Integrate new modes of thinking, teaching, and learning with **unwavering student support**

- Design an accessible and extraordinary learning experience, **tailored** to each student

- Provide unprecedented opportunities to apply knowledge through **real-world experiences**
KEY STRATEGIES

- Recruit > retain > graduate > career
- Provide a dynamic educational experience
- Sustain an environment of 100% engagement
Access and success drive us:

- Entering class, Fall 2014:
  - Largest
  - 28% increase in new student enrollment from 2004-2014

- Most diverse:
  - 76% increase in overall student diversity from 2004-2014

- Increases in:
  - Retention
  - Graduation rates (4-year, and 6-year)
UNDERGRADUATE SUCCESS

UA Class Entering in Fall 2008

- 4-year degree from University of Arizona
- 4-year degree from other institution
- 2-year degree from other institution
- Retained at University of Arizona
- Retained at other 4-year institution
- Retained at other 2-year institution

Freshmen 4-Year Snapshot

Transfer 4-Year Snapshot
Freshman to Sophomore

- Tailored, scalable support
- Integrated use of data
- Expand successful pilots

On Track To Meet 2020 Goals
Individualized approach to academic success

- Civitas – dynamic, big data integration
- Expansion of successful pilots
- Academic recovery support
- Engaged learning and 100% Engagement
- Tuition Guarantee Program
Retention and Graduation Summary

- **1-Yr Retention**: 2004: 85%, 2020: 90% Projected
- **6-Yr Graduation**: 2004: 55%, 2020: 65% Projected
- **4-Yr Graduation**: 2004: 35%, 2020: 47% Projected

Fiscal Year Rates are Reported

Double Digit Increases in Diverse Populations
PROVIDE A DYNAMIC EDUCATIONAL EXPERIENCE
Integration

- System capacity growing
- Leaders in place
- Market research process

Quality

- Highly engaged learning
- Superior faculty
- Student success coaching
- General Education Academy
Support active learning:

- Faculty Learning Communities (80 STEM faculty)
- Half-day workshop on active learning methods (100 STEM faculty and graduate TAs)
- Collaborative learning spaces project (260 Seats)

Provide support for teaching undergraduate writing

- Workshop with writing specialists
- Special sessions for large classes and peer review approaches
- One-on-one-support
OUTCOMES FOR REDESIGNED VS. TRADITIONAL TEACHING; WHAT PROMPTS SUCCESS?

**Instructor Doing**
- Traditional Lecture:
  - 46% Lecturing
  - 15% Posing Questions
  - 10% Polling Question
  - 8% Answering Questions
  - 3% Discussion with 1 Student
  - 13% Demo/Video
  - 5% Administrative Tasks

**Student Doing**
- 69% Listening
- 14% Answering Questions
- 13% Student Questions
- 6% Waiting

**Redesigned Teaching**
- 34% Listening
- 18% Individual Thinking
- 15% Clicker Questions
- 11% Other Group Activity
- 16% Answering Questions
- 13% Student Questions
- 12% Moving/Listening to Groups
- 10% Moving/Guiding Groups
- 6% Answering Questions
- 5% Administrative Tasks
- 3% Follow Up to Activity
- 3% Posing Questions
- 21% Polling Question
- 16% Demo/Video
- 13% Administrative Tasks
OUTCOMES FOR REDESIGNED VS. TRADITIONAL TEACHING

Introductory Physics with Calculus Final Exam - Spring 2014

Students in active learning class outperformed those in traditional lecture on all questions.
SUSTAIN AN ENVIRONMENT OF 100% ENGAGEMENT
Employers want work experience when hiring

- Internships: 23%
- Employment during college: 21%
- College major: 13%
- Extracurricular activities: 12%
- College GPA: 10%
- Relevance of coursework: 8%
- Volunteer experience: 5%
- College reputation: 5%

*Chronicle of Higher Education Survey of Employers, 2013*
Internships:

• 400+ new opportunities

(13% growth)
Internships:

- 400+ new opportunities (13% growth)
- Arizona Blue Chip Leadership Experience (275% growth)
- $300K Grant: UA Institute for Career Readiness and Engagement
- Edge Program
- Engagement activity growth in colleges co-curricular offices
- Graduate with Engaged Learning distinction
- Graduate school, research, and career experience growth
UA enables creative inquiry and discovery that solves grand challenges.

- Attract new resources to Arizona
- Expand economic opportunity for Arizonans
- Benefit the well-being of our citizens to secure a bright future
• Promote **core strengths** to address grand challenges

• Collaborate **beyond disciplinary boundaries** to increase local-to-global impact

• Improve institutional infrastructure to **speed** discovery, knowledge, and application
INNOVATION ECOSYSTEM: OUR APPROACH

DISCOVERY RESEARCH

TRANSLATION R&D

PROTOTYPING, PILOTING AND SCALE-UP

TECHNOLOGY TRANSFER OR INTERNAL COMMERCIALIZATION

EXISTING CLUSTER COMPANIES

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NEW ENTERPRISE FORMATION

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CLUSTER BUSINESS RECRUITMENT

SUSTAINED, LONG-TERM COMMITMENT BY ALL PARTIES

REINVESTMENT
TOP 20 IN RESEARCH EXPENDITURES

$587,029,911 from >3,270 active research projects
PROMOTE CORE STRENGTHS TO ADDRESS GRAND CHALLENGES
PROMOTE CORE STRENGTHS

DEFENSE AND SECURITY

SPACE SYSTEMS

WATER: ARID ENVIRONMENT: ENERGY

POPULATION HEALTH AND HEALTH OUTCOMES

HEALTHCARE DISPARITIES

PRECISION HEALTH

NEUROSCIENCE

SPACE AND OPTICS

ENVIRONMENT

TRANSLATIONAL BIOMEDICINE

IMAGING

INFORMATICS
NEW AWARDS FOR UA RESEARCH

Number of New Awards

FY13: 834 +12% to FY14: 931

Amount Dollars (Millions)

FY13: $203M +53% to FY14: $310M
ESTABLISHED THE DEFENSE AND SECURITY RESEARCH INSTITUTE

$22M

- Including $4.2M NSF grant, AZSecure, to train security workforce
$105M

- $15.2M contract from an international consortium
- To build mirrors for University of Tokyo’s Atacama Observatory 6.5-m telescope in Chile

Unparalleled discoveries of the origins of our universe
$23M

- $5.8M DOE grant for UA to lead national consortium
- Creates network of feedstock testbeds that produce bio-oil in different environments

Optimization for biofuel industry creates new value-add products, technologies
$35M

Multi-Disciplinary Population Health Awards

• Includes $3.1M Western Region Rural Health Needs Assessment award
• Established the Center for Population Science and Discovery
• Center played major role in $20 million CTSA application

Elizabeth Calhoun, PhD
Center Director
AVP for Population Health Sciences
$15M

• For precision health activities (cancer, cardiac and lung disease, and diabetes)

• Established the Center for Genetic and Genomic Medicine

The center was selected as a vanguard site for the Sanford Children’s Genomic Medicine Consortium (January 20, 2015)

Ken S. Ramos MD, PhD
Center Director
$18M

- For health disparities research
- Established the Center for Border Health
  - Director search is underway
  - Will be multi-college, multi-departmental
$45M

- For neurosciences and brain-focused research
- Includes neurological aging and age-related degenerative diseases, gene/environment interactions, chronic pain, traumatic brain injury, and brain imaging
- Established a Center for Innovation in Brain Science
- Director search is underway
COLLABORATE BEYOND DISCIPLINARY BOUNDARIES TO INCREASE LOCAL-TO-GLOBAL IMPACT
TODAY’S THORNY PROBLEMS TRANSCEND A SINGLE APPROACH
• Assists researchers to find funding and collaborators, and to craft compelling proposals

• Since June 2014, assisted with proposals seeking >$143M

• A “one-stop shop” to navigate the agencies funding process

Researchers spend more time on research!
NEW RESEARCH AWARDS
WITH CROSS-COLLEGE COLLABORATIONS

Number of New Awards

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<tr>
<th></th>
<th>FY13</th>
<th>FY14</th>
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<tbody>
<tr>
<td></td>
<td>84</td>
<td>93</td>
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+10%

Amount Dollars ( Millions )

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<tr>
<th></th>
<th>FY13</th>
<th>FY14</th>
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<tbody>
<tr>
<td></td>
<td>$49M</td>
<td>$131M</td>
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+167%
ANSWERING THE “FEEDING 10 BILLION PEOPLE” QUESTION

- UA leads $50M NSF-funded multi-institution collaborative
- Created BIO.C.I. – the cyberinfrastructure and computational tools for researchers worldwide
- Integrates systems to identify life science paths from genetic signatures to observable variation

To improve yield, resistance, value of plants, animals, and other organisms
PREVENTING THE LOSS OF ANTIQUITIES FOR FUTURE GENERATIONS TO ENJOY

• Funded by US State Department grant

• Partnership of:
  • Architects and planners in UA’s Drachman Institute
  • Preservationists and anthropologists in Arizona State Museum
  • Counterparts in Iraq and Kurdistan

• Provide technical assistance to preserve and care for culturally significant artifacts
With decreasing federal R&D investments, UA is seeking new partners beyond the borders of the academy.
ENGAGING WITH INDUSTRY

Number of New Awards
- FY13: 156
- FY14: 198

Amount Dollars (Millions)
- FY13: $29M
- FY14: $31M

+27% increase
+7% increase
IMPROVING THE BOTTOM LINE FOR ARIZONA BUSINESS

- Team of atmospheric scientists, weather modelers, and software developers increase accuracy of weather forecast models – at city block level

- Partnered with AZ Public Service, Tucson Electric Power for city block level information

- APS uses forecast models to selectively drive power through grid

Increased efficiency for APS and reduced outages for consumers
Arizona Emergency Medicine Research Center Increases Statewide Survival Rates from Cardiac Arrest

- Defined novel life-saving interventions for cardiac arrest victims:
  - Rapid delivery of cooling strategies in the field to increase survival
  - Emergency dispatchers to provide CPR instruction to 9-1-1 callers prior to arrival of first responders
  - Survival in Arizona among highest in nation
CURING VALLEY FEVER

- Two-thirds of Valley Fever infections in the U.S. occur in Arizona
  - Primarily affects Tucson-Phoenix area
  - Annual economic impact: $300 million

- **Fast-tracking a potential cure for Valley Fever (Nikkomycin Z)**
  - UA licensed development rights to a Tucson start-up
IMPROVE INFRASTRUCTURE TO SPEED DISCOVERY, KNOWLEDGE, AND APPLICATION
Enabling research results to benefit clinical care of Arizonans

Developing tests to target therapeutics to your genetic signature
INNOVATION AT THE UNIVERSITY OF ARIZONA

• Attracts **new revenue** to Arizona

• Fosters **economic development** and opportunity

• Contributes measurable **public impact**
UA helps Arizona thrive by establishing local and global entrepreneurial partnerships, launching new technology, and scaling operations that enrich quality of life.

- Develop active, **mutually beneficial partnerships** in learning, discovery, and community-impact

- **Scale impact** beyond Arizona to communities around the world
KEY STRATEGIES

• Expand our 21\textsuperscript{st} century super land-grant mission

• Align our output with workforce and knowledge needs

• Develop, expand, and maintain critical strategic partnerships
EXPAND OUR 21ST CENTURY SUPER LAND-GRANT MISSION
COOPERATIVE EXTENSION IN THE 21ST CENTURY

- Develop a well-educated population through access to higher education
- Leverage capabilities and resources to increase local-to-global impact
- Apply scientific and engineering research with rapid technology transfer
“Accept nothing less than a laser focus on growing private sector revenue, jobs, and social value.”
–Dean Shane Burgess

ARIZONA.EDU/IMPACT-MAP
STATEWIDE IMPACT

White Mountain forest health and wildfire mitigation

$100K
- 300 jobs maintained
- >$20M private sector income

Obesity and health-related programs

$288K
- 100,000 people benefitted
- $270M medical cost savings

Cotton integrated pest management

$167K
- 80K lbs of insecticide eliminated
- $17M saved

UA benefits Arizonans in all 15 counties
COMMUNITY AND SCHOOL GARDEN PROGRAM

- A school garden is an innovative and powerful educational tool
- Matches UA student interns with Tucson community organizations and schools
- Enables Tucson teachers to develop and sustain gardens and use them as an experiential learning tool
19 UNIVERSITIES IN FIRST PHASE

57 COMMUNITIES TO BE REACHED

570 STUDENTS INVOLVED IN FIRST PHASE
ALIGN OUR OUTPUT WITH WORKFORCE AND KNOWLEDGE NEEDS
DEGREES AWARDED IN HIGH-DEMAND FIELDS

On Track for 2020 Goals

*STEM, health professions and related; undergraduate + graduate total
UA GRADUATES EMPLOYED IN ARIZONA

1,069 health scientists graduated in 2014, a 51% increase from 2008

2013 Annual Report on Wages Earned by Arizona University System Graduates, Arizona Board of Regents, November 2013
DEVELOP, EXPAND, AND MAINTAIN CRITICAL STRATEGIC PARTNERSHIPS
PARTNERING TO ADDRESS CANCER BURDEN AMONG ARIZONA’S NATIVE AMERICANS

$13M

The National Cancer Institute (NCI)-funded “Partnership for Native American Cancer Prevention”

- Collaboration between UA and NAU
- Prevention and research training to the Hopi Tribe, Tohono O’odham Nation and Navajo Nation of Arizona
- Strong partnerships with tribal leaders
Grant submitted (January 2015)

Accelerating Discoveries Toward Better Health

CTSA Clinical & Translational Science Awards

Impactful Research and Training to Reduce Health Disparities and Improve Community Health in Arizona
AHSC PUBLIC-PRIVATE PARTNERSHIPS

UA College of Pharmacy Medication Management Center (MMC)

Medication Management Center licenses software and business model to Sinfonía Healthcare

Spinoff SinfoníaRx completed

MMC provides services to 6 million lives, saves $75 million in avoidable healthcare costs during 2013

Medication Management Center expands to Phoenix
AHSC PUBLIC-PRIVATE PARTNERSHIPS

- $1B transformative investment in healthcare in Arizona
- Aligns COM-T and COM-P with one health care delivery system
- Provides a state-wide reach for translational programs and efforts to address health care disparities
- Enhanced funds flow from the clinical enterprise required to sustain the academic mission
Hewn from tradition, but not traditional:

- Strategic—Based on UA core strengths
- Multi-lateral, multi-generational, multi-million dollar impact
- Regionally focused—e.g., Gulf Cooperation Council Countries and Latin America
• Dubai is the trade hub for 2.2 billion people; a critical partner in a critical region

• A generation of deep relationships coming into play

• Long-term role as embedded design and sustainability consultant
The UNAM Center for Mexican Studies at the University of Arizona

- The most influential research institution in Latin America, housed on UA campus
- A new paradigm for deeply embedded sustainable research
UA amplifies its strategic pillars, engaging, innovating, and partnering, with effective and efficient support-systems deployed through visionary, cross-cutting strategies.

- **Build an infrastructure** for change that cuts across all elements of our mission and all aspects of our plan

- Advance our **distinctiveness** in interdisciplinarity, diversity, sustainability, and geography
• Redesign collaboration and interdisciplinarity
• Optimize campus resources and virtual reach
• Leverage fundraising capacity
REDESIGN COLLABORATION AND INTERDISCIPLINARITY
• Built new programs to meet market demand

• Adjusted employment options in the academy
2014 SURVEY RESULTS—HIGH COLLABORATION

Bottom 30% of Institutions

Middle 40% of Institutions

Top 30% of Institutions

ABOR Peers

From the Collaborative on Academic Careers in Higher Education at the Harvard Graduate School of Education
REVISING THE PROMOTION AND TENURE PROCESS

Reward and Recognize:

- Collaborative research and scholarship
- Commercialization and business/community partnerships
OPTIMIZE CAMPUS RESOURCES AND VIRTUAL REACH
· Internal performance funding
· New budget that reflects dynamic nature
· Builds more business-like model

Responsibility Centered Management

Good Company

- California Institute of Technology
- Indiana University
- Ohio State University
- Stanford University
- University of Illinois
- University of Michigan
- University of Minnesota
- University of Pennsylvania
- University of Southern California
- Vanderbilt University
Most importantly:

RCM decision-making incentivizes higher quality programs, innovation, flexibility, efficiency, and equitable resource allocation...

...as measured through mission-driven metrics

e.g., completion rates, degrees awarded, time to degree, faculty and student productivity, student placements, etc.
- Strategically realigned and expanded IT capacity
- Shape rapidly shifting internal requirements and external technology environments
• Redirected capital expenditures (CE)
• On track to reduce CE by 50% ($4.9M down from $9.6M)
• 14 cloud projects in progress, including Amazon web services
• Improved workforce productivity
• Strengthen data center security and reliability
LEVERAGE FUNDRAISING CAPACITY
Launched Arizona NOW campaign
Numerous major gifts received

Agnese Haury

$50M+ gift

EstABLishes professorships, fellowships, internships, conferences, and more across disciplines
Fred Fox

$20M gift

- Creates Fred Fox School of Music
- Establishes 3 endowed chairs
- Creates endowed scholarship fund
Richard F. Caris

$20M gift

- Supports UA’s participation in Giant Magellan Telescope
- Ensures access to valuable observing time for UA astronomers
Athletics

$44M in gifts (2014)

- Top 4 in nation for Athletics gifts

- **NEW**: Douglas Allred
  $1 million matching challenge gift
Drs. Ram & Meera Krishna

New Announcement

- Cancer Center support
- Honors Mandira Jalajakshi
STRATEGIC BUSINESS AND FINANCE PLAN
Mr. Gregg Goldman
• Revenues exceed expenditures
• Adds to year-end fund balances
• Stays within mandated debt ratios
• Increases days cash on hand
• Includes improved administrative efficiencies and cost reductions
• Assumes reallocation of resources to invest in strategic initiatives
• Meets or exceeds ABOR business metrics
REVENUES EXCEED EXPENDITURES

FY14 Actual: $1,832
FY15 Estimated: $1,853
FY16 Projected: $2,019

Total Revenues
Total Expenses
ADDS TO YEAR-END FUND BALANCES

FY14 Actual: + $79
FY15 Estimated: + $47
FY16 Projected: + $90
STAYS WITHIN MANDATED DEBT RATIOS

<table>
<thead>
<tr>
<th></th>
<th>FY13 Actual</th>
<th>FY14 Actual</th>
<th>FY15 Projected</th>
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<tbody>
<tr>
<td>Annual Debt Service</td>
<td>$89.2</td>
<td>$88.7</td>
<td>$108.3</td>
</tr>
<tr>
<td>Remaining Borrowing Capacity</td>
<td>$704.1</td>
<td>$843.7</td>
<td>$836.3</td>
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</tbody>
</table>

8% debt ratio limit

- Remaining Capacity: 2.71%, 2.90%, 2.72%
- Debt Service: 5.29%, 5.10%, 5.28%
INCREASES DAYS CASH ON HAND

<table>
<thead>
<tr>
<th></th>
<th>FY12 Actual</th>
<th>FY13 Actual</th>
<th>FY14 Actual</th>
<th>FY15 Estimated</th>
<th>FY16 Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
<td>81</td>
<td>97</td>
<td>105</td>
<td>106</td>
<td>115</td>
</tr>
</tbody>
</table>
$5M in Annual Savings

- Energy and facilities
  - Raised chilled water one degree
- Steam line wrapping and insulation
- Reduced temporary and overtime maintenance labor
- Renegotiated utilities contract

$17.5M savings by refinancing debt

$20M in permanent budget reductions since 2008

- Permanent operating budget reductions
- Procurement card, credit card service fee, and e-procurement changes
- Utility and energy savings
- Consolidation of administrative functions and reduced personnel through attrition
Sustainable Buildings – Most LEED Platinum in Arizona

Solar Energy Leadership – #1 in the country

Energy Cost Savings – millions in savings

UA technology used to fortify utility tunnels
FY15 strategic investments made possible by energy and facility efficiencies

- $2M for cluster hires
- $1.4M for start-up programming for new online programs
- $750K for student recruitment and retention
- $700K for 100% engagement
Expenses per degree: Arizona is more efficient than peers
• Ongoing **investment** by the state in operating and capital support

• Growth in both traditional and non-traditional **enrollments**

• Growth in **extramural research funding**

• Growth in **private giving**, including a major capital campaign

• Additional **research facilities and infrastructure**
GROWTH IN BOTH TRADITIONAL AND NON-TRADITIONAL ENROLLMENTS

<table>
<thead>
<tr>
<th></th>
<th>FY14</th>
<th>FY15</th>
<th>FY16 Projected</th>
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<tbody>
<tr>
<td>Undergraduate &amp; Graduate Students</td>
<td>26,562</td>
<td>26,848</td>
<td>27,470</td>
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<tr>
<td>Online</td>
<td>2,657</td>
<td>3,481</td>
<td>4,243</td>
</tr>
<tr>
<td>Non-Residents</td>
<td>14,059</td>
<td>15,388</td>
<td>16,230</td>
</tr>
<tr>
<td>Residents</td>
<td>26,562</td>
<td>26,848</td>
<td>27,470</td>
</tr>
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GROWTH IN PRIVATE GIVING, INCLUDING A MAJOR CAPITAL CAMPAIGN

![Bar Chart]

- FY14 Actual: $186
- FY15 Estimated: $192
- FY16 Projected: $198

Chart showing growth in private giving with projections increasing over time.
<table>
<thead>
<tr>
<th>Estimated Gross Square Feet</th>
<th>Floors</th>
<th>Project Cost in Millions</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>245,000</td>
<td>10</td>
<td>$166</td>
<td>Supports the growth and development for research enterprise</td>
</tr>
<tr>
<td>Project:</td>
<td></td>
<td></td>
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<tr>
<td>Biosciences Partnership Building, Phoenix Biomedical Campus</td>
<td></td>
<td></td>
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<tr>
<td>124,200</td>
<td>3</td>
<td>$101</td>
<td>Multi-disciplinary laboratory imaging facilities</td>
</tr>
<tr>
<td>Project:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Bioscience Research Laboratories</td>
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</table>
THANK YOU