Motivation

1. Changing times.
2. Budget reality: rescission and effect of prior commitments
3. Unpredictability and volatility. Uncertainty that we cannot control and predict but we want our fates in our hands. Consistency of action based in empiricism.
UN Projections of World Population Under Three Fertility Assumptions

- High: Red line
- Medium: Blue line
- Low: Green line

- 1950: 2 billion
- 2025: 8 billion
- 2050: 10.1 billion
- 2100: 15.8 billion

Fertility assumption:
- High
- Medium
- Low
World Population & Arable Land, 1960–2020

- Green bars represent world population (LHS).
- Yellow line represents arable land & land in permanent crops (RHS).

Source: GS&PA Research, FAO
10-Year Average Annual Growth in Crop Yields

Source: Food and Agriculture Organization of the United Nations  As of 12/31/09

College of Agriculture and Life Sciences – Office of the Dean.
The University of Arizona, Tucson, Arizona
Crude Oil Averages Over $100 Barrel in 2011

2011 is the first year that crude oil prices averaged over $100 a barrel (Brent pricing; BP’s Statistical Review). Highest average price in 147 years.
“A dialog on Food and Agriculture in the 21st Century”

TNC’s vision for 2050

How do we double food production while still protecting the lands and waters on which all life depends?

Sustainable Agricultural Intensification

Constrained Agricultural Expansion
“Arizona’s bioscience segment is now realizing more than $12.5 billion in annual revenue with more than 90,000 jobs. In fact, while Arizona suffered significant job losses during the recession, the biosciences added jobs.”

Robert Green, Phoenix Business Journal
Economic Impact studies

TGen's economic impact pegged at $138 million

The Translational Genomics Research Institute provides Arizona with a total annual economic impact of $137.7 million, according to an independent economic analysis released today.

The new report finds that TGen operations in 2010 produced $14.40 for every $1 invested by the state. The nonprofit research group also supported 737 full-time jobs directly and indirectly, generated $4.8 million in state tax revenue and produced a direct annual economic impact of $79.2 million.

“This report underscores the ongoing economic, employment and tax generation power of TGen on the Arizona economy,” said Paul Umbach, president of Pittsburgh-based Tripp Umbach, a national leader in economic forecasting. “Again this year TGen’s annual economic impact exceeds earlier expectations as TGen quickly becomes one of the nation’s more successful economic engines in the biomedical sector.”

The report shows that TGen is helping grow the state’s knowledge-based economy — attracting out-of-state research investments, intellectual collaborations and world-class researchers — all while making significant strides in scientific research and providing life-changing results for patients.

By 2015, Tripp Umbach predicts, TGen operations will return $25.62 for every $1 invested by Arizona, result in 1,865 jobs, generate $11.5 million in state tax revenues, and produce an annual economic impact of $140.9 million.
Two businesses in Phoenix, two cities in the Valley, and two universities in Arizona are no longer merely competing with each other; they are competing with others around the globe. What one can amass acting alone is no longer adequate on the world stage. The winners in this new world order are those who join forces to meet the challenge.

ASU President Michael Crow has transformed the university by taking what once were rigid departments and rebuilding them as collaborative, interdisciplinary units.

Robert Green, Phoenix Business Journal
Arizona Sun Corridor: Open for Business

Looking to expand?
Optimize and leverage your business opportunities in one of 10 U.S. markets expected to see most of the nation’s growth in the next 35 years.

The Arizona Sun Corridor, comprised of the greater Flagstaff, Phoenix, Pinal County, Tucson and Yuma regions, offers your business:

- A geographic proximity to major markets and suppliers
- A favorable tax climate
- A uniquely distinctive quality of life
- An affordable cost structure to accelerate company profits

Learn how Arizona Compares to Other Western States
Click on any of these western states to see how it compares to Arizona

- Mean Wage
- Workers Compensation Rates
- Unemployment Insurance
- Unionization Rate
- Right to Work State Status
- Median Home Prices
- Electricity Rates
- Individual Income Tax
- Corporate Tax Rate
- State Sales Tax

Industry Strengths in the Corridor

- Aerospace, Homeland Security and Defense
- Bioscience
- Information Technology
- Renewable Energy
- Transportation & Logistics/Company Headquarters
What do we do?

- Produce “new” people
- Produce new knowledge
Operational Metrics
T/C track faculty and other Appointed Professionals

% of employees with some proportion of "soft" money in salary line
**Miscellaneous Accounts** (summer session, IDC, sales & service, conference fees, other fees, fixed price complete but EXCLUDES MONEY IN UA FOUNDATION ACCOUNTS)

**On-campus Departments**

**Experiment Station Units**

**Counties**
1/07/2012 Projections for college-level permanent salary dollars changes

<table>
<thead>
<tr>
<th></th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1 permanent funding carryover</td>
<td>2,100,000</td>
<td>310,241</td>
<td>-215,415</td>
<td>-762,980</td>
</tr>
<tr>
<td>Positions vacated in FY(^1)</td>
<td>764,000</td>
<td>400,000</td>
<td>800,000</td>
<td>800,000</td>
</tr>
<tr>
<td>Positions filled in FY, per hiring current plan(^2)</td>
<td>-1,648,759</td>
<td>-800,000 **</td>
<td>-941,533 A</td>
<td>-941,533</td>
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<tr>
<td>Previous hires needing perm in FY</td>
<td>-55,000</td>
<td>-125,656</td>
<td>-406,302 B</td>
<td>-310,700</td>
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<tr>
<td>FYxx budget cut from college funds</td>
<td>-850,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>310,241</td>
<td>-215,415</td>
<td>-762,980</td>
<td>-1,215,213</td>
</tr>
</tbody>
</table>

\(^1\) Assumes historical trend

\(^2\) Assumes no new hires

* = expected credit to the departments towards budget cut
** this is a historically small number

A. people starting July/August 2013
B. Excludes any new hires that may be requested
## 1/7/2012 CALS temporary/operating funds

<table>
<thead>
<tr>
<th></th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>College-level all-funds*</td>
<td>5,545,586</td>
<td>4,654,656</td>
<td>4,600,000</td>
<td>4,925,000 ***</td>
</tr>
<tr>
<td>College-level commitments**</td>
<td>-5,412,477</td>
<td>-7,030,557</td>
<td>-5,141,533</td>
<td>-5,655,686</td>
</tr>
<tr>
<td>Balance available</td>
<td>133,109</td>
<td>-2,375,901</td>
<td>-541,533</td>
<td>-730,686</td>
</tr>
</tbody>
</table>

* college-level temp state, idc return, sales & service, endowment, foundation, and misc funds

** includes temp commitment list, hiring plan items, retentions, GRA/GTA allocations, new faculty startup

*** assumes most optimistic IDC return
• Increase revenue.
• Increase efficiency, effectiveness and innovation (invention + exploitation)
• Increase tech transfer.
• Be better at articulating our economic impact.
• Include career development in academic programs.
• More strategic in our development activities.
• More engaged with our base.
• More Agriculture and More Life Science.
• More commerce more technology.
Strategic plans

Choice, not chance, determines our destiny. *Steve Siebold*

In preparing for battle I have always found that plans are useless, but planning is indispensable. *Dwight D. Eisenhower*

Strategic planning is not strategic thinking. Indeed, strategic planning often spoils strategic thinking, causing managers to confuse real vision with the manipulation of numbers. *Henry Mintzberg*
Not primarily about responding to a new budget reality.

We need to identify what is important and so where we want to go and then how we will get there within our budget.

No about filling in banks on a preformatted document.

Broad involvement from faculty, staff, students, alumni, and all of our other stakeholders.

Build on the work that has already been done.

Evolves so we can adapt to changing circumstances.

Serve to guide our decision-making, priority setting, and emphasis.

Some initiatives will be implemented quickly, while others will take several years to accomplish.

Annual review (as the world changes and additional strategic questions, opportunities and challenges occur). Some years will require more review than others.

Shared commitment, new ideas, new plans, resource redistribution, and new ways of doing things.

Everyone has a role and this plan is only as good as we are.

Each department (and units within) will create a plan specific for themselves.

These are working documents — tools to help us get where we want to be.
1. Quantify where we are now,
2. Identify where we need to be in 2021,
3. Define what specific steps we need to take to get where we need to go in the context of our budget.

10 years.

*Trying to predict the future is like trying to drive down a country road at night with no lights while looking out the back window.* Peter F. Drucker
Why Benchmark?

Provides measurable assessments for comparison with national peers over time and between units.
Even if we have a vision of what we want to build and agree that it is perfect, we often need to go through some ugly stages to get there.
We want calculable risk; we are stuck with random uncertainty.  Niall Ferguson

Too many years of pie division turn off the pie-expanding gene.  Jon C Strauss and John R Curry
engaged, entrepreneurial, innovative, trusted, regionally responsive and internationally relevant
Existing Resources

ARIZONA’S WORLD-CLASS UNIVERSITY: THE TRANSFORMATION AHEAD

The time has come to take bold action... President Robert Shelton, September 2008

It’s no longer a luxury to think about transformation... it’s a necessity. Professor Wanda Howell, Chair of the Faculty, September 2008
Our Signature Focus – Sustainable Integrated Systems

- Arid and Semi-Arid Region Agriculture and Environment
- Individuals, Families, Communities, and Organizations
- Globally Oriented Basic and Applied Research.

1. Environment, Water, Land, Energy, and Natural Resources
2. Plant, Insect, and Microbe Systems
3. Human Nutrition, Health and Food Safety
4. Animal Systems
5. Children, Youth, Families, and Community
6. Consumers, Marketplace, Trade, and Economics
<table>
<thead>
<tr>
<th>Type of Scholarship</th>
<th>Purpose</th>
<th>Measures of Performance</th>
</tr>
</thead>
</table>
| Discovery           | Build new knowledge through traditional research. | • Publishing in peer-reviewed forums  
• Producing and/or performing creative work within established field  
• Creating infrastructure for future studies |
| Integration         | Interpret the use of knowledge across disciplines. | • Preparing a comprehensive literature review  
• Writing a textbook for use in multiple disciplines  
• Collaborating with colleagues to design and deliver a core course |
| Application         | Aid society and professions in addressing problems. | • Serving industry or government as an external consultant  
• Assuming leadership roles in professional organizations  
• Advising student leaders, thereby fostering their professional growth |
| Teaching            | Study teaching models and practices to achieve optimal learning. | • Advancing learning theory through classroom research  
• Developing and testing instructional materials  
• Mentoring graduate students  
• Designing and implementing a program-level assessment system |
New Structures 1

Administrative Cabinet: Executive Council plus: Head HOD; Director of Development and Alumni affairs; Director of International Programs; Director Educational Communications and Technologies (ECAT); U. Arizona Defense and Homeland Security Institute Director/Assoc. Director; others as appropriate. AIM: Improve communication and co-ordination.

Meet Monday 1-2 with aspiration of two meetings/month.
New Structures 2

Executive Council

• Associate Dean for Administrative Services
• Bartley P. Cardon Associate Dean for Academic Programs & Career Development
• Associate Dean for Research and Director of the Arizona Agricultural Experiment Stations
• Associate Dean and Director, Arizona Cooperative Extension
• Associate Dean for Strategic Initiatives
The Arizona Higher Education Enterprise

Summary: University of Arizona, 2010 to 2020

CALS is to **double research** by 2020 on existing resource base.

The Arizona Higher Education Enterprise
New Structures 3

Dean’s Research Advisory Committee

- Rod Wing and Stephen Russell appointed chairs.
- Mark Riley, HOD representative.
- Assoc. Dean for Research ex-officio.
- Others to be appointed by the original four members to represent the diverse range of work done in CALS.

AIM: Identify how CALS will DOUBLE RESEARCH AND SCHOLARSHIP BY 2020 IN REAL TERMS (see Arizona Higher Education Enterprise: 2010 Strategic Realignment).

Meeting times TBD by DRAC but likely frequent in first few months.
New Structures 4

Faculty Consultative Group on CALS Effectiveness, Efficiency and Innovation. Jan 10 – May 15.

Co-Chairs: Drs. Joel Cuello and Wanda Howell

Membership: CALS Faculty Council (those with administrative appointments excused if they prefer). Other members TBD by the initial members, to be representative of our diversity in all aspects. No administrators except for those already on the CALS Faculty council and Associate Dean Sandy Pottinger, who will serve as a voting ex-officio member as a resource to those working on the non-academic functions.

Charge: To identify how we could change our operations to be even better in state-funded academic and non-academic functions, by seeking out, evaluating and providing creative ideas focused on:
• Effectiveness – enhancements to better meet our three-fold mission of teaching, research and extension.
• Efficiency – enhancements to better organize, manage and utilize our resources and to cost less than our current systems.
• Innovation – truly new ways to do things compared to our past (invention + exploitation).

Resources: Open access to all information/people needed except for personal (or otherwise legally secure) data and spirit of co-operation within the college.

Guiding Principles.
• Includes any aspects funded by our State Permanent Budget only (i.e. state money that supports academic programs and support services, where revenues are derived mainly from state appropriations and student tuition and fees).
• Could include restructuring, programmatic changes.
• Can use resources that may have been created in the past (e.g., during the “transformation” process).
• Is not to include additional costs; must work inside our existing budget and the costs for changes must come from savings in other areas.
• This is not a vendetta process.
• There is not to be a culture of quid pro quo.
• Expect the consultative group to get broad input.
• Service is voluntary.
• Focus on protecting people
• Regular updates will be provided to the Dean with the final report by May 15, 2012.
Phase 1.

A. Discussion within Cabinet will identify key benchmarks and metrics for measuring our progress and measuring ourselves against i. our peers at the college level; ii. comparing units within the college. Identify college goals.

B. Associate Deans for AP, Res and CES will identify key metrics for measuring progress towards goals set by ourselves, the university and our stakeholders for each of their specific areas and will build strategic plans.

C. Faculty Consultative Group on CALS Effectiveness, Efficiency and Innovation begins.

D. Dean’s Research Advisory Committee begins.

E. Units and subunits review where they believe that they need to be going in the light of their own administrative units and others in CALS and on campus.
Signature Focus Areas
“Sustainable Integrated Systems”

- Arid and Semi-Arid Region Agriculture and Environment
- Individuals, Families, Communities, and Organizations
- Globally Oriented Basic and Applied Research.

1. Environment, Water, Land, Energy, and Natural Resources
2. Plant, Insect, and Microbe Systems
3. Human Nutrition, Health and Food Safety
4. Animal Systems
5. Children, Youth, Families, and Community
6. Consumers, Marketplace, Trade, and Economics
What about the rest of the University?
If you’re not at the table, you’re on the menu.
I. Produce the most employable graduates, who can not only be most competitive for existing job opportunities but who can do jobs that don’t yet exist and also create new jobs.

II. Have the most engaged alumni, supporters and legislative support.

III. Be the most valuable to the state’s economy.

IV. Be the most cyber-savy.

V. Be primary drivers of AZ’s bioeconomy.

VI. Be regionally responsive and internationally relevant.

VII. Have a brand consistent with 21st century commerce.

Provost’s DRAFT cross-cutting programmatic “big themes” emerging from UA colleges.

- **Computational biology/bioinformatics.** Potential college collaborators – Pharmacy, CALS, Science, Public Health, Medicine, Nursing, Eller

- **Sustainability.** Potential college collaborators – CALS, Science, Engineering, CALA, Law, SBS


- **Global Studies.** Potential college collaborators – Humanities, SBS, Science, Eller, Public Health, Fine Arts, CALS.

Steps.

A. **Diagnose problems.**
   1. What do we think we know, what are we told?
   2. What can we measure, what is the error in this measure?
   3. What are the critical elements specifically defining the problem?

Once a dx is made then it allows classification and comparison with how similar situations were handled in the past.
Identify hypotheses based on precedents and data.

B. **Define the guiding policy for dealing with the critical elements.**
   1. Not just what we are doing, but why and how.
   2. Identify and draw on resources of advantage.

C. **Coherent actions to carry out the policy.**
   1. Will include prioritizing and choosing between options.
   2. Co-ordination of actions imposed on a system.

Focus energy on few pivotal objectives.
1. Honestly acknowledge and quantify challenges and provide a cohesive response/approach to overcoming these.
2. Define the critical challenge specifically (e.g. benchmarking, who are our competitors, we need to compete outwards not internally).
3. Specific strategic objectives/sub-goals that have a good chance of being accomplished given existing resources and competences. Intersection between what should be done and what can be done.
4. Specific and measurable actions.
5. Necessity of choice. Do not use committee structure to avoid the pain or difficulty of choice.
Helpful concepts.

• Dominance in specific market segment.
• Areas of current positional advantage (by geography and/or past and present investment).
• Deliver clear benefit to recognizable groups.
• Concentrate on a few of the most critical issues first, and then move on.
• Focus effort and resources where they will make the largest, most decisive and most visible impact first.
• Consistently try to improve overall position (once you can define what this means).
• Focus on the limiting factors that can actually be fixed.
• Think about the combinatorial effects (everything is connected to everything else somehow).
• Press on our existing advantages, side-step areas where we don’t have advantages, exploit others’ weaknesses. Then ADVERTISE.
• Improvements can come from examining how we do things.
• Strategy is most valuable during times of industry transition.
• Planning and planting is always more interesting than weeding: entropy in action.
• Continually question your judgments, also record your judgments and compare to reality.
Guiding Principles

• Creative and not reactive. Our budget must serve our plan and not the other way around. Prepare and plan for the worst conditions and then strike out hard when conditions are favorable.
• Preserve our raison d’etre.
• What are we best at in the world?
• What do we have unfair advantages (privileged information) in and so we can be best at those too?
• What do we do just because we’ve always done it or just because “that is what Ag schools do”?
• What are we passionate about?
• What can we afford to do, where are the enabling resources?
• Take advantage of our collective expertise and ensure we can state simply and clearly what we are doing and where we are going.
• Evidence-based, empirical.
• We need to have big goals, but these big goals must be grounded in all the points above.
• Take advantage of technology (but NOT FADS) as tools to enable what we do.
• Where can we be “tech pioneers”?
• Although we will have some “home runs” we all need to focus on the making the “singles” every single day.
• We must evaluate realistically and quantitatively.
• Must have minimum performance limits.
• Must be designed internally and not imposed on us.
• Must include and maintain “freedom to ‘experiment’”.
• Concrete Specific Objectives with Time Table for their realization and outline of how we will achieve these.
• Assignment of responsibility
• Budget based on empirical data.
• Aim for consistent incremental progress.
• Durability: want to do amendments based on changing circumstances not wholesale changes.
• Must be able to turn down “great opportunities” if they don’t align with what we need.
• Delegate decision making authority and responsibility to those actually able to implement them.