LET'S TALK RESEARCH
APRIL 22, 2014

Hank Foley
Executive Vice President for Academic Affairs, Research and Economic Development -- University of Missouri System
Senior Vice Chancellor for Research and Graduate Studies – University of Missouri
Key question(s)

Who is creating the wealth to drive economic growth that will pay for public sector jobs and government programs and that will meet the expectations of the next generations?

Where will innovation come from today?
Where are the innovators and entrepreneurs?
What is our role?
How can we help?
Innovation Gap/Deficit
Innovation Deficit

U.S. Innovation Deficit
Projected Federal R&D Investment:
Sequestration, Budget Control Act Caps, and Two Other Benchmarks

*excludes American Recovery and Reinvestment Act funding

Innovation deficit noun [i-nə-ˈvā-shən \ˈde-fə-sət]
1. The widening gap between the actual level of federal government funding for research and higher education and what the investment needs to be if the United States is to remain the world's innovation leader.

http://www.innovationdeficit.org/
The Times They Are a Changing

“ It is essential to document with solid evidence the returns our Nation is obtaining from its investment in research and development. STAR METRICS is an important element of doing just that.”

- John P. Holdren
  Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy
  June 1, 2010.

Which is to say universities will now be expected to provide the seed corn, the innovations and inventions for the future…

“Universities as Engines of Innovation”
Universities as engines of innovation?
University of Missouri System Research
Expenditures per Annum

NSF Research & Development Expenditures
FY 2000 - 2013

COLUMBIA  KANSAS CITY  MO S&T  ST. LOUIS  TOTAL
Community-University-Innovation: Communivation

The “rubber meets the road” in the real economy

Universities cannot do this alone
Communivation requires NEW Partnerships:

University
- Research
- Technical Expertise
- Entrepreneurial Ideas
- New entrepreneurs

Community
- Capital
- Services
- Management
- Mentors
- Seasoned Entrepreneurs

Federal and State Agencies
- Funding
- Expectations

Communivation resides at the intersection of the university, the community, and federal and state support.
Communivation Scales

Global
National
Region
State
Municipality
University

Local Foundations are KEY
VISION
By 2025 UM System and the Missouri Research Quadrangle will be a national and international hot bed of innovation driven by high technology startup companies.
• agricultural biotechnology
• nuclear medicine
• information technology,
• additive manufacturing,
• advanced materials sciences
born from University of Missouri research via a regional push for innovation and tech-based economic development.
Strategy for Research

Strategy Statement
MU and the University of Missouri System will be the “best in class” at the translation of research to products and services that better human health and well being
Strategy for Research: Themes

1. Work together for synergy across Missouri

2. Grow our own Entrepreneurs/Innovators

3. Be shrewd and smart with IP

4. Re-engineer the culture to unleash the power of the willing (faculty, students, …)

5. Don’t be jealous—consult and borrow from the successful
Theme 1: Work together for synergy across Missouri

Missouri Research Quadrangle “MRQ”
UM System Statewide Reach Must be Aligned
Theme 2: Grow our own Entrepreneurs/Innovators

• Build a community of entrepreneurs
  • Formal and informal education
    • Faculty members, post-docs, graduate students and undergraduates
    • Undergraduate minors, on-line tutorials, in person boot camps etc.
  • Keep a few of the willing here every year to pursue their business vision in the MRQ
    • Guide them through the ecosystem for NUCOs
      • Make it easy to start, OK to fail, even easier to try again
  • Align the elements of the entrepreneurial ecosystem
    • Bring public, private and university resources together
State of Entrepreneurship

The State Entrepreneurship Index tracks core trends and reflects states’ entrepreneurship environments, growth in business formation and technological innovation. Each state index is calculated by comparing five key economic components and determining how much their performance deviate above or below the “median state,” which is assigned a value of 1.0.

The SEI was built with 2011 data from the Bureau of Labor Statistics, the IRS Statistics of Income Bulletin, the U.S. Census Bureau and the U.S. Statistical Abstract.

Top 5

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Bottom 5

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<td>Louisiana</td>
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Source: University of Nebraska-Lincoln Bureau of Business Research

Graphic by Troy Fedderson | UNL University Communications

Biggest movers

Utah
Rose 21 spots to No. 23 (SEI of 1.07).
Ranked No. 44 in 2010.

Louisiana
Fell 45 spots to No. 50 (SEI of .03).
Ranked No. 5 in 2010.
Entrepreneurship Requires an Ecosystem

- **Leadership**
  - Unequivocal support
  - Social legitimacy
  - Advocacy
  - Entrepreneurship strategy
  - Priority, urgency

- **Government & Education**
  - Institutions e.g. investment, support
  - Financial support e.g. for R&D, jump start funds
  - Policy/regulatory incentive framework
  - Entrepreneurship education & training
  - Research institutes
  - Venture-friendly legislation e.g. Bankruptcy, contract enforcement, property rights, and labor

- **Capital**
  - Micro-loans
  - Angel investors, friends and family
  - Zero-stage venture capital
  - Venture capital funds
  - Private equity
  - Public capital markets
  - Debt

- **Societal Norms**
  - Tolerance of risk, mistakes, failure
  - Innovation, creativity, experimentation
  - Social status of entrepreneur
  - Wealth creation
  - Ambition, drive, hunger

- **Success Stories**
  - Visible successes - promotion
  - Wealth generation for founders
  - Reputation

- **Support**
  - Non-Govt Institutions
    - Entrepreneurship promotion in non-profits
    - Business plan contests
    - Conferences
    - Entrepreneur-friendly associations

- **Culture**
  - Entrepreneurship
  - Talent
  - Market
  - Policy
  - Capital
  - Support

- **Infrastructure**
  - Telecommunications
  - Transportation & logistics
  - Energy
  - Zones, incubators, co-working, clusters

- **Talent**
  - Management, technical, etc.
  - Serial entrepreneurs
  - Middle & high school
  - Post-secondary
  - Specific entrepreneurship training

- **Networks**
  - Entrepreneur’s networks
  - Professional associations
  - Trade associations
  - Sector associations

- **Early Customers**
  - Early adopters of proof-of-concept
  - Expertise in productizing
  - Reference customer
  - Thought leader reviews
  - Distribution channels
ENTREPRENEURS! GOING TO #BOOM THIS FRIDAY?!

If you are not here, the Missouri side of central Missouri's home art for entrepreneurship -- @MOBOOM (www.csigma.com) -- is the right place. More information is available at our website, where entrepreneurs can network, meet other entrepreneurs, and join the community of successful entrepreneurs. We look forward to seeing you there. Check this one out, it's going to be a great event!
Theme 3: Be Smart with IP

- Loosen IP ownership policies to bring more direct industry investment in UM Research
  - “You attract more bees with honey than vinegar”
  - Buzz in the market place
  - Let industry own IP from industry-sponsored research (No, it is not a loss, it’s a gain!)

- Empower faculty to decide on IP ownership on industry-funded research
  - Bring Faculty and Students closer to practitioners
    - Employment pipelines
    - Relevance in the classroom
    - “Create more adjacency of theory and practice”

- Aggressively drive IP (from Federal research) to market through licenses to established Co.s and NUCO.s
  - University shall take more equity stakes in new ventures
Theme 4: Re-engineer the culture to unleash the power of the willing (faculty, students...)

• University culture must be diverse enough to broaden the definitions of success
  • Synthetic Thinking as well as Analytical Thinking

• Value invention, innovation, entrepreneurship
  • Creative works other than archival journal articles, high end conference proceedings, grants and contracts
    • Arts and Architecture already do this and “always” have. Why not engineering, business, applied sciences, etc?
    • Explore broadened and diversified tenure and promotion criteria?
Theme 5: Don’t be Jealous – Consult and Borrow from the Successful

Giving young ventures an entrepreneurial edge

About VMS

History
About
VMS Staff

http://web.mit.edu/vms/about_vms.html
Vision

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- agricultural biotechnology
- nuclear medicine
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- additive manufacturing,
- advanced materials sciences

born from University of Missouri research via a regional push for innovation and tech-based economic development.
Undergraduate Research & Creative Achievements Forum

A showcase of the academic and creative work of more than 300 MU undergraduate researchers across all disciplines

Tuesday, April 22

1:30-3:00 p.m. — Poster Session A, Bond LSC
2:30-4:00 p.m. — Poster Session B, Bond LSC
3:30-5:00 p.m. — Poster Session C, Bond LSC