

# Public-Private Sector Collaboration

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# Conflict of Interest

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Professor, Inventor, Founder, Director

# Complacency

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- “We shall have no better conditions in the future if we are satisfied with all those which we have at present.” Thomas Edison

# Fundamental knowledge. A case for Public-Private Collaboration

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Just add:

- Heat
- water

# Public/Private Sector Collaboration

- To grow an economy
  - Secure technological innovation
  - Investment
  - Educated workforce
  - Translators

Strengths, weakness, and what we can do better.

# Secured Technological innovation

- Our strengths
  - Prior to 1980, 28,000 government-funded US issued patents gathering dust.
  - Bayh-Dole Act 1980
    - 30% of NASDAC listed “owe their value to the results of government sponsored research and development.”
      - Alfred Berkeley III (NASDAC Chair) communication with E. J. Soderstrom ( quoted, Yale University)

## 2004 AUTM survey

[www.autm.org/events/file/fy04%20Licensing%20S](http://www.autm.org/events/file/fy04%20Licensing%20S)

- US Patents issued to universities
  - 250 in 1980
  - 3,800 in 2004
- Companies developed
  - 4,543 since 1980, 75% still exist
- Drugs from university research
  - 0 prior to 1980, 300 since
- Products from university research
  - 3,100 since 1998, 567 in 2004

## Secured Technological innovation

- Our strengths
  - Bayh-Dole Act. 30% of NASDAC value
- **Our weaknesses**
  - **Greatest minds have only added 30%**
  - **Where is Ag?**

## UC top inventions 04 (\$mill/yr)

- Hepatitis vacc (19)
- Aneurysms trt (7.9)
- Energy primer (3.5)
- Cystitis (3.4)
- **Strawberry (3.2)**
- Skin Cooling (3)
- Implant coils (2.9)
- Luciferase (2.7)
- Liposome size (1.6)
- Radiographic (1.6)

## Secured Technological innovation

- Our strengths
  - Bayh-Dole Act. 30% of NASDAC value
- Our weaknesses
  - Greatest minds have only added 30%
  - Where is Ag?
- **We can do better**
  - **Resources to create knowledge**
  - **Knowledge creates innovation worth protecting**

## Investment

- Our strengths
  - Angels, Venture, Retirement, SBIR/STTR
- Our weaknesses
  - Money flows globally landing with technology
  - No knowledge, no technology, no capture

## UW System Trust fund holdings

- African Bank Investments LTD
- Airports of Thailand PCL
- Petroleo Brasileiro SA
- Bristol Myers Squibb CO Com
- Yahoo Inc

## Investment

- Our strengths
  - Angels, Venture, Retirement, SBIR/STTR
- Our weaknesses
  - Money flows globally landing with technology
  - No knowledge, no technology, no capture
- **What we can do better**
  - **Fund knowledge, if secured, investment will follow**

## Wageningen Business Generator www.wbg.wur.nl

- “Every day new concepts are born in an atmosphere of creative science and inventive technology. We believe these ideas and discoveries should not be restricted to the readers of academic journals, as they could generate tremendous economic potential and be beneficial to both people and planet”

## Educated work force

- Strengths
  - Accessible and affordable undergraduate education. Extensive continuing education.

## CALS-UW

- Professional Confectioners (Rick Hartel)
- Cheese maker workshop (Bill Wendorf)
- Storm water management (Shawn Kelly)
- Diseases of landscape plants (Glen Stanosz)
- Dairy Business (Rick DaLuge)

## Collegiate entrepreneurial education

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- \$25.5 million in grants to nine U.S. universities that pledged to make entrepreneurship education a campus-wide opportunity, leading a more than \$200 million effort to transform the way entrepreneurship education is taught in the nation's colleges and universities.

## Midwest Poultry Consortium COE

- Over 10 years operation
- 65 Industry sponsors
- Educated over 200 students
- Site faculty/staff declined 50%

## Educated work force

- Strengths
  - Accessible and affordable undergraduate education. Extensive continuing education.
- Weaknesses
  - Erosion of faculty base in agriculture
  - Graduate student cost are out of reach

## Graduate Student Research Fellowships

- Cost of training a graduate student
  - \$300-\$500K
    - 5 years program \$380K/student before research cost
    - NIH 5 years \$250K/student (subsidized)
- Agricultural training grants?
  - Fleet 5yr, \$76K/student
  - Byrne et al 5yr, \$76K/student

## Educated work force

- Strengths
  - Accessible and affordable undergraduate education. Extensive continuing education.
- Weaknesses
  - Erosion of faculty base in agriculture
  - Graduate student cost are out of reach
- What we can do better
  - Fund the pursuit of knowledge and we will scramble to educate pursuers, movers, and users.

## Translators

- Strengths
  - Extension system
- Weaknesses
  - Resources. Words versus technology?
- What we can do better
  - Ext Scientist need translational dollars
    - Wageningen “proof of concept”

## The Biology Edge

- Clark Center @ Stanford
  - BIO-X connecting biology to medicine
- WID/MIT @ UW
  - Public/Private twin institutions for interdisciplinary research and translation
- Whitehead Inst Biomed Res @ MIT
  - “Novel collaborations...high risk research

Is Agriculture there?

## To grow an economy: Knowledge is supreme

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Just add:

- Create knowledge/technology (secure)
  - Investment
- Educated workforce
  - Translators

## Without new knowledge

- There is no technology to secure
- No return on investment
- Education has lost its value
- Translators tell the same story
- Public-Private Sector Collaborations is an illusion