Public/Private Collaborations

and the need for Ag Research funding

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Perspective

- Professor
  - 25 years at UW, hired 1982 by Poultry Sci
- Developer of new technologies
  - 30 US patents, 3 technologies in global sales.
- Business person
  - Founded 3 biotech companies

Changes in 25 years

University’s business.

- To educate
- To innovate
- To translate

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- **To educate**
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Model: Personal experience. Poultry Sci.

Education

- Prior to 1995. Poultry Science Department
  - 3 farms/research facilities
  - Support staff=14
  - Faculty=7, 2 full time extension, 5 faculty

  Today, 2007. Merged with An Sci

  1 research facility

  Support staff=3

  Faculty=3 + .5 extension

Attempts after merger

- Core program @UW made regional
- Midwest Poultry COE
  - 14 states
  - 10 years of operation
  - Educated 200 students
  - Resources declined at UW >50%

So What!

- Nation’s most consumed meat
- Science based leadership in:
  - Animal Welfare
  - Food safety
  - Environmental stewardship
  - Disease threats
  - Use of innovation

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
  - We still have some a functional animal science education system.
- Weaknesses
  - Erosion of faculty base
  - No sustainable system to develop new faculty
- **Solution**
  - **Publicly Fund the pursuit of knowledge.**

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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

- 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

Why is Ag missing?

- USDA funding of research=$250million
  - They pay the least overhead (0 tuition)
  - 12% UW base budget is state dollar
  - Where will UW invest precious state dollars
  - Less than 10% of my research budget is ag
- NIH funding of research=$42000million
  - Hence priority in hiring and programs
  - Transfer of Environmental Tox and Repro Endo

Secured Technological innovation

- Our strengths
  - Bayh-Dole Act. 30% of NASDAC value
- Our weaknesses
  - Greatest minds have only added 30%
  - Where is Ag?
- **Solution: Fund pursuit of knowledge**
  - **Resources attract creative scientist**
  - **Creative scientist develop knowledge**
  - **Knowledge builds innovation**

Changes in 25 years

University’s business.

- To educate
- To innovate
- **To translate**

Translation

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

UW System Trust fund holdings

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

Translation

- Our strengths
  - Angels, Venture, Retirement, SBIR/STTR
- Our weaknesses
  - Money flows globally landing with technology
  - No knowledge, no technology, no capture
  - Redirection of Extension
- **Solution**
  - **Publicly fund the pursuit of Ag based knowledge**

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 your economy Knowledge is supreme

- If there is no investment
  - Faculty will not be hired
  - Students will not be trained
  - Innovations will not be forthcoming
  - Translators will not be needed
  - Nation will lose its status of “bread basket of the world”

Dean Armstrong, MSU

- Farm Bill
- Create 21
- Other proposal, NIFA

Thomas Edison

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