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
Changes in 25 years

University’s business.

To educate
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Education

• Prior to 1995. Poultry Science Department
  – 3 farms/research facilities
  – Support staff=14
  – Faculty=7, 2 full time extension, 5 faculty
  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.
Changes in 25 years

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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

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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.”