

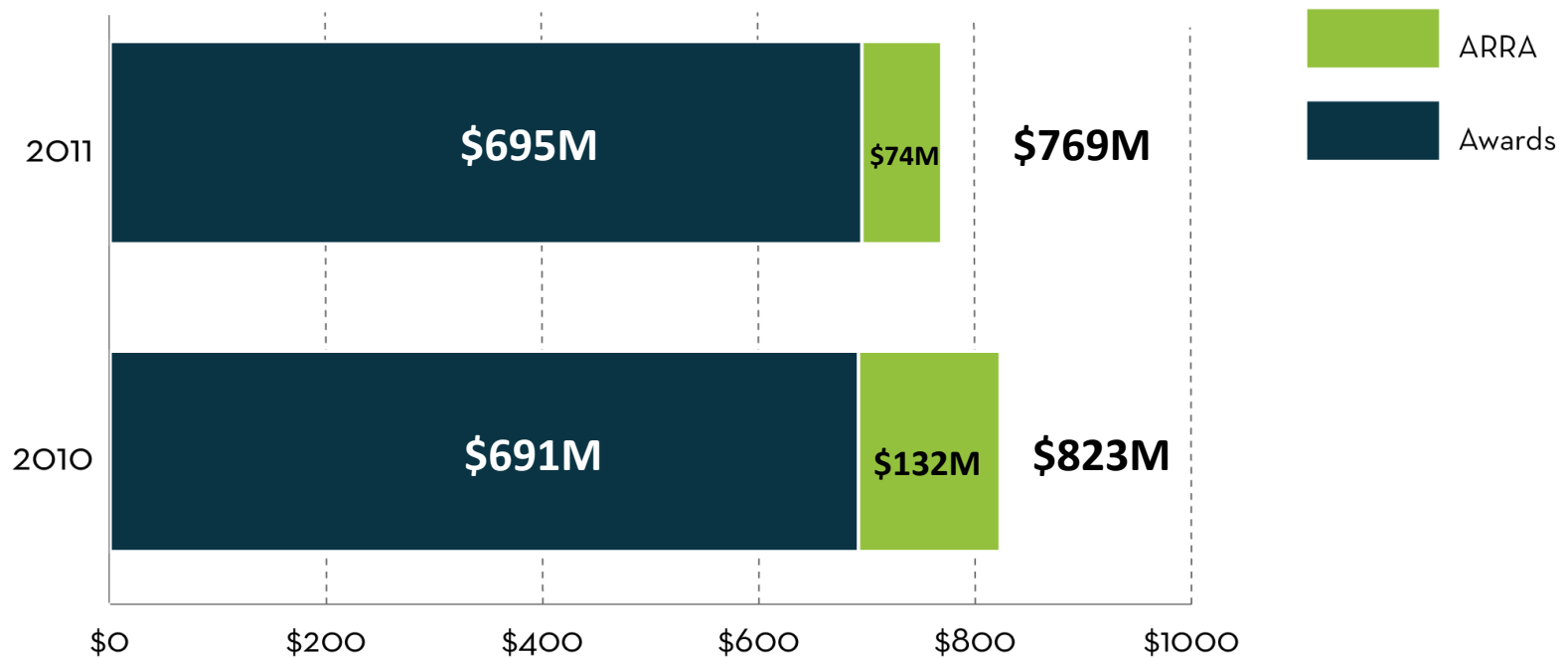


2011
RESEARCH REPORT

*Tim Mulcahy, Vice President for Research
December 9, 2011*

Sponsored Research Awards

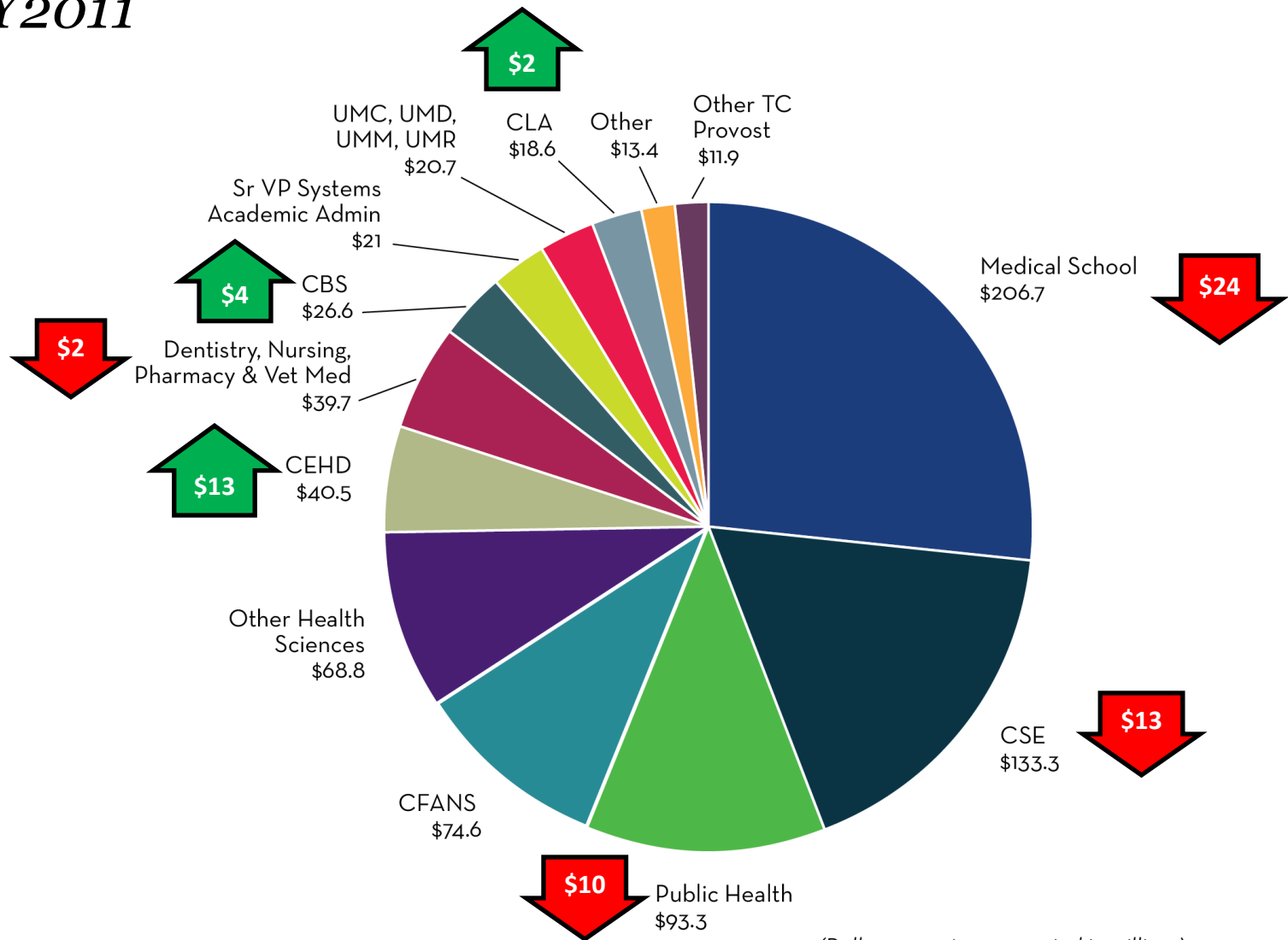
FY2011 vs. FY2010



(Dollar amounts represented in millions)

Awards by College

FY2011



(Dollar amounts represented in millions)

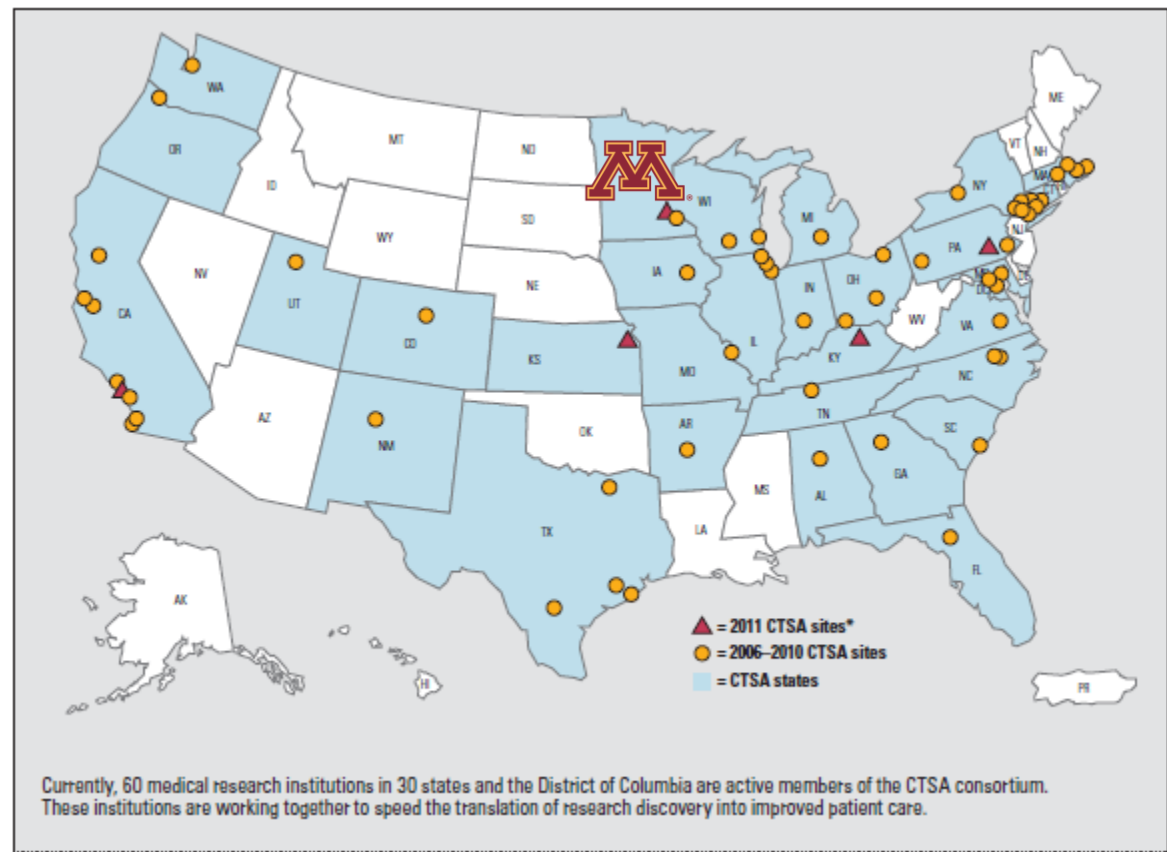
Clinical & Translational Science Awards

CTSA Clinical & Translational[®]
Science Awards

Translating Discoveries to Medical Practice

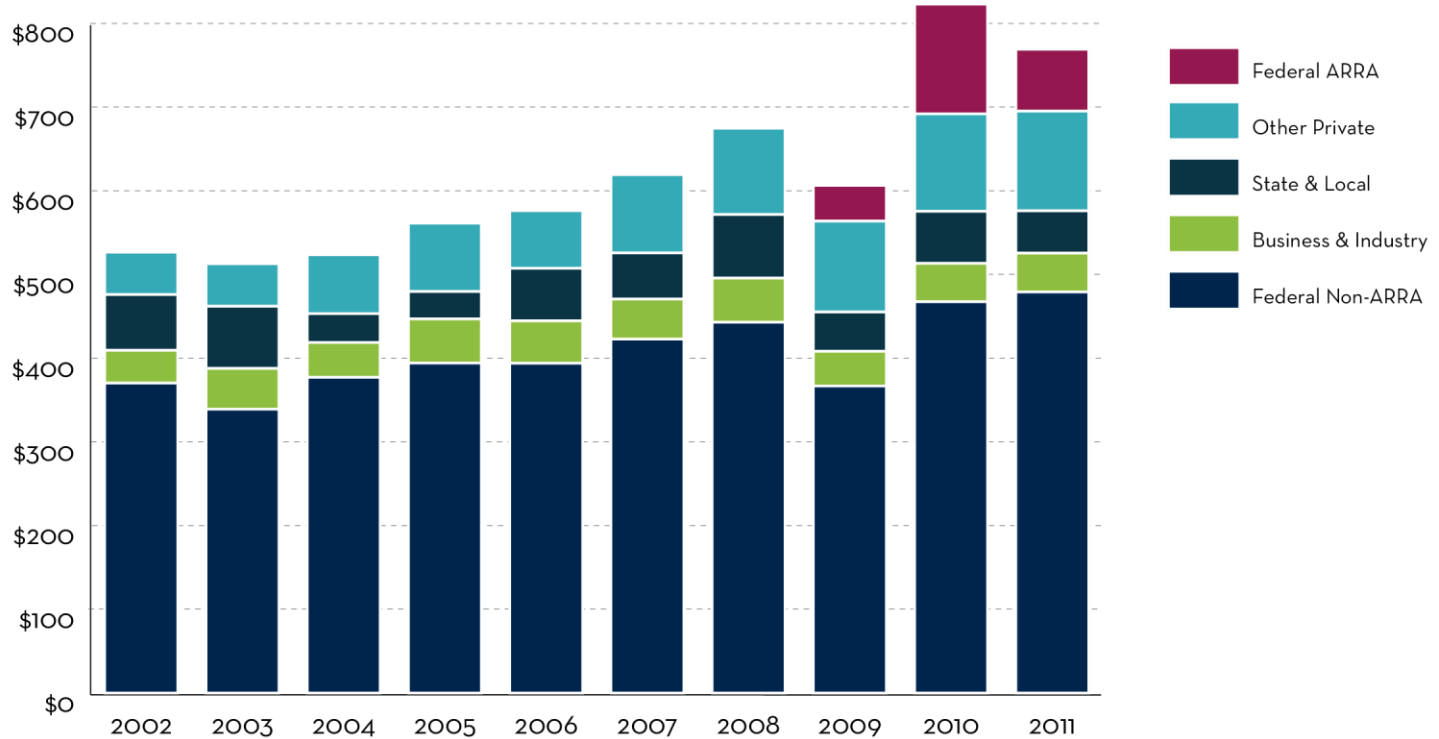
Visit CTSAweb.org to learn more.

- UMN awarded \$51M CTSA in 2011; largest award of its kind ever received by the U
- Effort lead by Bruce Blazar and Connie Delaney
- UMN joins an elite national consortium of research institutions
- Passport to future translational programs by NIH
- Develop teams of investigators to streamline translation of discoveries into treatments
- Foster clinical and translational science; integrate community into research process



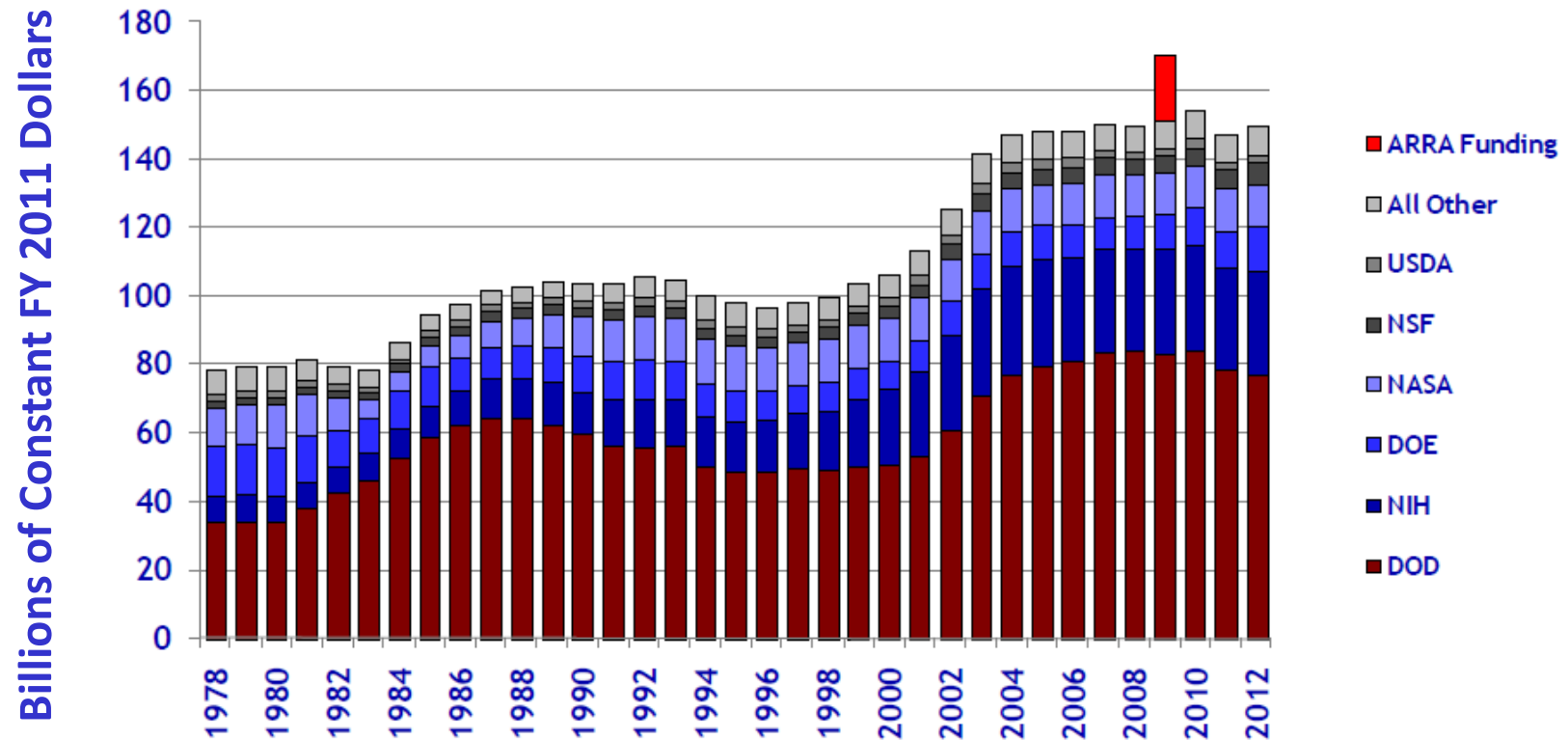
Awards by Category

(10-year trend)



(Dollar amounts represented in millions)

Trends in Federal R&D by Agency

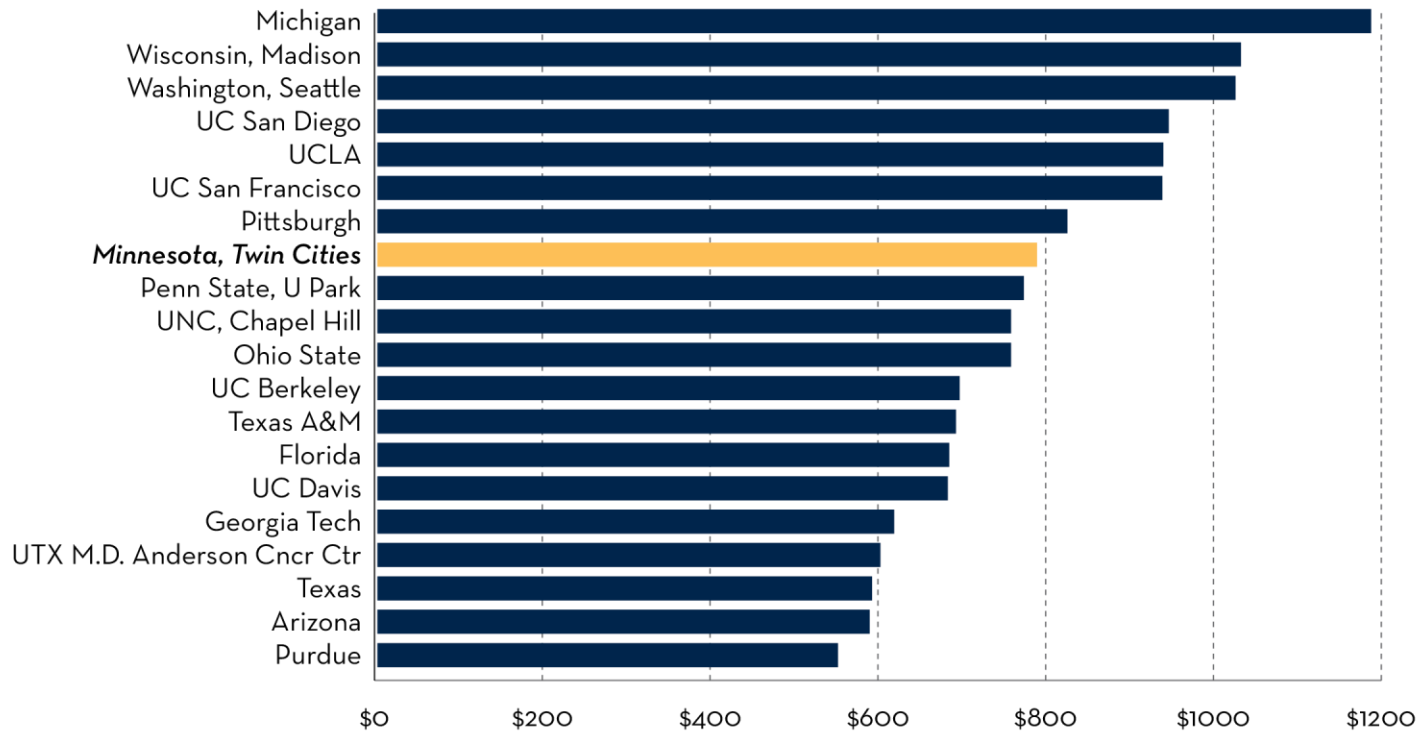


Amounts in billions of constant Fiscal 2011 dollars

Source: AAAS Report: Research & Development series. FY 2011 and FY 2010 figures are latest estimates. 1976-1994 figures are NSF data on obligation in the Federal Funds survey. © 2011 AAAS

2010 NSF R&D Expenditures*

Public Research Universities



(Dollar amounts represented in millions)

*Preliminary figures pending publication of the FY2010 NSF Higher Education and Development Survey

Top 20 Comparison Group Public Universities

	NSF • 2010	Center for Measuring U Performance • 2010	Shanghai • 2010		
	Public	Public	World	US	US • Public
Michigan	1	Group 1	22	18	7
Wisconsin, Madison	2	Group 1	19	17	6
Washington, Seattle	3	Group 2	16	14	4
UC San Diego	4	Group 3	15	13	3
UCLA	5	Group 1	12	10	2
UC San Francisco	6	Group 1	17	15	5
Pittsburgh	7	Group 2	57	38	20
Minnesota, Twin Cities	8	Group 2	28	20	9
Penn State, U Park	9	Group 2	45	31	15
UNC, Chapel Hill	10	Group 1	42	30	14
Ohio State	11	Group 2	63	41	23
UC Berkeley	12	Group 1	4	4	1
Texas A&M	13	Group 4	100	53	30
Florida	14	Group 1	72	43	24
UC Davis	15	Group 4	48	33	17
Georgia Tech	16	Group 2	102-150	54-68	31
UTX M.D. Anderson Cancer Center	17	Group 3	151-200	69-89	52
Texas	18	Group 3	35	27	12
Arizona	19	Group 3	80	47	27
Purdue	20	Group 5	61	40	22

Technology Commercialization

	FY2007	FY2008	FY2009	FY2010	FY2011
<i>Disclosures</i>	193	217	244	255	250
<i>New U.S. Patent Filings</i>	51	52	65	66	78
<i>New Licenses</i>	77	63	44	67	76
<i>Startups</i>	4	2	3	8	9
<i>Current Revenue Generating Agreements</i>	n/a	281	306	399	457
<i>Gross Revenues</i>	\$65.2	\$86.9	\$95.2	\$83.8	\$10.1
<i>Non-Glaxo Revenues</i>	\$8.5	\$7.9	\$8.7	\$8.6	\$10.1
<i>Outgoing Material Transfer Agreements</i>	n/a	67	106	171	271

UMN “...has an outstanding track record of accomplishments that put it at the highest ranks of university tech transfer offices.”

External Review Committee, 2011

University:Industry Partnerships

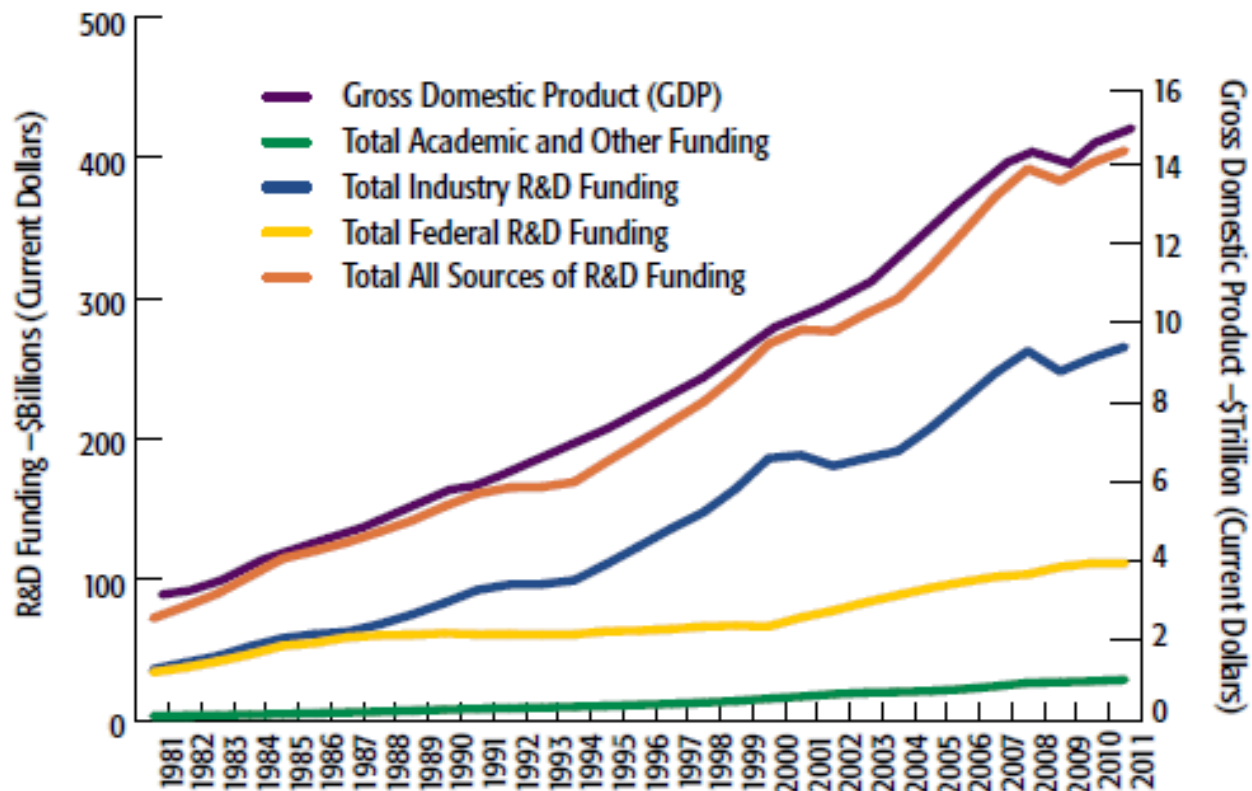
Traditional and Emerging Drivers

Three traditional motivators for U:I relationships:

1. Translation of research to products
2. Sponsored research funding
3. Royalty streams (tech transfer)

Funding as Driver

R&D Funding by Major Source Compared to GDP, 1981-2011



Source: NSF National Patterns of R&D Expenditures Data, *Battelle*, *R&D Magazine* Analysis, Estimates, and Forecasts.

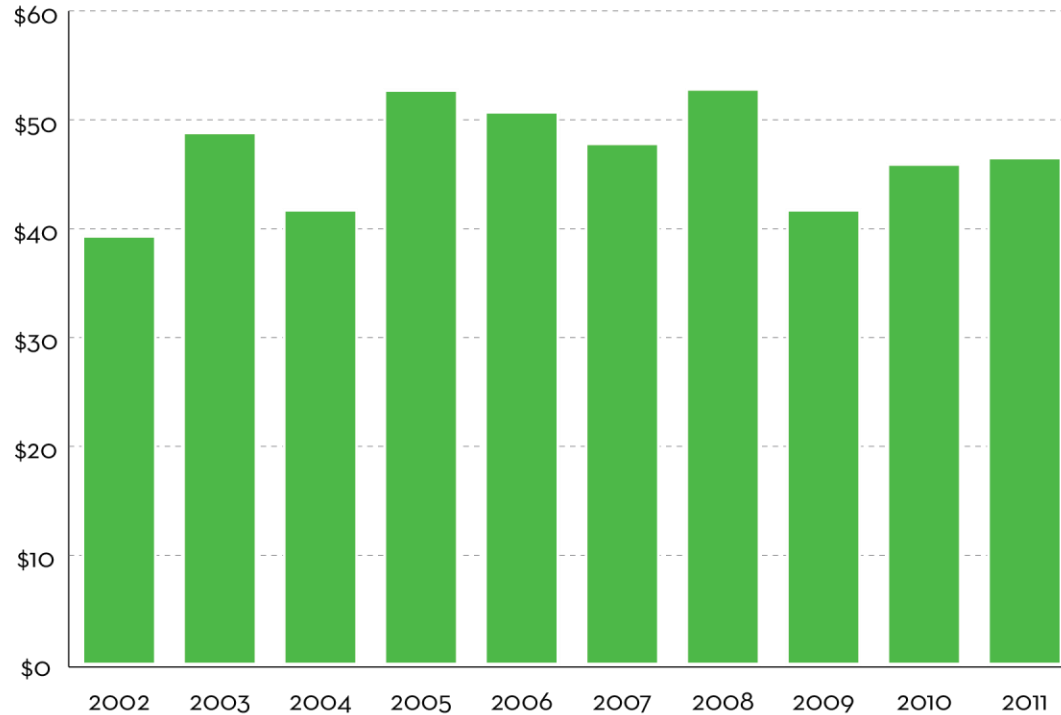
Funding as Driver

The Source-Performer Matrix Estimated Distribution of R&D Funds in 2011 Millions of Current U.S. Dollars (<i>Percent Change from 2010</i>)						
Source	Performer					
	Federal Gov't	Industry	Academia	FFRDC	Non-Profit	Total
Federal Government	\$27,499 -0.71%	\$25,983 -0.05%	\$36,098 0.58%	\$15,595 -0.24%	\$6,245 -0.19%	\$111,421 -0.04%
Industry		\$260,878 3.33%	\$2,765 5.89%		\$1,781 2.56%	\$265,444 3.35%
Academia			\$12,140 4.35%			\$12,140 4.35%
Other Government			\$3,413 5.34%			\$3,413 5.34%
Non-Profit			\$3,088 1.58%		\$9,778 2.13%	\$12,865 2.00%
Total	\$27,499 -0.71%	\$286,862 3.01%	\$57,524 1.93%	\$15,595 -0.24%	\$17,803 1.35%	\$405,283 2.40%

Source: Battelle, R&D Magazine

B&I Sponsored Research Awards

(UMN 10-year trend)

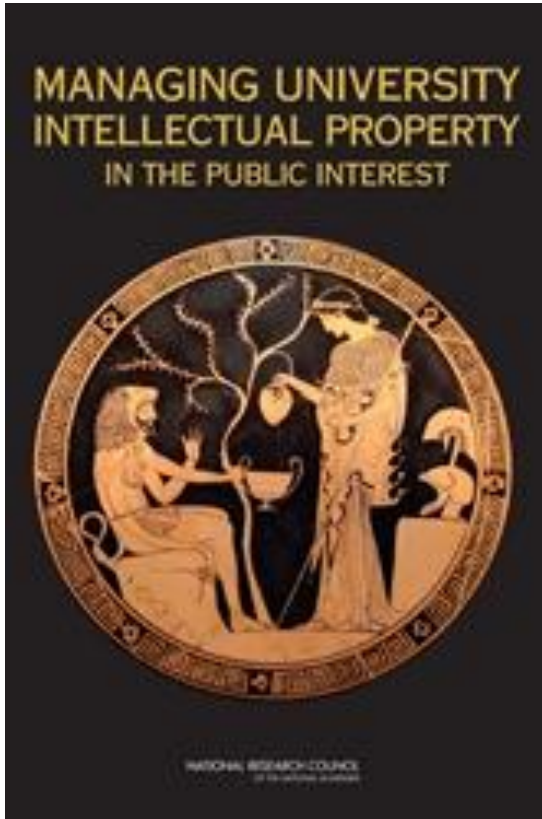


- Relatively flat for 10 years
- ~4% of sponsored research total
- For FY2009 UMN:
 - Ranked 27th overall in B+I sponsored total
 - Ranked 21st among public universities
 - Ranked 13th among the top 20 public universities in B+I support as a % of total research expenditures (range = 1 – 17%; avg = 7%)

(Dollar amounts represented in millions)

Room for Improvement

Royalties as Driver Misplaced Emphasis?



“Patenting and licensing practices should not be predicated on the goal of raising significant revenue for institutions. The likelihood of success is small, the probability of disappointed expectations high and the risk of distorting and narrowing dissemination efforts great.”

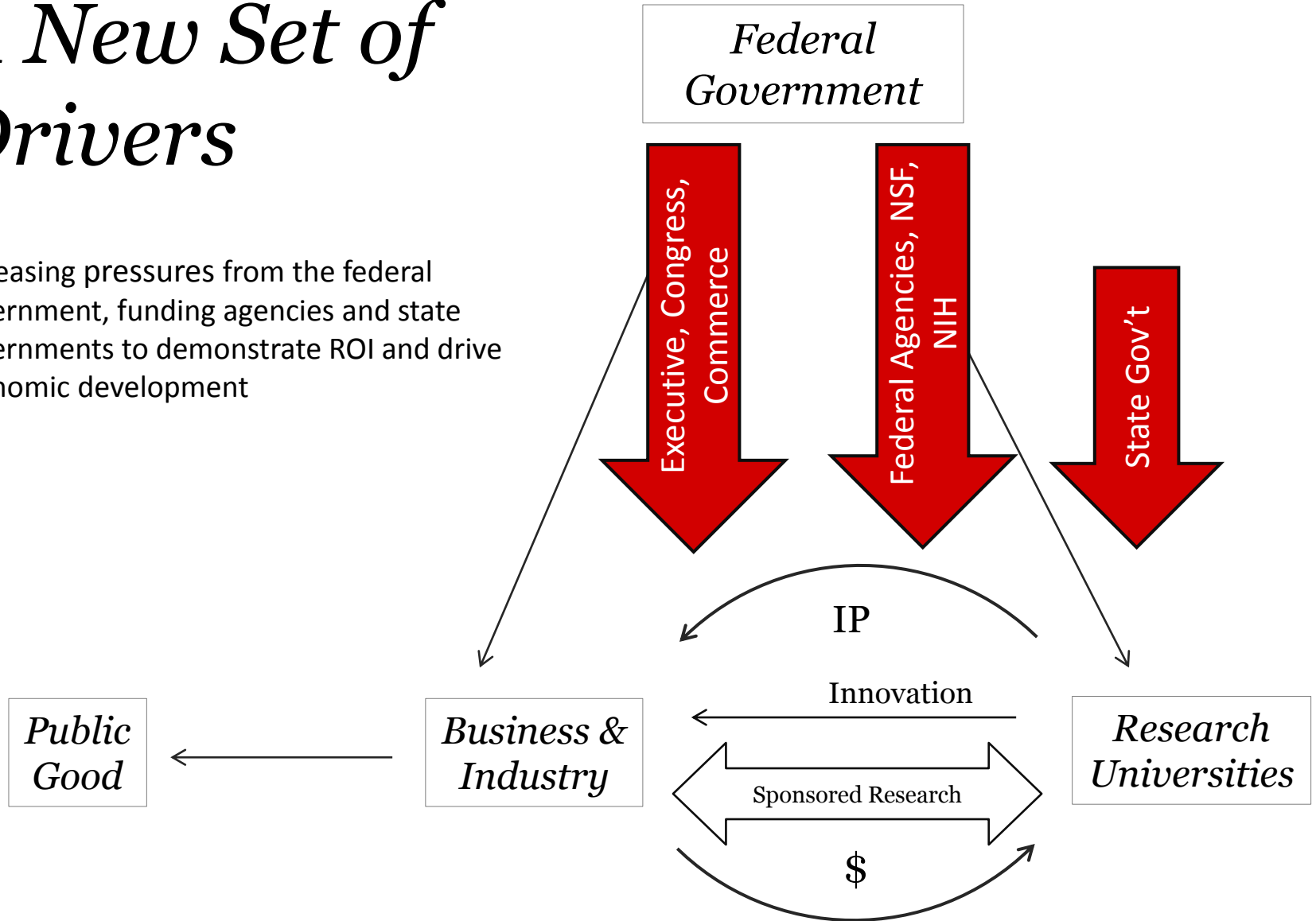
*“Managing University Intellectual Property in the Public Interest”,
National Research Council of the National Academies, 2010*

In 2010, only 33 universities or university systems reported licensing income greater than \$10 million.... Before expenses.

Source: Association of University Technology Managers

A New Set of Drivers

Increasing pressures from the federal government, funding agencies and state governments to demonstrate ROI and drive economic development



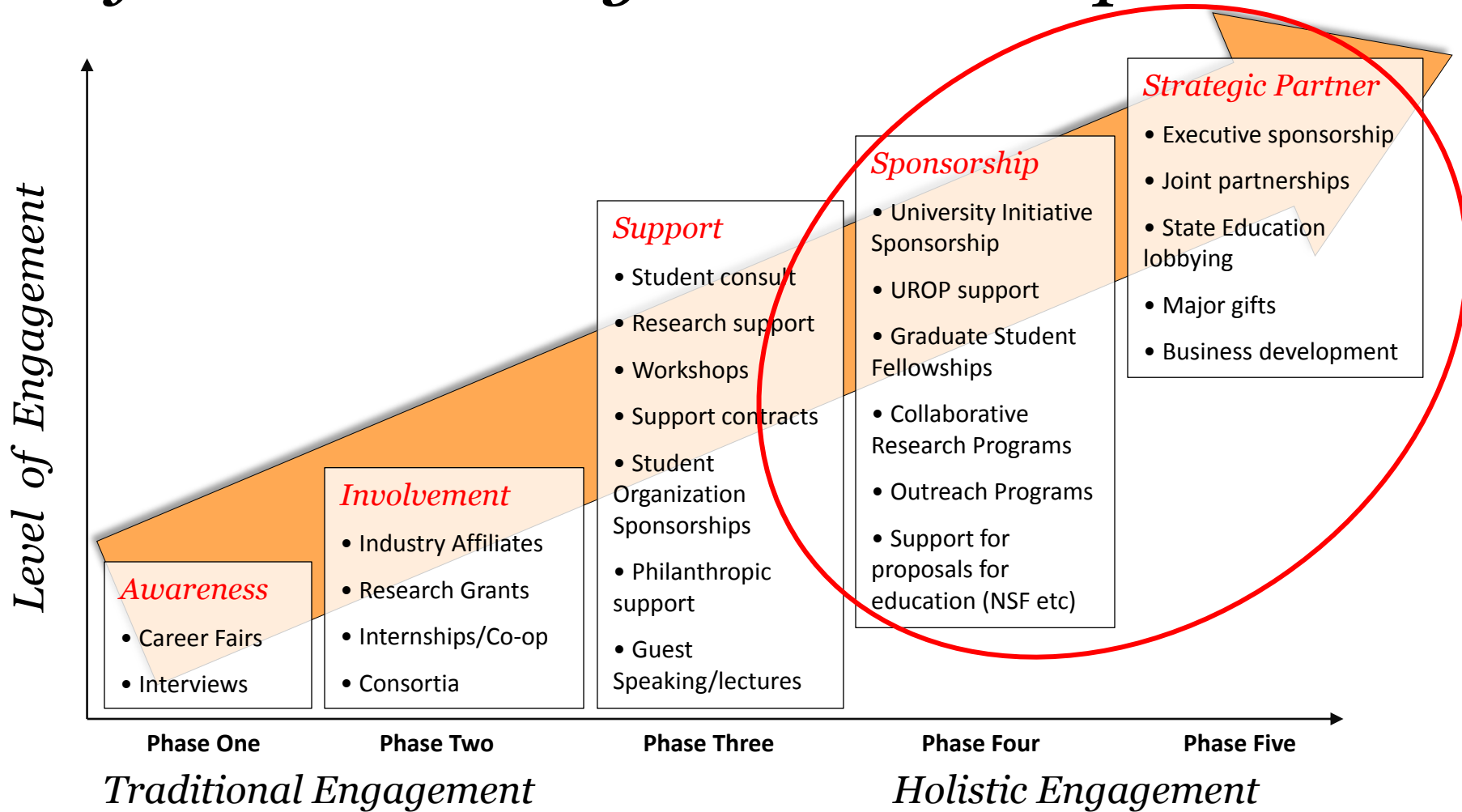
University:Industry Relations 2011

Changing Motivations: Strategic Partnerships

Value propositions for U:I relationships increasingly recognize other advantages of U:I partnerships:

1. Need to translate discoveries to marketable products
2. Source of sponsored research (grant money)
3. Revenue stream - Royalties from licensing and commercialization of IP
4. Federal and state pressures to contribute to competitiveness & economic development
5. Advantages of Strategic Partnerships
 - a. Improved approaches to complex research
 - b. Intellectual cross-fertilization
 - c. Practical experiences for students
 - d. Share resources and expertise
 - e. Enhanced national competitiveness
 - f. Active legislative support of mission
 - g. Philanthropy

Objective: Strategic Partnerships



Adapted from "The Collaboration Imperative: Universities and Industry as Partners in the 21st Century Knowledge Economy." Wayne Johnson, VP Hewlett-Packard. April 25, 2006

Situation Dynamics

Vicious Cycle

- IP-centric
- It takes too much time, effort, money to negotiate agreements
- Perceived deterioration of trust and goodwill, adversely affecting long-term partnerships & collaborations
- Increased flow of sponsored research funds to other parts of the world
- At the working level, people just walk away



Virtuous Cycle

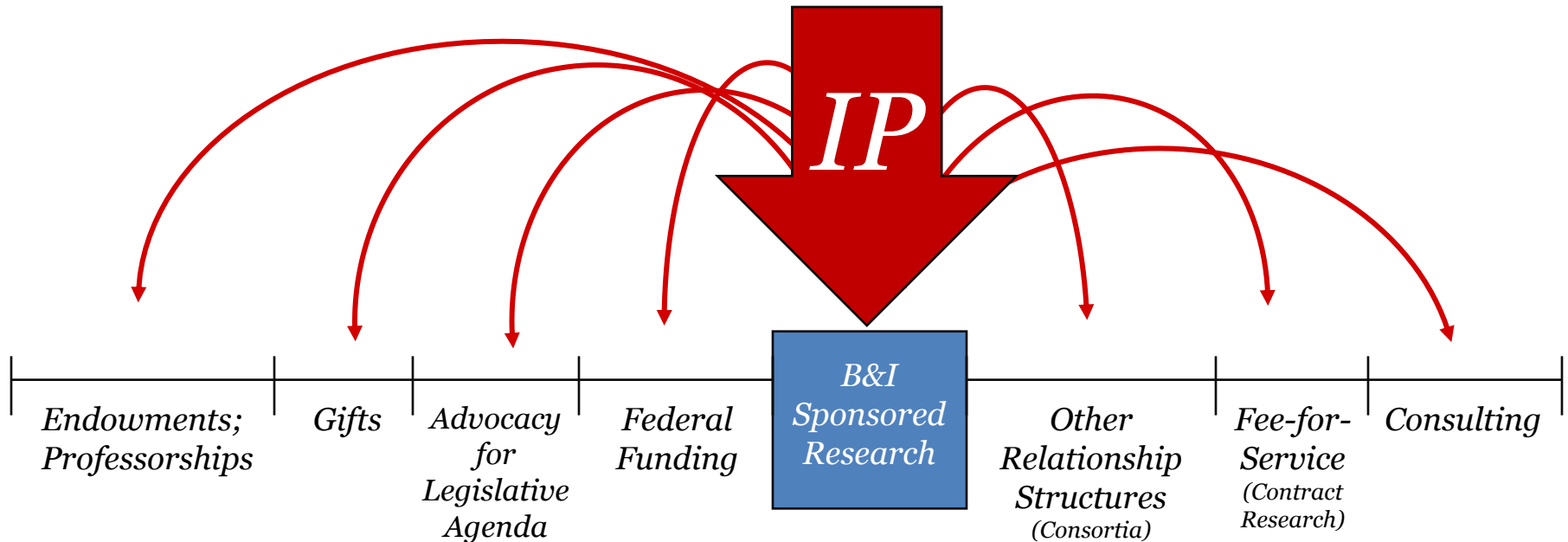


- Relationship-centric
- Trust-enhancing
- Builds on each other's work
- Attracts increasing financial support
- Motivates increasing commitment and contribution of the current contributors
- Attracts increasing involvement of other organizations

From: "The Collaboration Imperative: Universities and Industry as Partners in the 21st Century Knowledge Economy."
Wayne Johnson, VP Hewlett-Packard

Relationship Implications

IP-centric



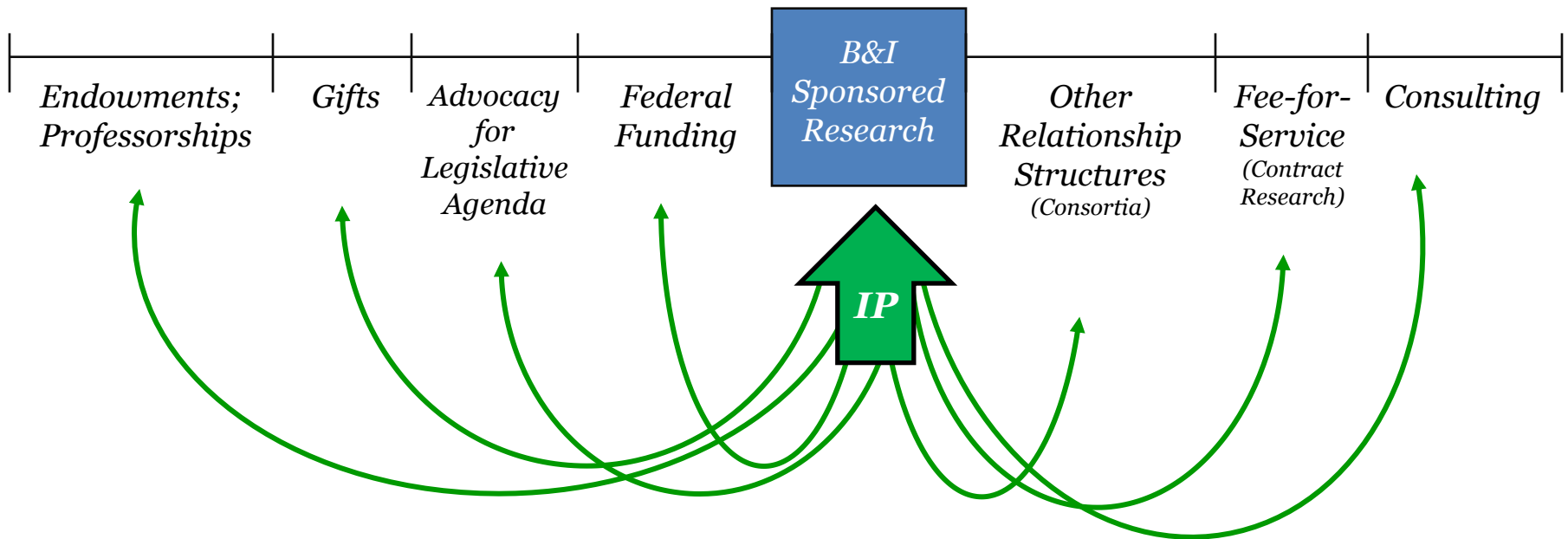
Negative “Spill-overs” From Poor Relationships

Adapted from: “The Collaboration Imperative: Universities and Industry as Partners in the 21st Century Knowledge Economy.” Wayne Johnson, VP Hewlett-Packard

Relationship Implications

Relationship-centric

Positive “Amplifiers” From Good Relationships



Adapted from: “The Collaboration Imperative: Universities and Industry as Partners in the 21st Century Knowledge Economy.” Wayne Johnson, VP Hewlett-Packard

Optimizing the Value Add

The U is employing multiple strategies to enhance U:I relationships:

- Office of Business Relations; “front door” to the U
- Research consortia
- Collaborative partnerships supporting regional economic growth efforts
- Exchange of best practices
- Participation in national organizations addressing challenges inherent in U:I partnerships
- New approaches to IP
 - Increasing use of master agreements
 - Express licensing strategies
 - ***Minnesota Innovation Partnership Program (MN-IP)***

Minnesota Innovation Partnership

(MN-IP)

1. Pre-paid exclusive option fee.
10% of sponsored research contract or \$15K, whichever is greater
2. Company pays patent costs and has the benefit of driving prosecution while collaborating with the University on patent claims.
3. Option to exclusive license with pre-set terms:
 - No annual minimums or 'other' fees
 - No time limits or milestones
 - Sponsor is free to sublicense/cross license
 - "Home run" clause: Each year licensee sales using licensed IP is \geq \$20M, licensee pays 1% royalties on net sales
 - No cap on royalties *unless* invention improves on the sponsor's pre-existing product or processes

Essentially, the MN-IP program will give a company sponsoring research at the U the opportunity to pay an administrative fee and receive rights for an exclusive worldwide license with these pre-set terms for any IP generated.

MN-IP Comparison

Current Terms

Non-Exclusive Royalty Free + Option to Negotiate Exclusive License

Frustrating and uncertain negotiation only after research is completed

No incentive to negotiate exclusive license, so no commercialization requirements

Can result in adversarial relationship with sponsor

Lack of active “seeking” component in attracting industry sponsors

MN-IP

Exclusive Option Fee + Pre-set Terms

No negotiation needed; all terms and costs known before research starts

Stronger incentive (pre-paid fees) for company to commercialize technology

Builds positive relationships with sponsors

OTC participates in working with faculty to attract sponsors

MN-IP Impact

- An industry-leading strategy
- A game-changer
- Expected to make UMN a research destination of choice for corporate sponsors of research

**Will earn the University of Minnesota a spot
at the top of the second page!**

Conclusions

- The U continued its strong research performance in FY2011 and remained 8th among public research universities in the US
- In FY2011 the U joined the ranks of leading universities in the NIH's Clinical and Translational Research Award program
- Transformations in the tech transfer operation have elevated the U into a position among the best in class
- The U has launched new initiatives to encourage more effective research partnerships with business and industry
- The U remains an invaluable asset to the state of Minnesota



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