

# **Facilitating and Achieving Research Growth**

**University Council  
September 12, 2005**

**What are OVPREA's priorities?**

**What does research contribute to ASU revenue?**

**What is ASU's research funding track record?**

**What are appropriate funding growth targets?**

**What strategies can help achieve 25% growth?**

**What can OVPREA do to facilitate growth?**

**How do we get more administrators involved?**

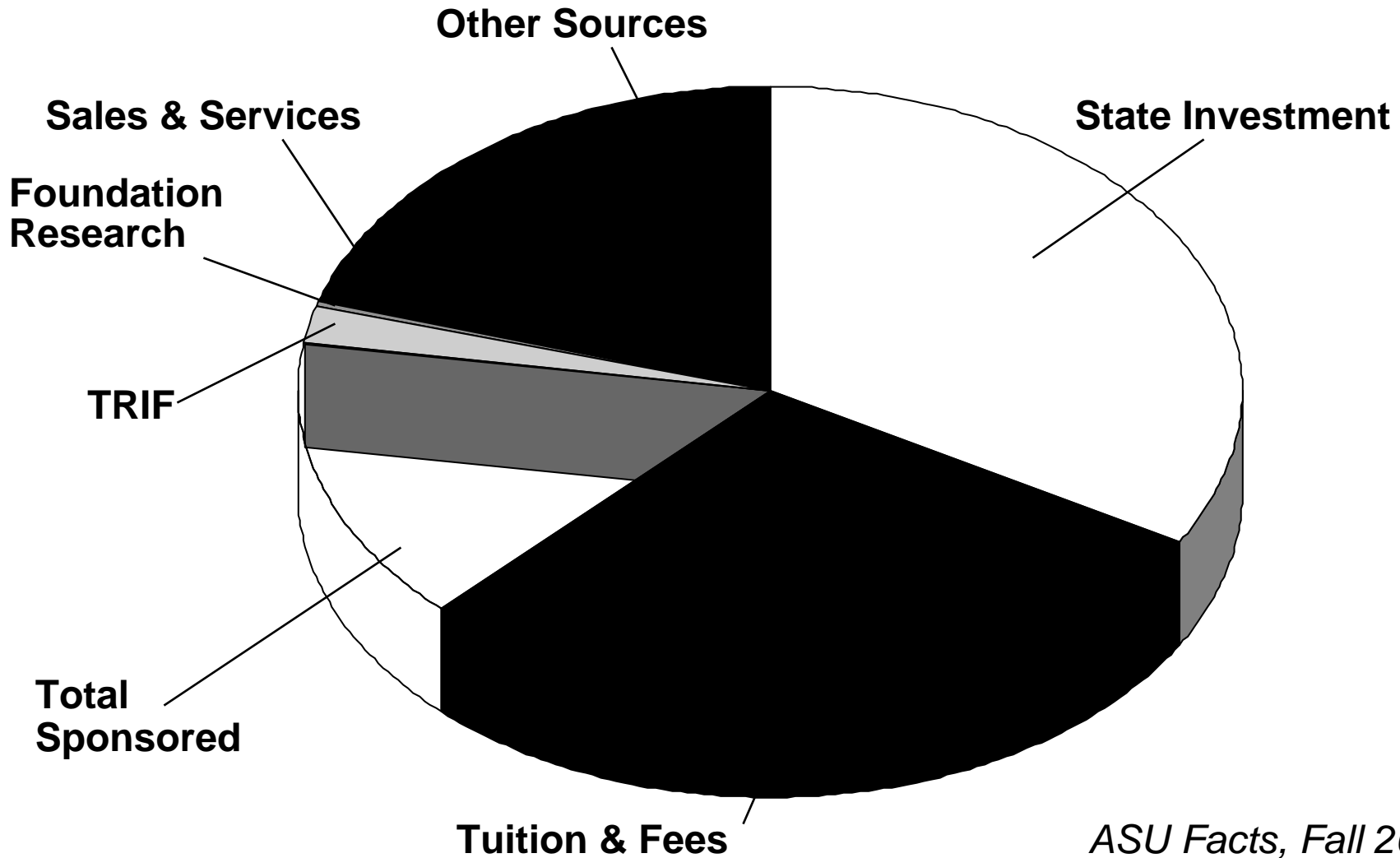
**What are OVPREA's priorities?**

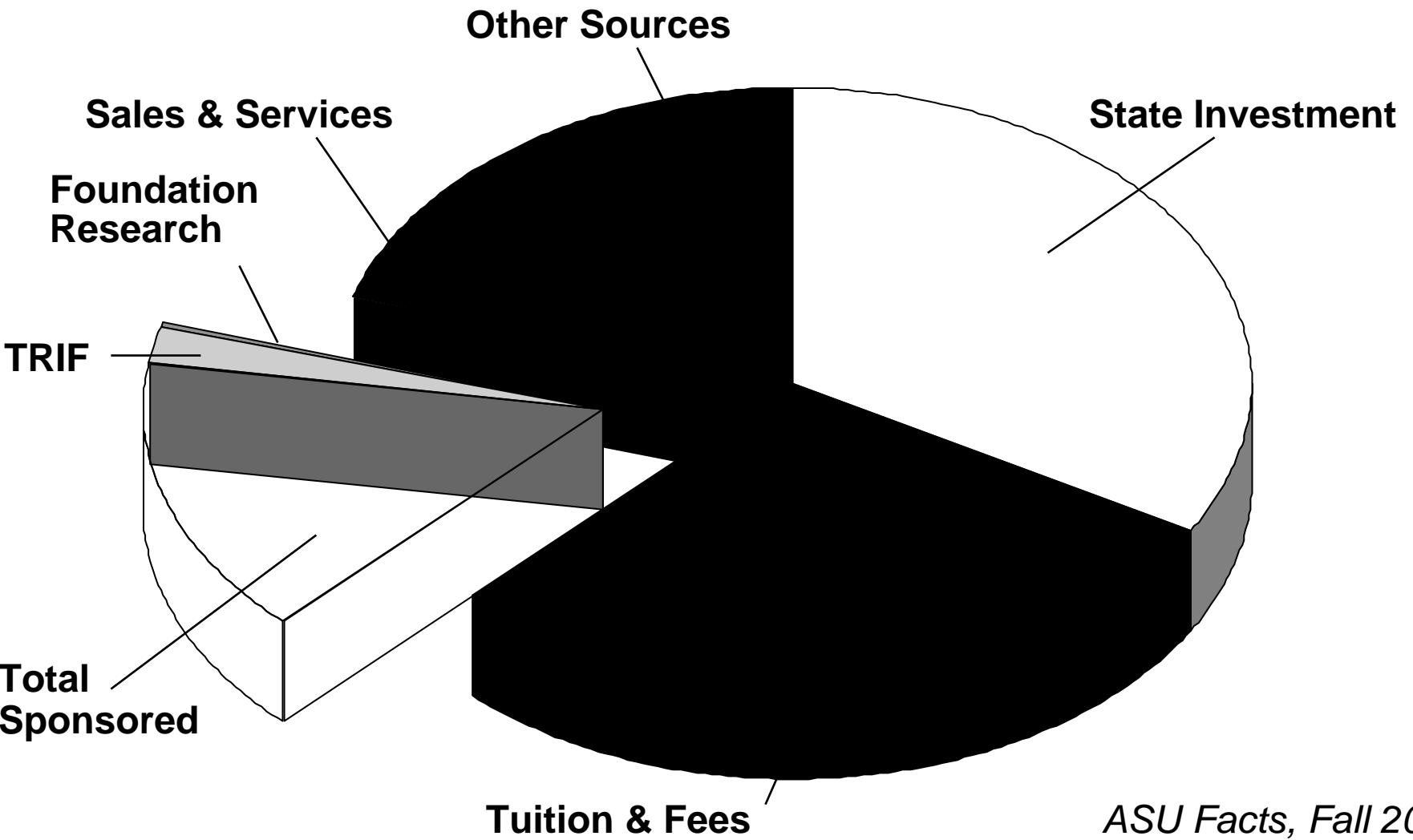
- **Achieve critical mass by doubling expenditures in 3-4 years (20-25% annual growth rate)**
- **Recruit targeted “superstar” faculty**
- **Strengthen exemplar research programs (Biodesign, MacroTechnology Works, Sustainability, Decision Theater, Stardust Center, Religion & Conflict, Arts, Media & Engineering)**
- *Focus here is on externally-funded areas; the same approach can apply to rest of ASU through partnering with ASU Foundation, Provosts’ Offices and Deans*

- **Funding source for new initiatives and facilities**
- **ASU reputation hinges on these metrics**
- **Helps with recruiting faculty and students**
- *Funding enables and reflects excellence, but doesn't replace it*

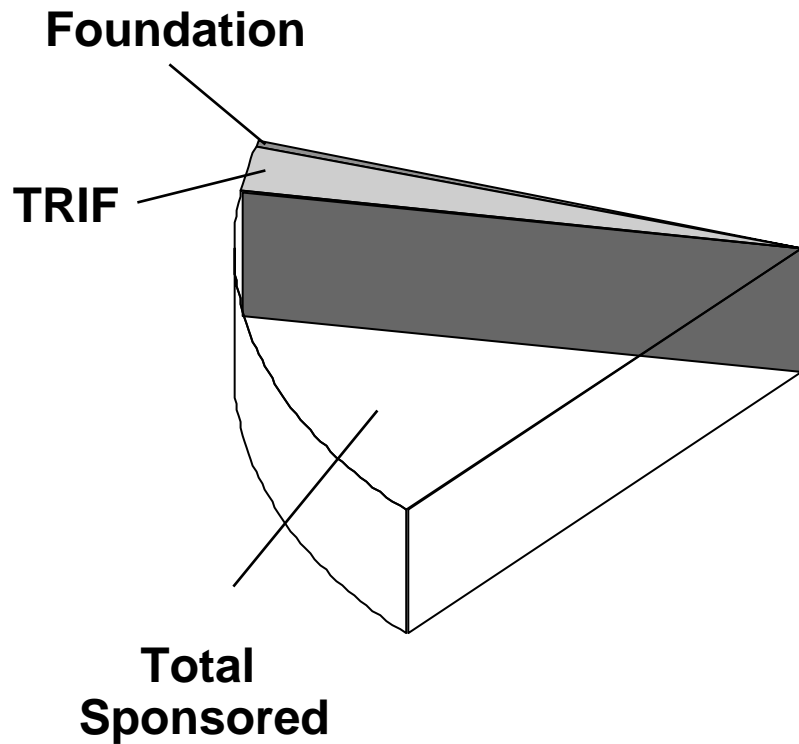


**What revenue does research  
contribute to ASU?**









**In FY 2005:**

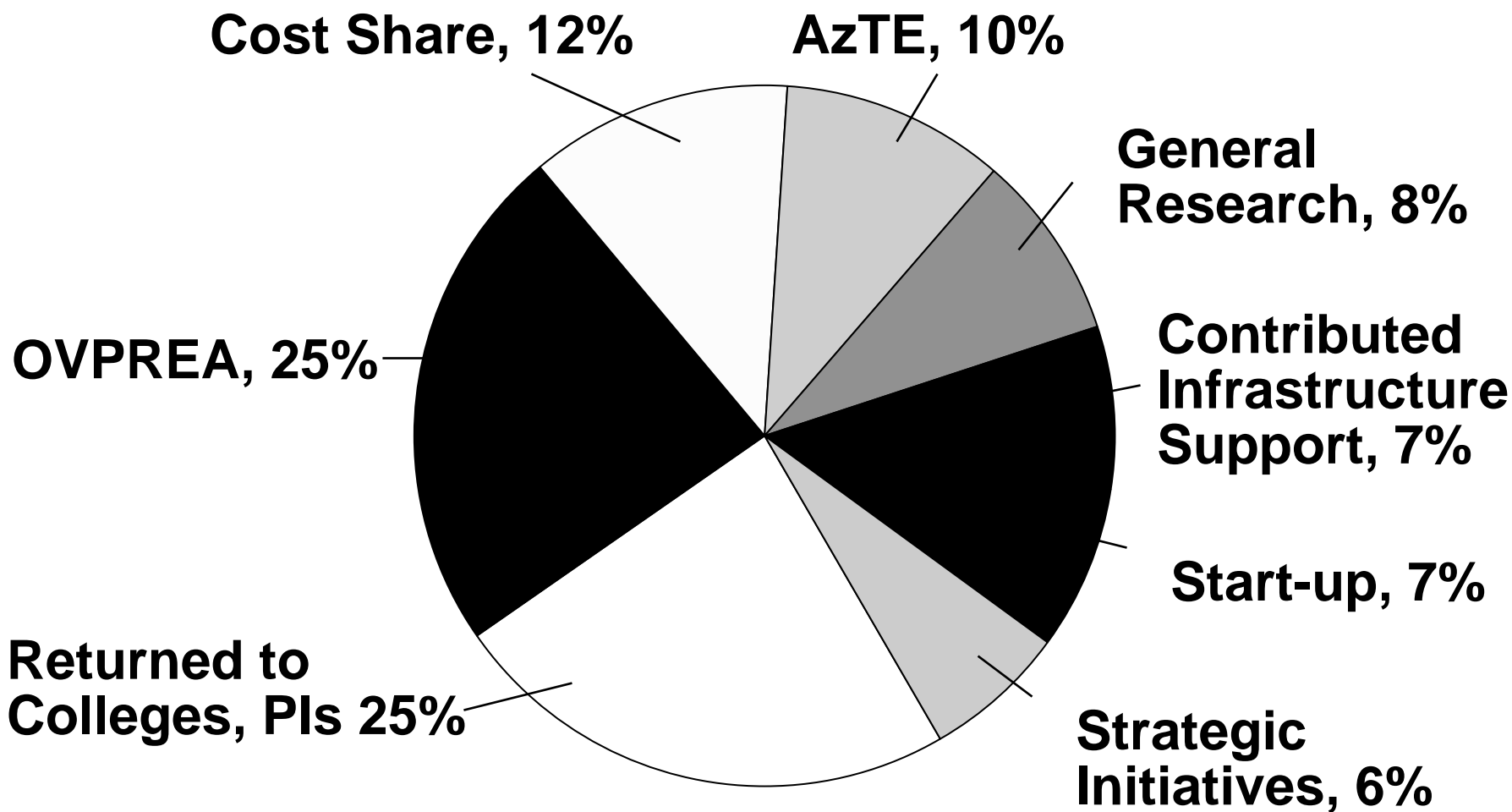
**Total Sponsored Expenditures:**  
**\$153.0 million**

**Total TRIF Expenditures:**  
**\$ 22.6 million**

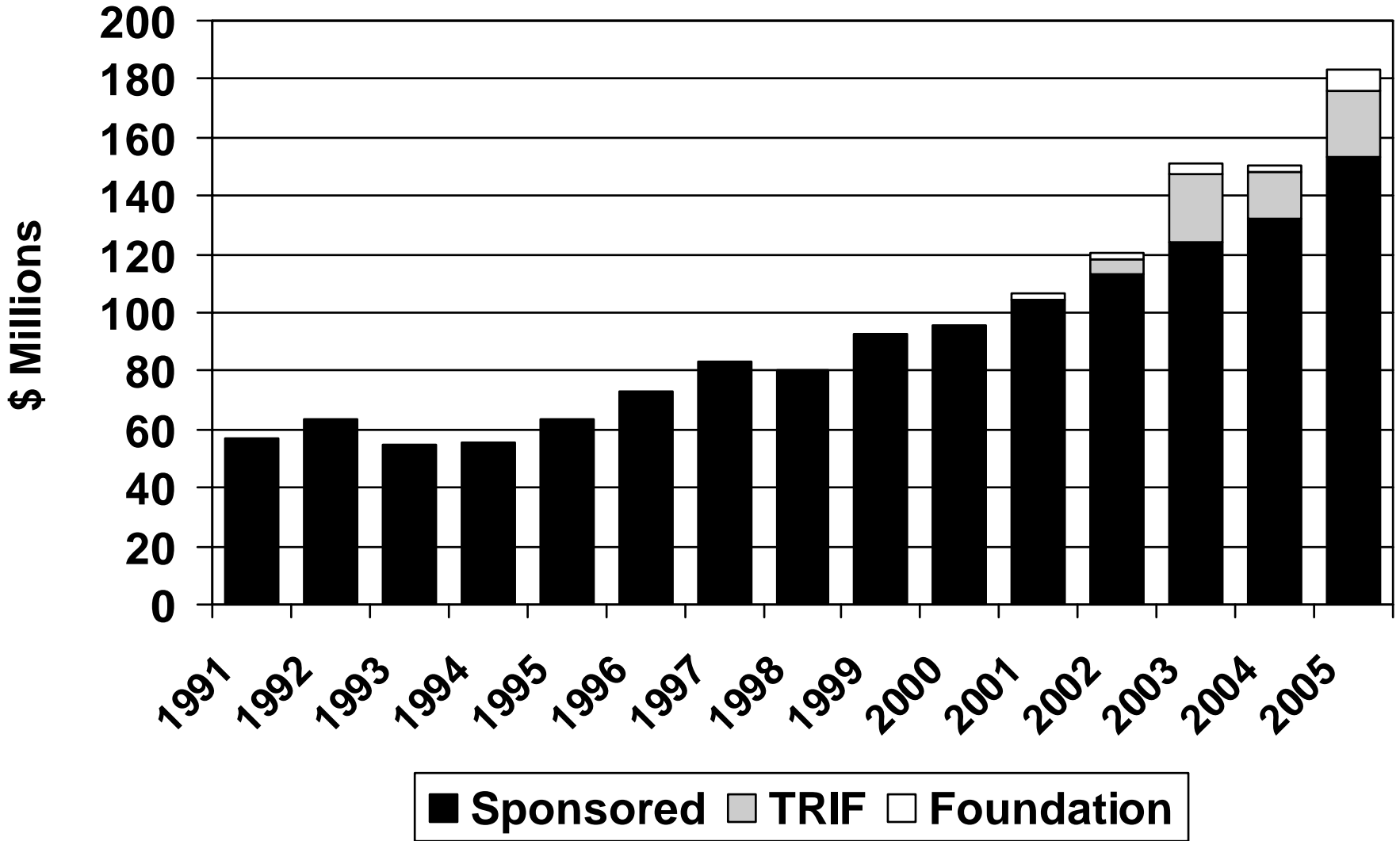
**ASU Foundation Expenditures for  
Research:**  
**\$ 7.6 million**

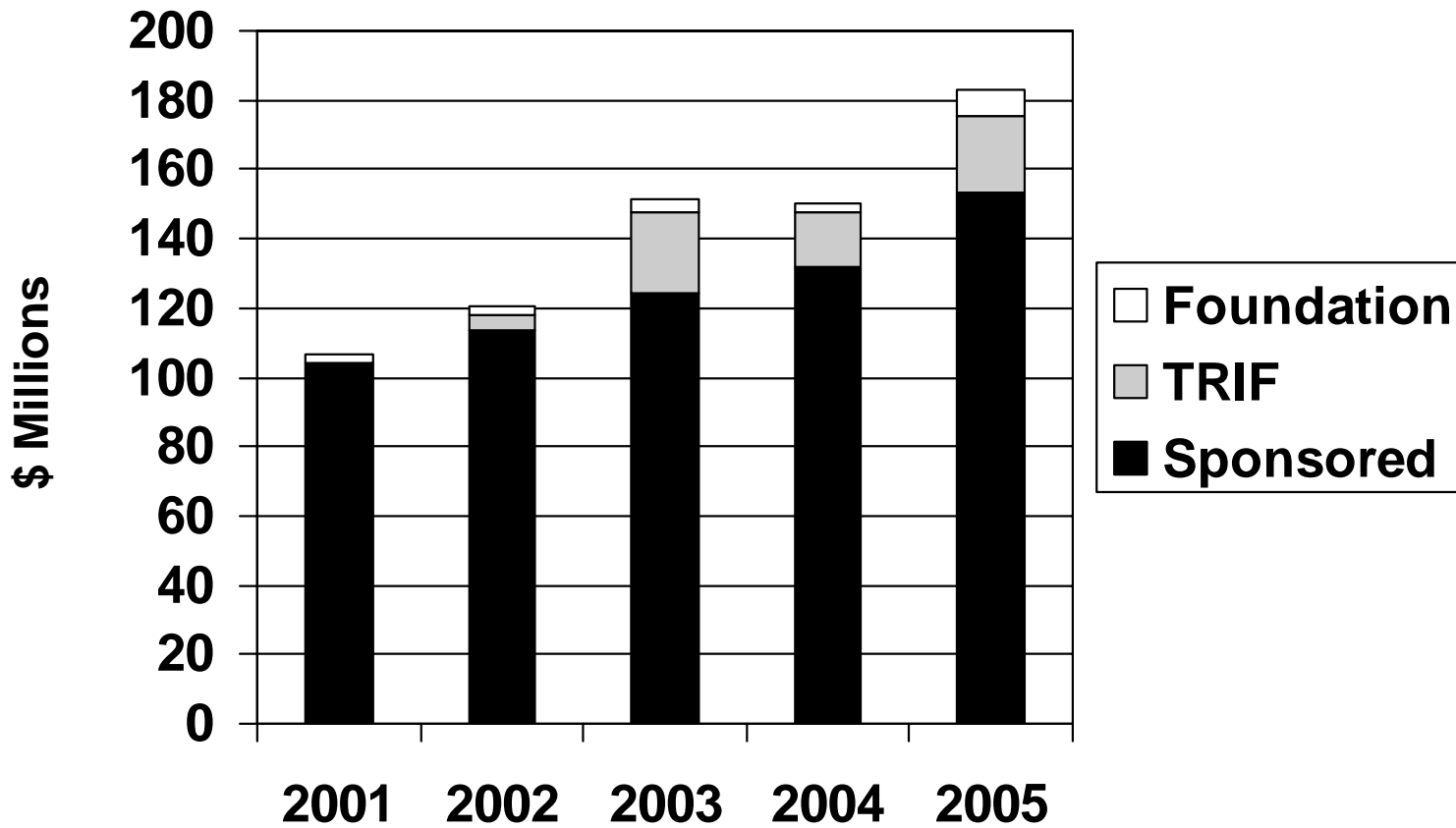
**TOTAL: \$183.2 million**

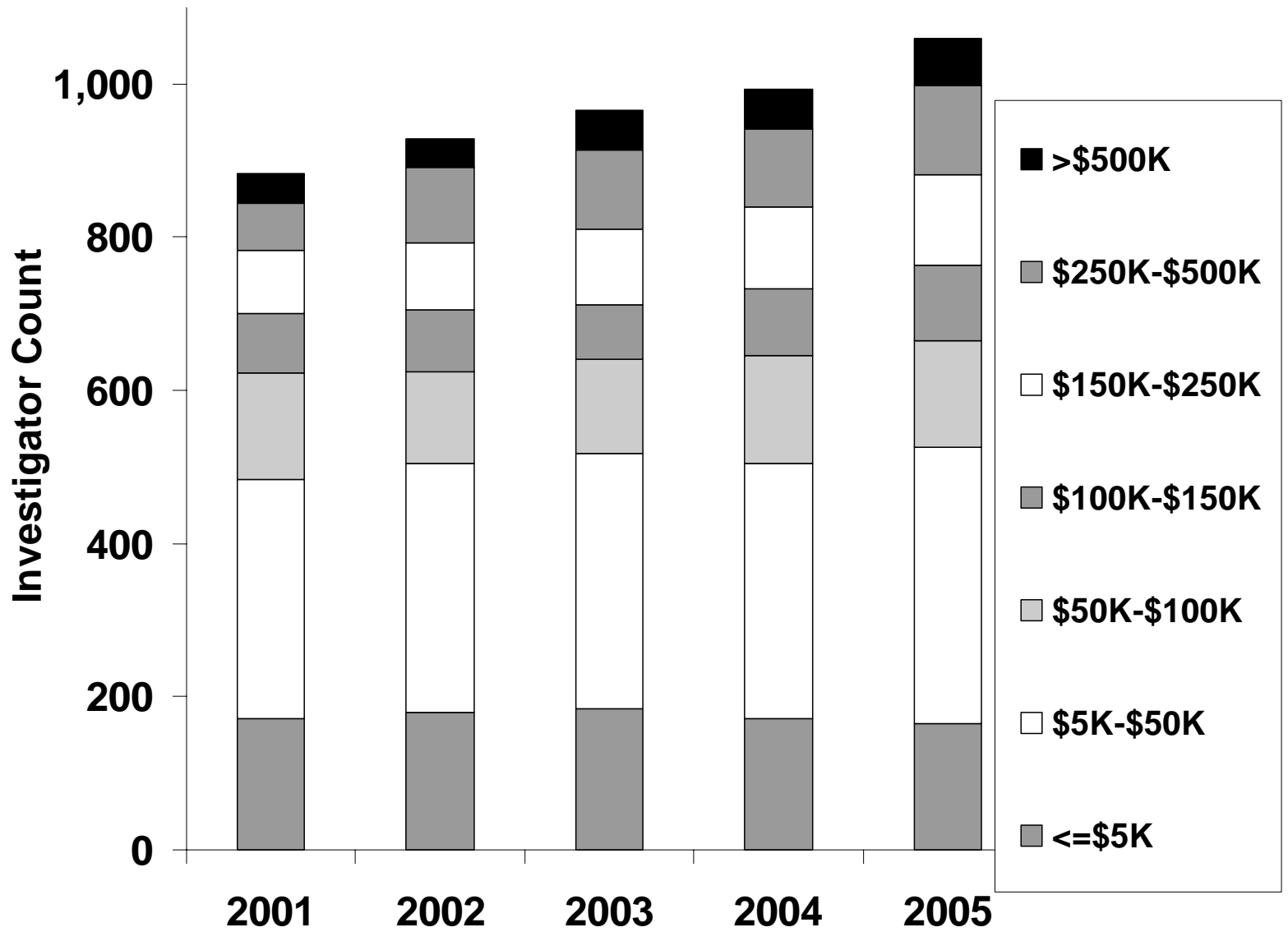
<b>25%</b>	<b>Colleges/Schools/Departments/PI's for discretionary use (20% RID + 5% IIA) + FDC/ANBC special arrangements</b>
<b>25%</b>	<b>Research Administration and Support (ORSPA, Animal Care, Proposal Machine, Research Publications, F&amp;A Rate Case, etc.)</b>
<b>12%</b>	<b>Cost Share with Colleges/Schools/Departments/PI's</b>
<b>10%</b>	<b>Technology Transfer/IP/Licensing – AzTE</b>
<b>8%</b>	<b>General Research Support (seed funds, space, facilities, etc)</b>
<b>7%</b>	<b>Contributed ASU Infrastructure Support (Libraries, OGC, Purchasing, Federal Relations, Property Control, Graduate College, Tuition, Health Care, etc.)</b>
<b>7%</b>	<b>Start-Ups/Major Equipment Purchases/Renovations/etc.</b>
<b>6%</b>	<b>Strategic initiatives and TRIF backfill</b>

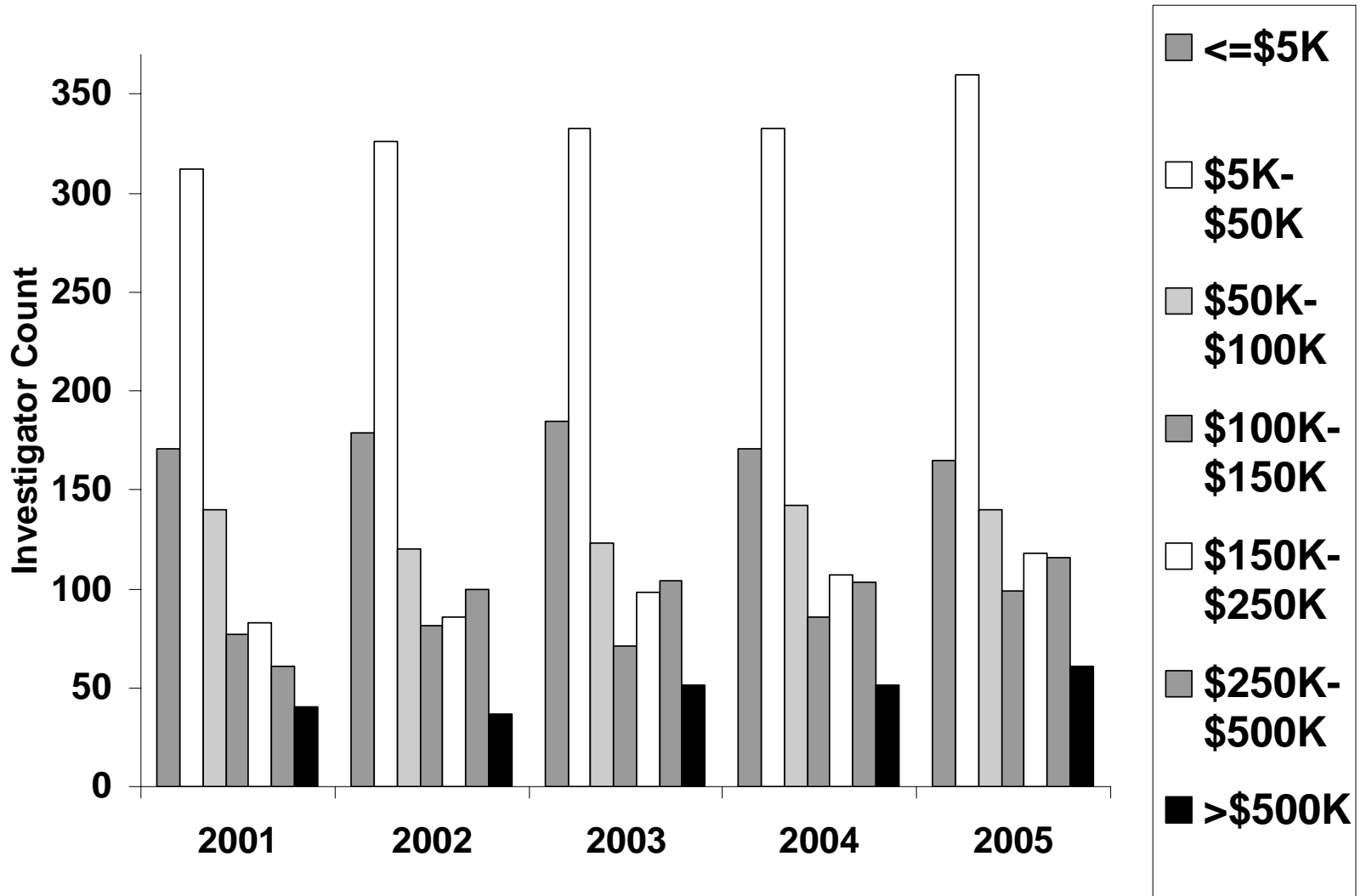


**What are ASU's research  
growth trends?**







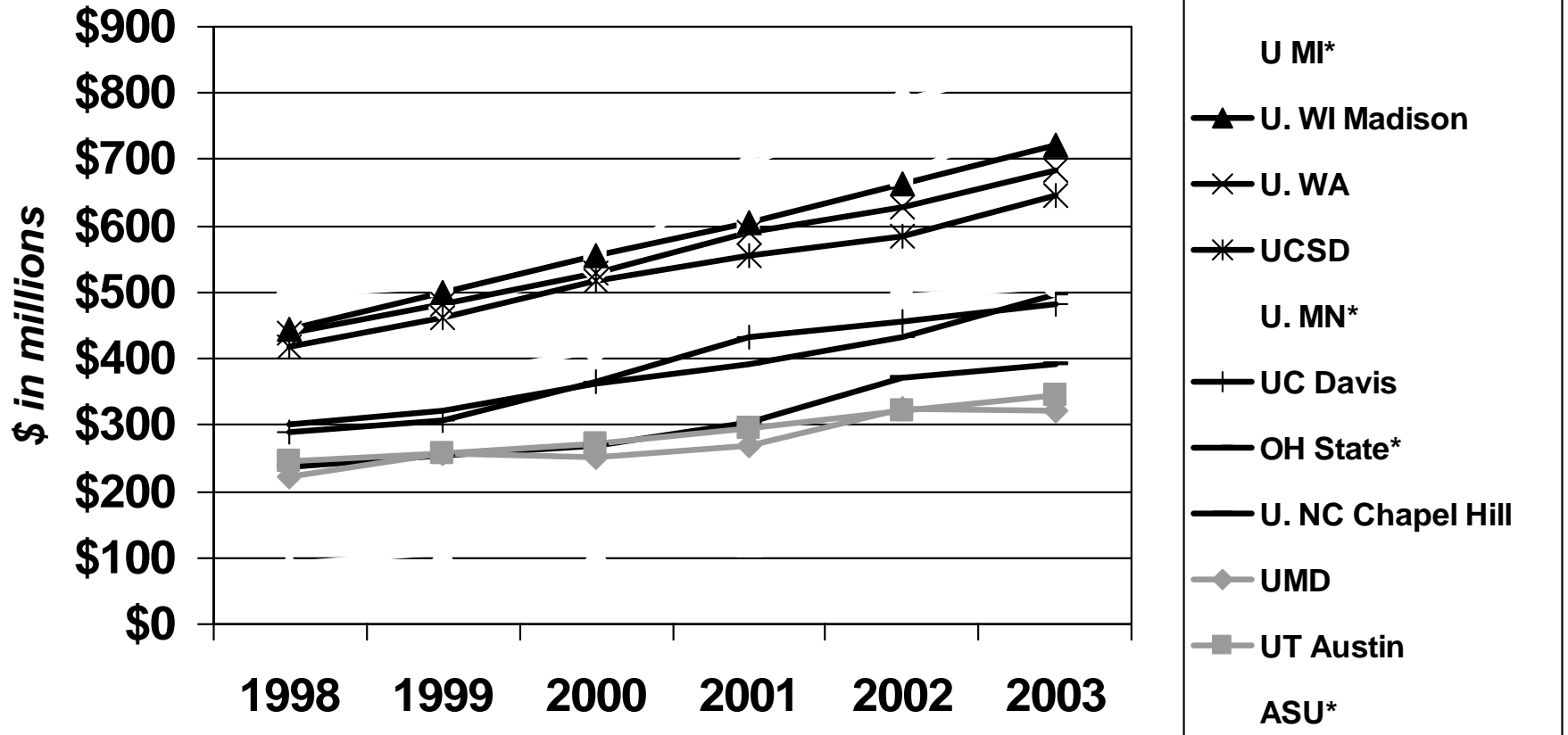




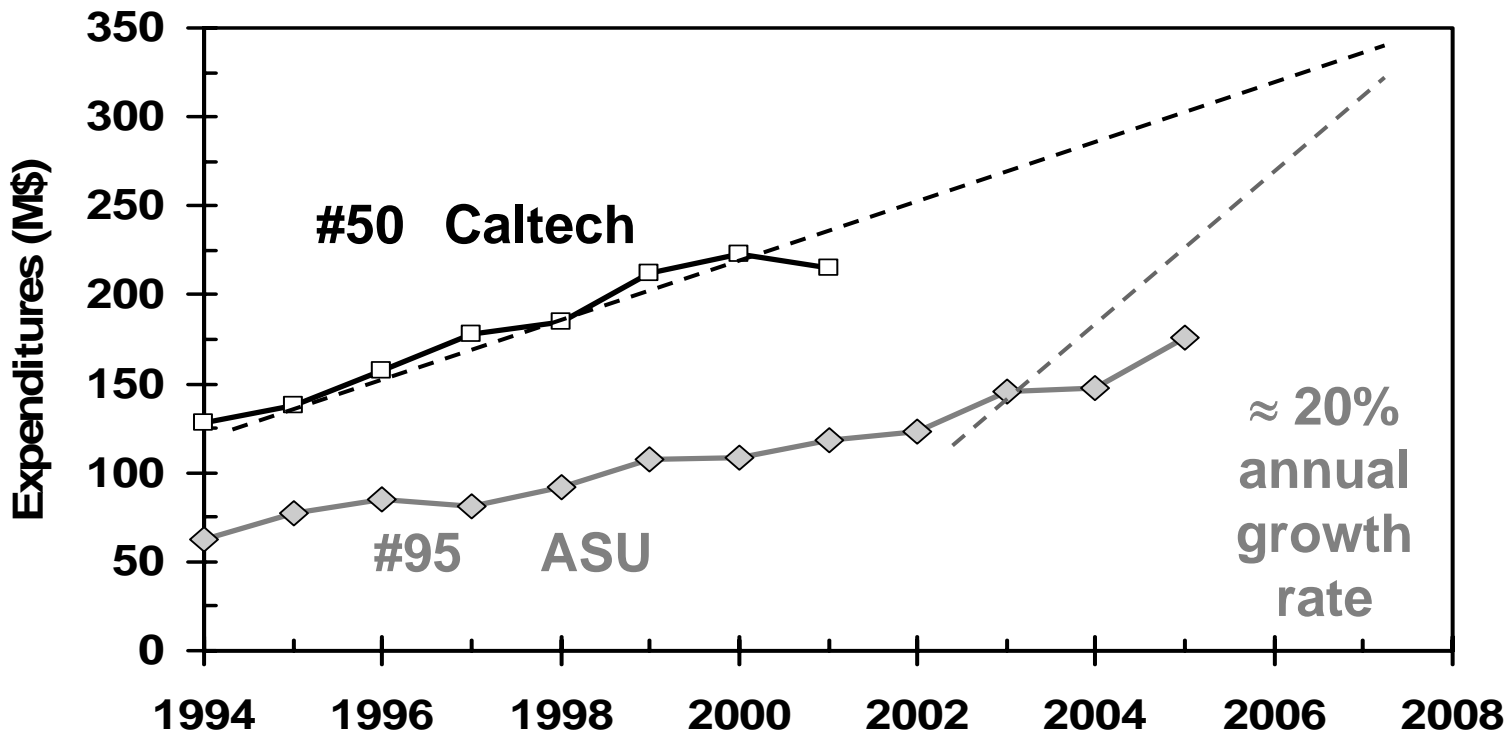
<b>Expenditures by Investigator</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>&lt;=\$5K / year</b>	<b>171</b>	<b>179</b>	<b>185</b>	<b>171</b>	<b>165</b>
<b>\$5K - \$50K / year</b>	<b>312</b>	<b>326</b>	<b>333</b>	<b>333</b>	<b>360</b>
<b>\$50K - \$100K / year</b>	<b>140</b>	<b>120</b>	<b>123</b>	<b>142</b>	<b>140</b>
<b>\$100K - \$150K / year</b>	<b>77</b>	<b>81</b>	<b>71</b>	<b>86</b>	<b>99</b>
<b>\$150K - \$250K / year</b>	<b>83</b>	<b>86</b>	<b>98</b>	<b>107</b>	<b>118</b>
<b>\$250K - \$500K / year</b>	<b>61</b>	<b>100</b>	<b>104</b>	<b>103</b>	<b>116</b>
<b>&gt;\$500K / year</b>	<b>40</b>	<b>37</b>	<b>51</b>	<b>51</b>	<b>61</b>
<b>Total Investigators</b>	<b>884</b>	<b>929</b>	<b>965</b>	<b>993</b>	<b>1,059</b>
<b>Total w/activity &gt; \$5K</b>	<b>713</b>	<b>750</b>	<b>780</b>	<b>822</b>	<b>894</b>
<b>Total Faculty Count</b>	<b>2,055</b>	<b>2,056</b>	<b>2,071</b>	<b>2,031</b>	<b>2,022</b>
<b>Faculty Participation</b>	<b>43.0%</b>	<b>45.2%</b>	<b>46.6%</b>	<b>48.9%</b>	<b>52.4%</b>

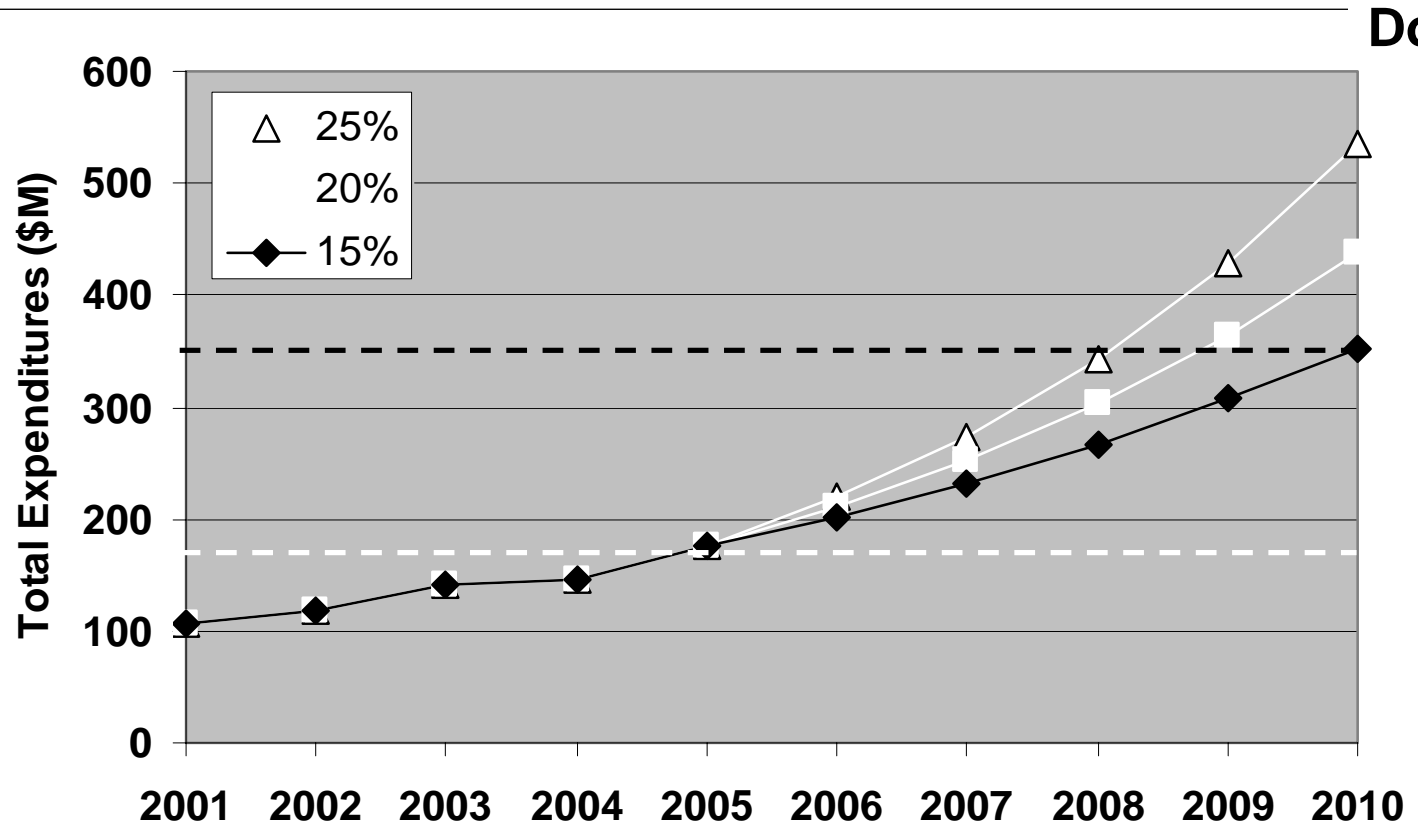
**What are appropriate targets  
for ASU research funding?**

# 1998-2003



\*All campuses. National Science Foundation, [www.nsf.gov/statistics/nsf05320/pdf/tables.pdf](http://www.nsf.gov/statistics/nsf05320/pdf/tables.pdf)





**Doubling in:**

**3 yrs**

**5 yrs**

**What strategies can help  
achieve 25% growth rate?**

- **Everyone increases by 25% (RCM to the Max!)  
BUT: not generally sustainable, not efficient, not strategic**
- **Differential targets: Colleges set different goals based on more detailed knowledge of opportunities—some higher than 25%**
- **Strategic approach—create opportunities for faster growth  
(Move or create national labs or state agencies, public/private partnerships with major corporations, real estate-academic projects like Biosphere & Scottsdale)**
- **Create institutes with more flexibility and higher expectations**
- **Concentrate dollars in order to accelerate rise in prestige**
- **Recruit superstars who already have large grant portfolios**
- **Increase competitiveness by filling niches**

<b>COLLEGE OR VP UNIT</b>	<b>FY05 EXPENDITURES</b>	<b>FY06 25%</b>	<b>STRETCH GOAL</b>
<b>AGRIBUS &amp; RESOURCE MGT</b>	<b>\$688,657</b>	<b>\$860,821</b>	<b>\$1.0 M</b>
<b>EAST COLLEGE</b>	<b>\$1,149,971</b>	<b>\$1,437,464</b>	<b>\$2.0 M</b>
<b>TECH &amp; APPLIED SCIENCES</b>	<b>\$2,487,916</b>	<b>\$3,109,895</b>	<b>\$3.7 M</b>
<b>DESIGN</b>	<b>\$570,751</b>	<b>\$713,439</b>	<b>\$1.0 M</b>
<b>EDUCATION</b>	<b>\$11,013,080</b>	<b>\$13,766,350</b>	<b>\$15.0 M</b>
<b>FINE ARTS</b>	<b>\$406,088</b>	<b>\$507,610</b>	<b>\$0.8 M</b>
<b>LAW</b>	<b>\$562,110</b>	<b>\$702,637</b>	<b>\$1.0 M</b>
<b>CLAS</b>	<b>\$70,634,475</b>	<b>\$88,293,094</b>	<b>\$100.0 M</b>
<b>NURSING</b>	<b>\$1,834,267</b>	<b>\$2,292,833</b>	<b>\$3.0 M</b>
<b>PUBLIC PROGRAMS</b>	<b>\$4,474,092</b>	<b>\$5,592,615</b>	<b>\$6.0 M</b>



<b>COLLEGE OR VP UNIT</b>	<b>FY05 EXPENDITURES</b>	<b>FY06 25%</b>	<b>STRETCH GOAL</b>
<b>UNIVERSITY COLLEGE</b>	<b>\$88,286</b>	<b>\$110,357</b>	<b>\$0.3 M</b>
<b>HONORS COLLEGE</b>	<b>\$3,278</b>	<b>\$4,097</b>	<b>\$0.2 M</b>
<b>BUSINESS</b>	<b>\$3,724,072</b>	<b>\$4,655,090</b>	<b>\$6.0 M</b>
<b>ENGINEERING</b>	<b>\$38,296,268</b>	<b>\$47,870,336</b>	<b>\$55.0 M</b>
<b>GLOBAL MANAGEMENT/LEADERSHIP</b>	<b>\$134,589</b>	<b>\$168,237</b>	<b>\$0.4 M</b>
<b>HUMAN SERVICES</b>	<b>\$545,936</b>	<b>\$682,420</b>	<b>\$1.0 M</b>
<b>INTERDISC ARTS &amp; SCIENCES</b>	<b>\$330,430</b>	<b>\$413,037</b>	<b>\$0.6 M</b>
<b>TEACHER EDUCATION</b>	<b>\$1,622,055</b>	<b>\$2,027,569</b>	<b>\$3.0 M</b>
	<b>\$153,016,176</b>	<b>\$191,270,221</b>	<b>\$200.0M</b>

<b>Option</b>	<b>Growth Potential</b>	<b>#needed for \$50M</b>	<b>Comments</b>	<b>Likely in FY06</b>	<b>Likely Growth</b>	<b>Possible #</b>	<b>Possible Growth</b>
<b>NAE/NAS “Superstar” Faculty</b>	<b>\$2M</b>	<b>25</b>	<b>Difficult to hire &gt;4-5 per year; lack of contiguous space to attract senior hires; need add’l 250,000 s.f. research space</b>	<b>3</b>	<b>\$6M</b>	<b>5</b>	<b>\$10M</b>
<b>High Performers/ Potential NAS/NAE Faculty</b>	<b>\$1M</b>	<b>50</b>	<b>See above</b>	<b>3</b>	<b>\$3M</b>	<b>6</b>	<b>\$6M</b>
<b>Mid-Career Faculty Hires</b>	<b>\$.5M</b>	<b>100</b>	<b>Would need 250,000 s.f. more research space</b>	<b>10</b>	<b>\$5M</b>	<b>16</b>	<b>\$8M</b>
<b>Junior Faculty Hires</b>	<b>\$.02M</b>	<b>250</b>	<b>Would need 250,000 s.f. more research space</b>	<b>30</b>	<b>\$6M</b>	<b>45</b>	<b>\$9M</b>
<b>Soft Money Research Lines</b>	<b>\$.25M</b>	<b>200</b>	<b>Need transition funds to go to full soft-money support</b>	<b>30</b>	<b>\$7.5M</b>	<b>40</b>	<b>\$10M</b>
<b>TOTAL</b>					<b>\$28M</b>		<b>\$43M</b>

<b>Option</b>	<b>Growth Potential</b>	<b>#needed for \$50M</b>	<b>Comments</b>	<b>Likely in FY06</b>	<b>Likely Growth</b>	<b>Possible in FY06</b>	<b>Possible Growth</b>
<b>Current Junior and Senior Faculty Increasing Research Productivity by \$200K/ea.</b>	<b>\$.02M</b>	<b>250</b>	<b>Represents &gt; 10% of the current research faculty and almost 100% of the researchers with current expenditures &gt; \$150K</b>	<b>10</b>	<b>\$2M</b>	<b>20</b>	<b>\$4M</b>
<b>Increased Productivity from Faculty with low/no expenditures</b>	<b>\$.0025M</b>	<b>2,000</b>	<b>There are only about 1000 faculty lines</b>	<b>200</b>	<b>\$5M</b>	<b>400</b>	<b>\$10M</b>
<b>TOTAL</b>					<b>\$7M</b>		<b>\$14M</b>

Option	Growth Potential	# needed for \$50M	Comments	Likely in FY06	Likely Growth	Possible in FY06	Possible Growth
Strategic Partnerships LLC-like relationships	<b>\$2M</b>	<b>25</b>	Unlikely to manage/fund many relationships; currently funding SPLLC for social science/workforce opportunities – discussions have taken place about possible international leads	<b>4</b>	<b>\$8M</b>	<b>8</b>	<b>\$16M</b>

<b>Option</b>	<b>Growth Potential</b>	<b>#needed for \$50M</b>	<b>Comments</b>	<b>Likely in FY06</b>	<b>Likely Growth</b>	<b>Possible in FY06</b>	<b>Possible Growth</b>
<b>Large Grant Opportunities (FDC size)</b>	<b>\$7.5M</b>	<b>7</b>	<b>Limited number opportunities each year</b>	<b>1</b>	<b>\$7.5M</b>	<b>2</b>	<b>\$15M</b>
<b>Medium-Large Grant Opportunities (ERC size)</b>	<b>\$4M</b>	<b>13</b>	<b>Limited number opportunities each year</b>	<b>2</b>	<b>\$8M</b>	<b>3</b>	<b>\$12M</b>
<b>TOTAL</b>					<b>\$15.5M</b>		<b>\$27M</b>

Option	Growth Potential	# needed for \$50M	Comments	Likely in FY06	Likely Growth	Possible in FY06	Possible Growth
Acquisition of federal research labs (e.g., Warfighter Training Lab)	\$40M	1	Currently in play through BRAC comment process—beyond Warfighter Training Lab, not clear what the opportunities are	0	\$0M		
Incorporation of State Agency within ASU	\$25M	2	Requires political maneuvering; other state universities are home to state and federal agencies	0	\$0M	1	\$1M
ASU Foundation/ Philanthropic Grants Provide Research Revenue Investment	\$1M	50	Recent history has been very good (FSE, IIS, Piper)	2	\$2M	4	\$4M
Invest in other initiatives of magnitude similar to Biodesign	\$10M	5	Resources currently directed to Biodesign; would need other resource streams in the near term	0	\$0M		
<b>TOTAL</b>					\$2M		\$5M

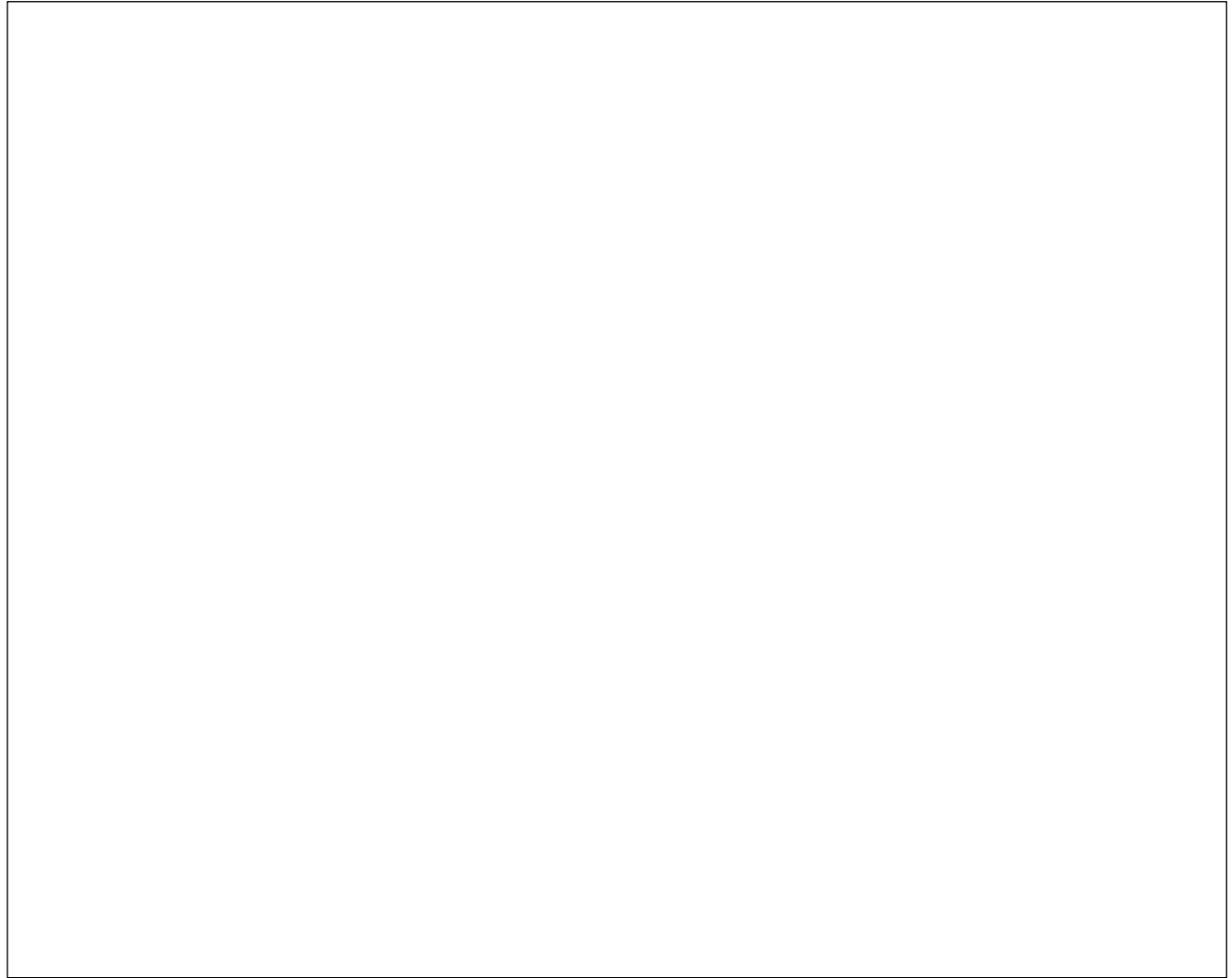
Funding Source/ ASU Initiative	Growth Potential FY05	Comments & assumptions
<b>High Probability of Success for FY06</b>		
<b>TRIF</b>	<b>\$2M</b>	<b>Assumes 7% growth rate + strong economy</b>
<b>Biodesign</b>	<b>\$5M</b>	<b>New faculty still coming up to speed, new grants beginning</b>
<b>Social Sciences</b>	<b>\$2M</b>	<b>Investment in Strategic Partnerships LLC will pay off</b>
<b>“Organic Growth”</b>	<b>\$7M</b>	<b>Non-stimulated growth based on FY04-05 change</b>
<b>PSERC (NSF)</b>	<b>\$2M</b>	<b>ASU chosen to be lead institution (Vittal/Heydt)</b>
<b>Total</b>	<b>\$18M</b>	

**What can OVPREA do to  
facilitate research growth?**



- **Better connect websites and messages**
- **Provide publicity through Research Publications office**
- **Help integrate different administrative levels**
- **Link researchers to Federal Relations offices**
- **Manage and improve “Community of Science”**
- **Executive Information Services (“Dashboard”)**
- **Proposal Machine**
- **Enhanced Administrative & Research Services (EARS)**

- **Invest in research areas with high growth potential**
- **Seed fund initiatives like humanities research, Piper Creative Writing Center, Center for Religion and Conflict, ConnectionOne**
- **Connect faculty with Economic Affairs team**
- **Organize specialized consultant support services**



- **Executive Information System: <https://eis.vprc.asu.edu/>**
- **Two web-based tools accessible from the same web site:**
  - Pre-Set Graphical Presentation (Executive Dashboard)**
  - Excel Compatible Data-Cube (Data Analyst Tables)**
- **Data is updated every night**
- **Accessible to all with an ASURITE ID**
- **Initial implementation in process of expansion**
- **Provides Chairs, Deans and Provost with objective measures for assessing research progress**



- **University**
- **College**
- **Department**
- **Researcher**

- **Proposal Machine launched in FY05**
- **Assists faculty groups in preparation of major proposals**
- **Proposals:**
  - John Crittenden's NSF ERC on Urban CyberInfrastructure**
  - Rick Shangraw's DHS Catastrophic Events Center**
  - USAF Warfighter Training Center proposal**
- **Headed by Ken Davis, former Motorola senior manager**

- **Environmental economics**
- **Personal power systems**
- **Human-machine interfaces of all types**
- **Sustainable energy sources**
- **Sensing networks at all scales**
- **Urban system resiliency**
- **Integrated nano-bio-cogno devices**
- **Health care delivery networks/systems**
- **Devices for operation in extreme environments**
- **Workforce issues**

- **Designed for researchers with most complex portfolios**
- **Goal is to reduce administrative red tape**
- **Helps OVPREA identify problem areas earlier**
- **Has buy-in from principal VP areas**
- **Gives P.I. single contact point to resolve admin issues**
- **Criteria: # different awards, total grant dollars, interdisciplinarity, # large proposals applied for, availability of other administrative support**
- **Not intended to be a reward for professional achievement or standing**



- **Faculty report to Chairs who report to Deans who report to Provost who reports to President**
- **VPR not in that chain**
- *Research goals must be a priority for all*

## ***Consultant***

**“There was one very important thing about your quest that we couldn’t discuss...”  
said King Azaz.**

**“I remember” said Milo eagerly. “Tell me now.”**

**“It was impossible,” said the king, looking at the Mathemagician.**

**“Completely impossible,” said the Mathemagician, looking at the king. “If we’d told you then, you might not have gone—and, as you’ve discovered, so many things are possible just as long as you don’t know they’re impossible.”**

***Management  
Text***