



2016-2017 Research Report to UKRF Board of Directors

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Vice President for Research



Format

- Review Strategic Plan for Research
- Review areas of emphasis for improvement from last year
- Presentation of research portfolio
- Update on RB2
- Presentation of FY17/18 budget



The Office of Research Team

- Martha Peterson, Senior Associate VPR
- Rodney Andrews, Associate VPR
- Allan Butterfield, Associate VPR
- Alan Daugherty, Associate VPR
- Unit Directors and Staff:

Kim Carter, **Helene Lake-Bullock**, **Kathy Grzech**, Jack Supplee and Judy Duncan, Billy Clark, **Ian McClure**, Alicia Gregory, Eric King, Hal Stills, **Bernard Doering**, Jennifer Miles, Katherine Adams, Baron Wolf, Mary Lowell
(names in bold were hired during FY16/17)



Research Strategic Plan

Expand our scholarship, creative endeavors, and research across the full range of disciplines to focus on the most important challenges of the Commonwealth, our nation, and the world.

- I. Invest in UK's existing strengths and areas of growth in selected focus areas that benefit and enrich the lives of the citizens of the Commonwealth and beyond.
- II. Recruit and retain outstanding faculty, staff and students that support our research and scholarship across the range of disciplines at the University.
- III. Improve the quality of the research infrastructure across campus.
- IV. Strengthen engagement efforts and translation of research and creative work for the benefit of the Commonwealth of Kentucky, the nation and the world.



**From last years presentation:
Areas of emphasis for the research enterprise**

- Implement strategies to meet strategic plan goals
- Revise structure/offerings of Proposal Development, Office of Technology and Commercialization
- Hire new Directors of admin units/centers
- Negotiation of new F&A rate
- Implement policies/procedures and plan for RB2

How are we doing?

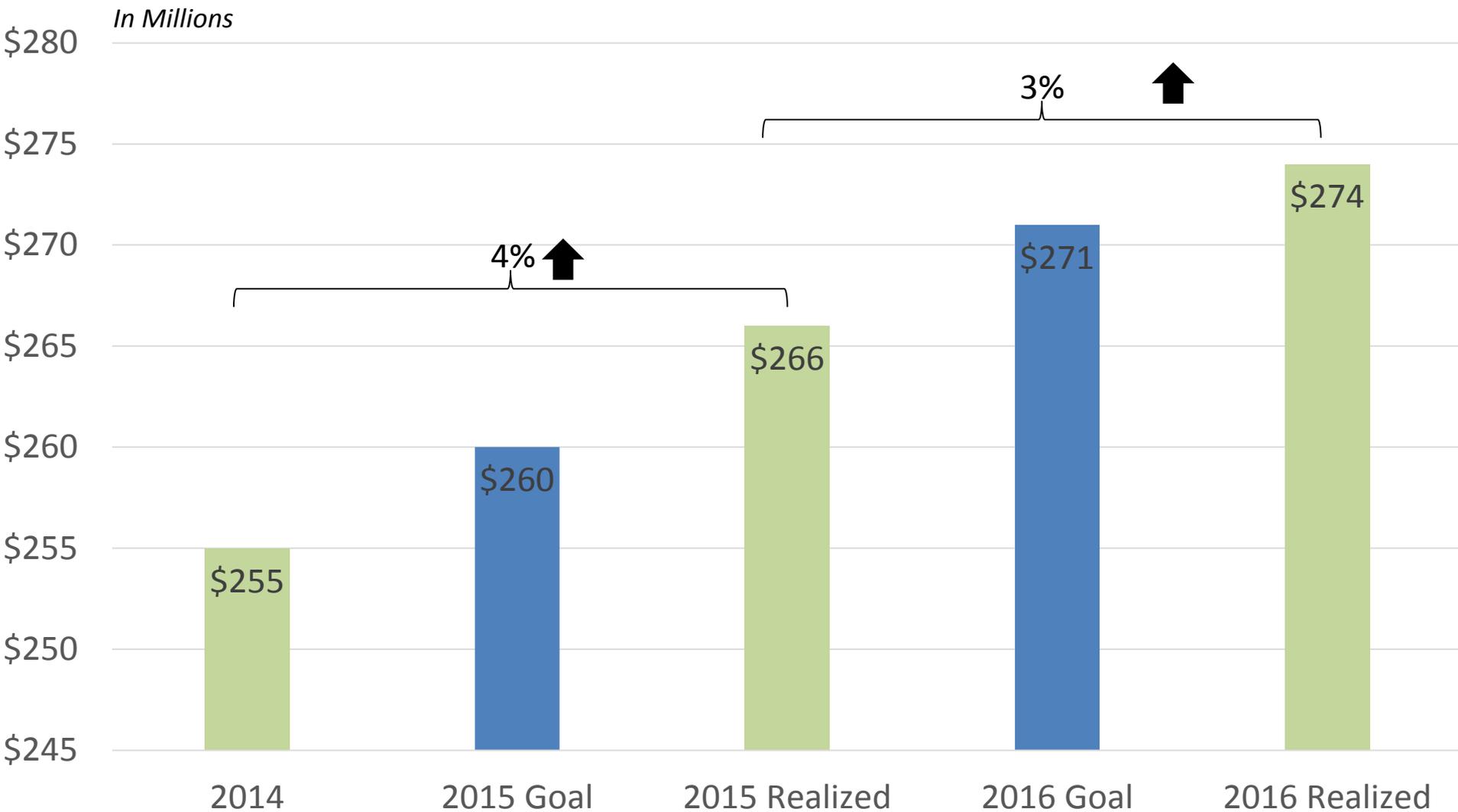


Expand our scholarship, creative endeavors, and research across the full range of disciplines to focus on the most important challenges of the Commonwealth, our nation, and the world.

- Overview of research at UK
 - Institution supports salary for research mission of faculty.
 - Faculty compete for grants and contracts to support their research (including part of their salary).
 - Institution receives facilities and administrative (F&A) costs from R&D expenditures from grants and contracts.
 - F&A is used to support the research mission, and constitutes the UKRF budget.
 - Thus, extramural funding (grant awards and expenditures) is a high level metric of research.



Metric: Research and Development Expenditures; Strategic Plan Goal = 1.9% increase/year



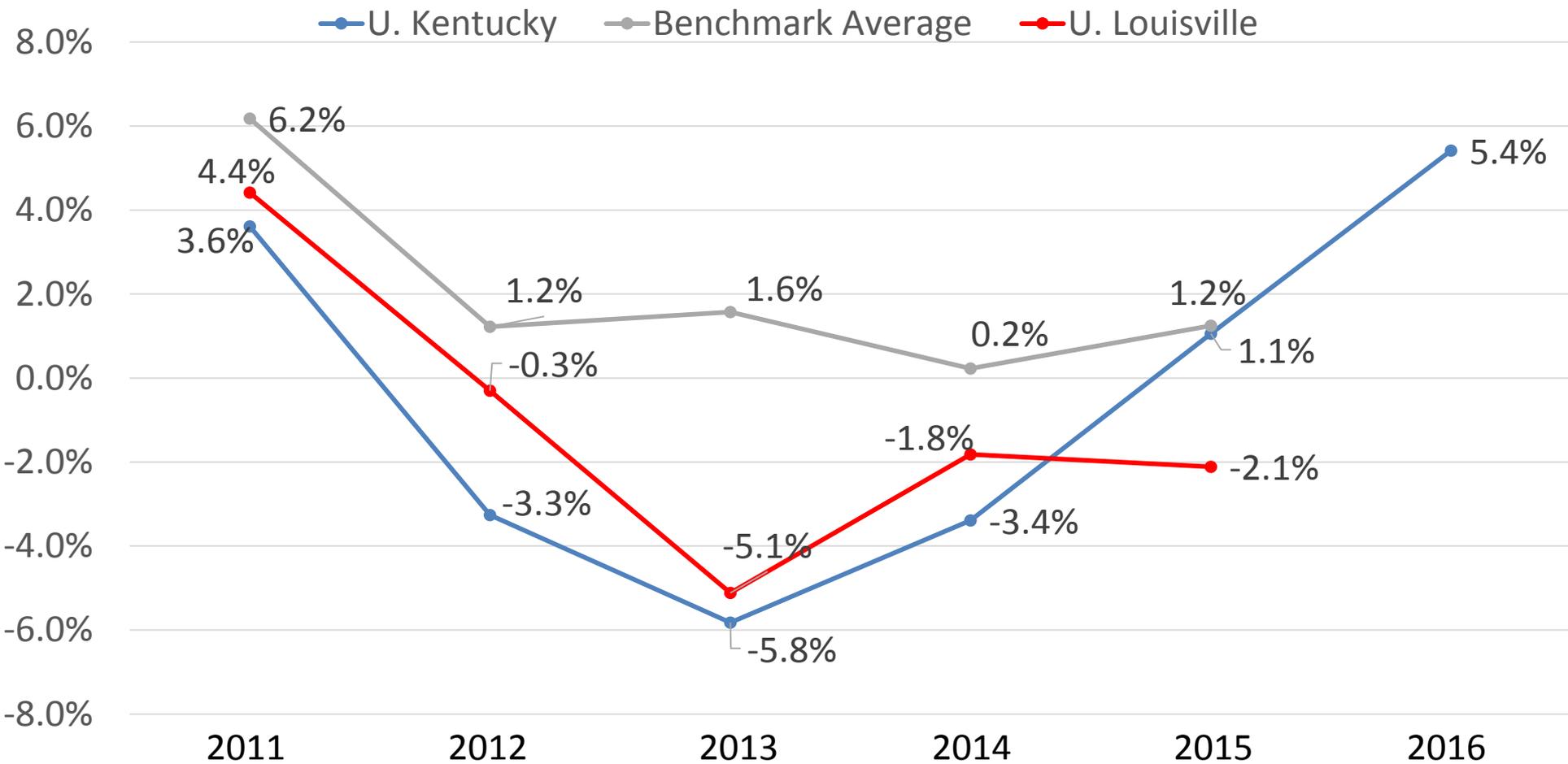
Source: University of Kentucky, OSPA database.



To put this into perspective, this is our longitudinal % change in R&D expenditures compared to benchmarks

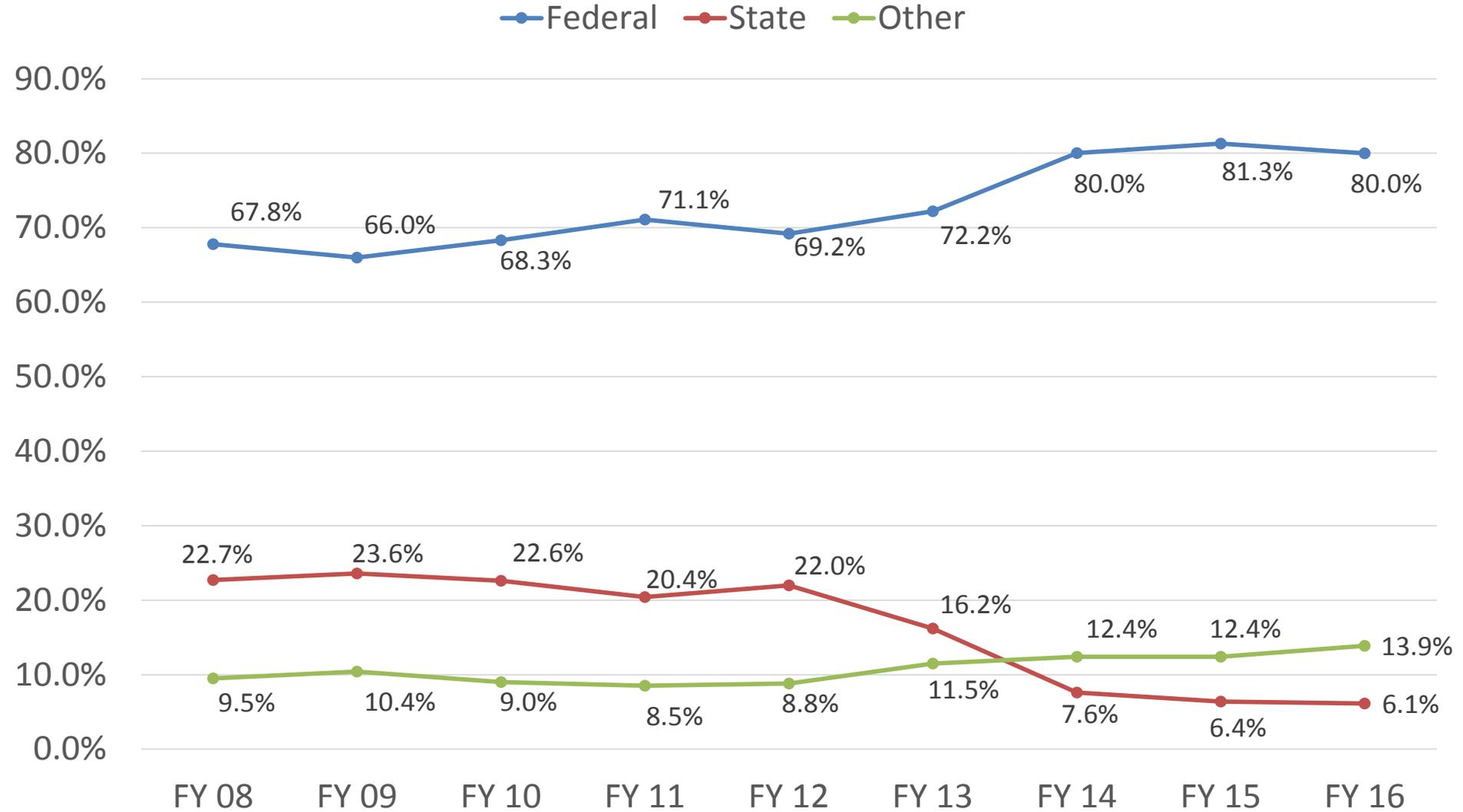


Annual % Change in R&D Expenditures





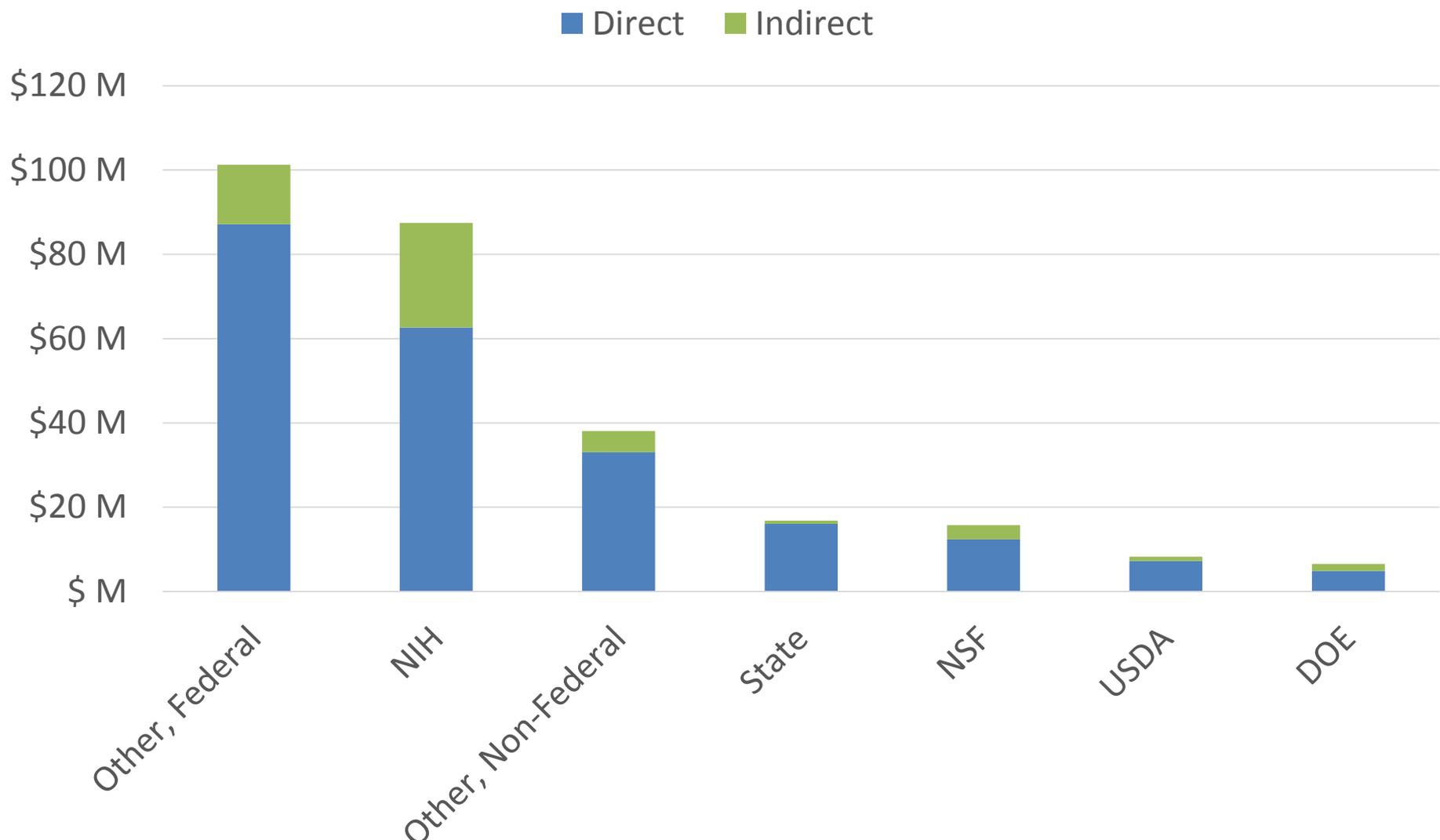
A Closer Look at R&D Expenditures: We continue to be a federally funded research enterprise



Source: University of Kentucky, OSPA database.



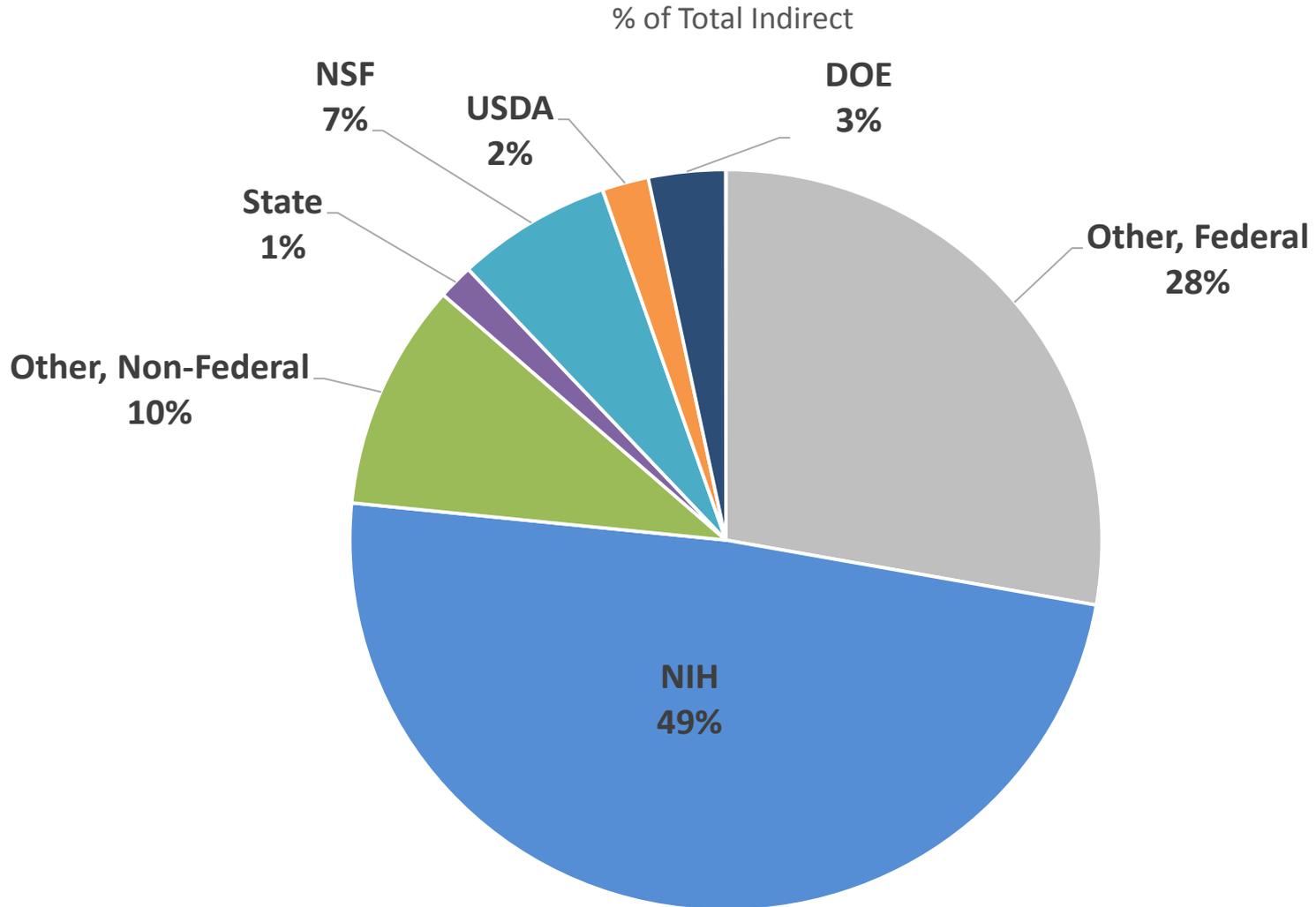
NIH is the largest source of F&A to the UKRF budget (2016)



Source: University of Kentucky, OSPA database.



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This year, we negotiated a new F&A rate

- This occurs every 3-4 years. Rates are calculated by UK according to federal rules and using audited UK financial data.
- Submitted to HHS or other cognizant agency.
- These are costs (infrastructure and operational) that the university would not otherwise incur except for performing the outlined research.
- They are not specific to any project.



Definition of F&A

- Facility (F) costs include utilities, depreciation (buildings and equipment), interest on debt for buildings, library expenses.
- Administrative (A) costs include financial management of grants and contracts, staff/supplies, sponsored programs. These are capped at 26%.
- These costs come to the institution based on allowable R&D expenditures.



New F&A on campus rates

| | Previously negotiated FY11 | Proposed FY15 Proposal | Negotiated |
|-----------------------------|-------------------------------|---------------------------|-------------|
| Fiscal Year | FY 16-17 | | FY 18,19,20 |
| Instruction | 46.0% | 51.3% | 46.0% |
| Organized Research | 50.5% | 54.7% | 53.0% |
| Agriculture Research | 40.0% | 50.8% | 45.0% |
| Other Sponsored Activity | 31.5% | 35.4% | 34.0% |



Future impact of increased F&A rates on UKRF

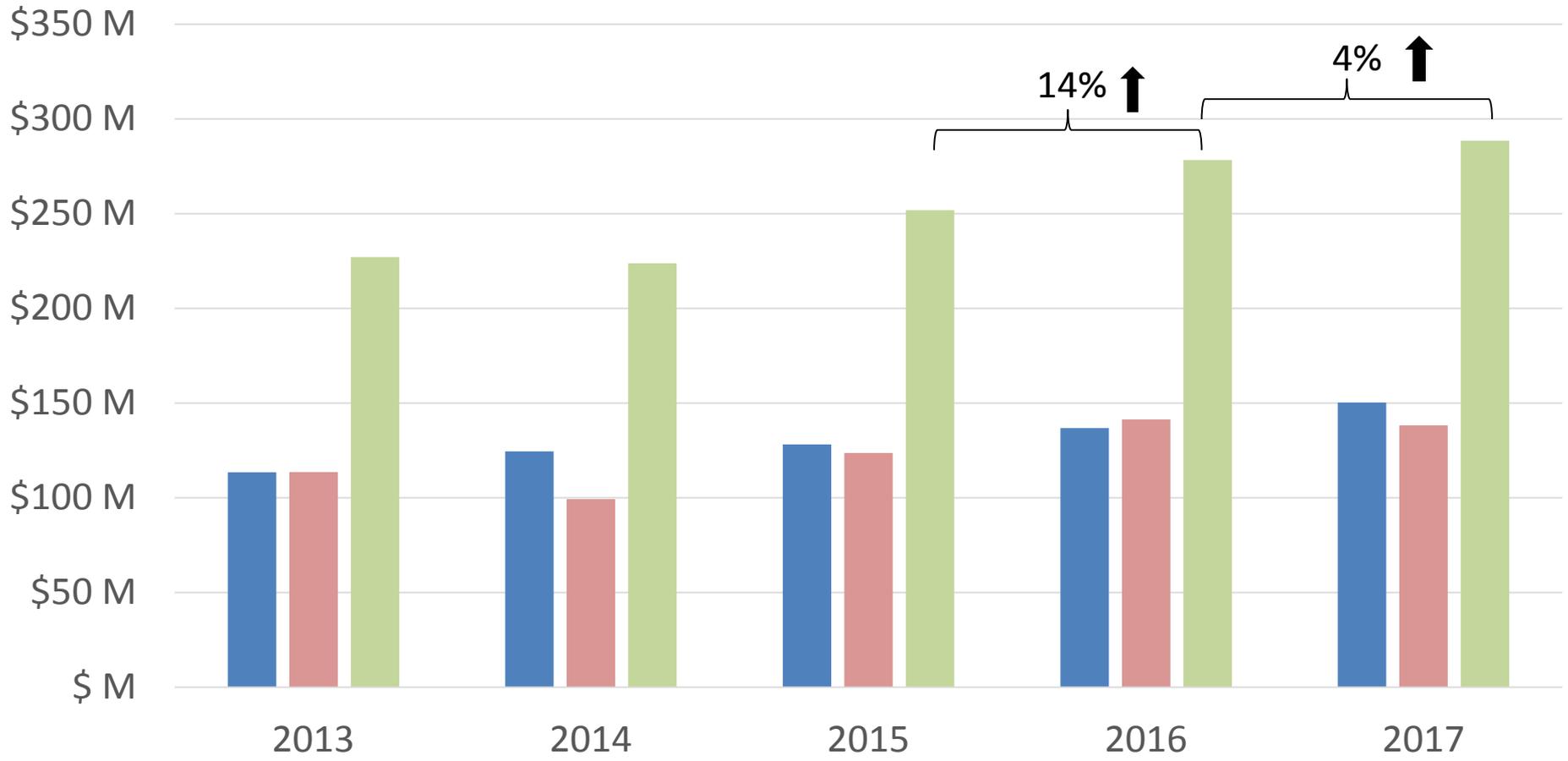
- If our research base remains flat = \$2,219,659 more in F&A/year for the next 3 years, total increase of \$6.6 million.
- Is our research base remaining flat?
- Thanks to Jennifer Miles and her team for their outstanding work on the F&A rate.



Our Progress thus far in 2016/17: Grant award data

(July - April, 2017)

Federal Non-Federal Total



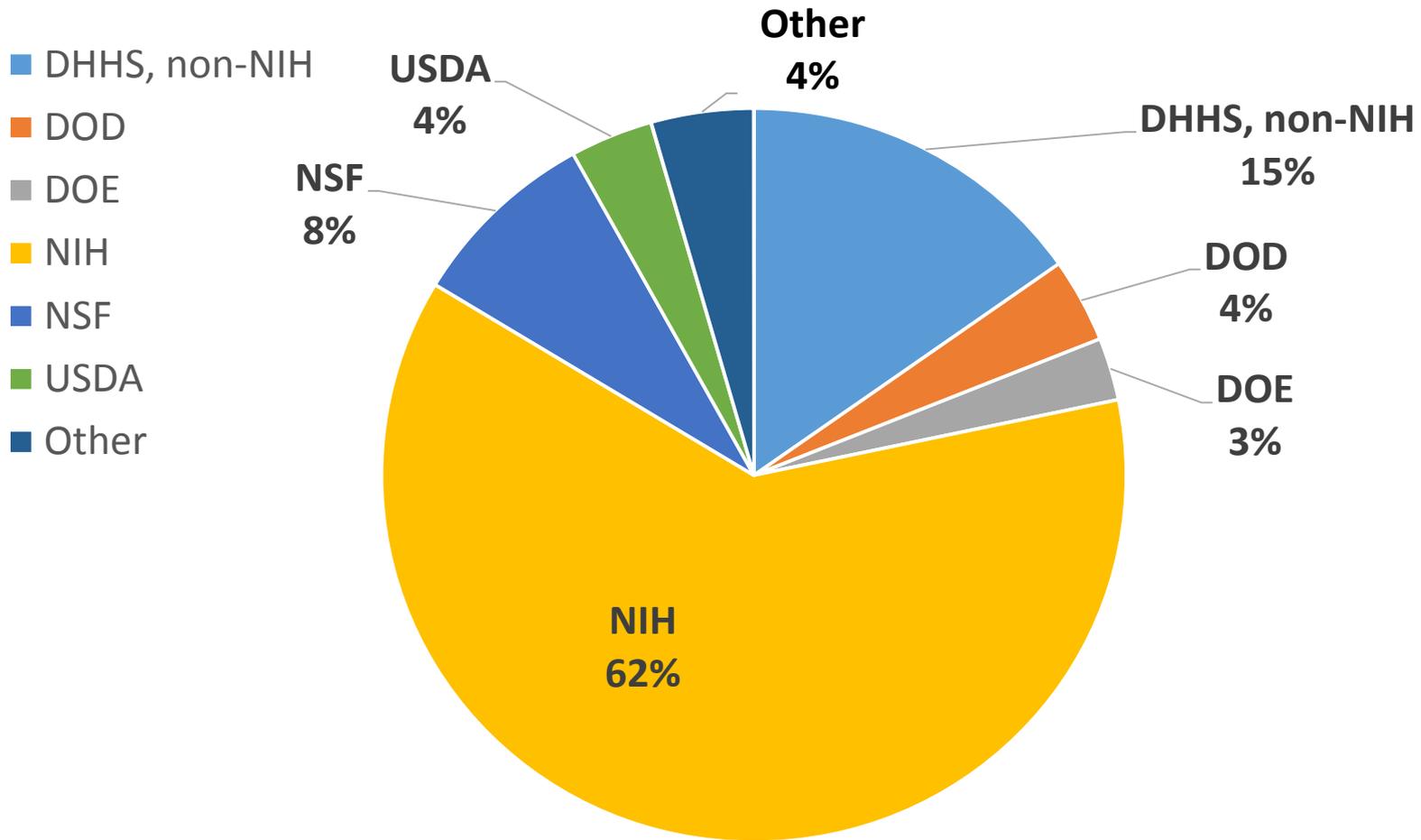
10% increase in federal compared to last year
2% decrease in non-federal

Source: University of Kentucky, OSPA database.



Source of Federal Awards

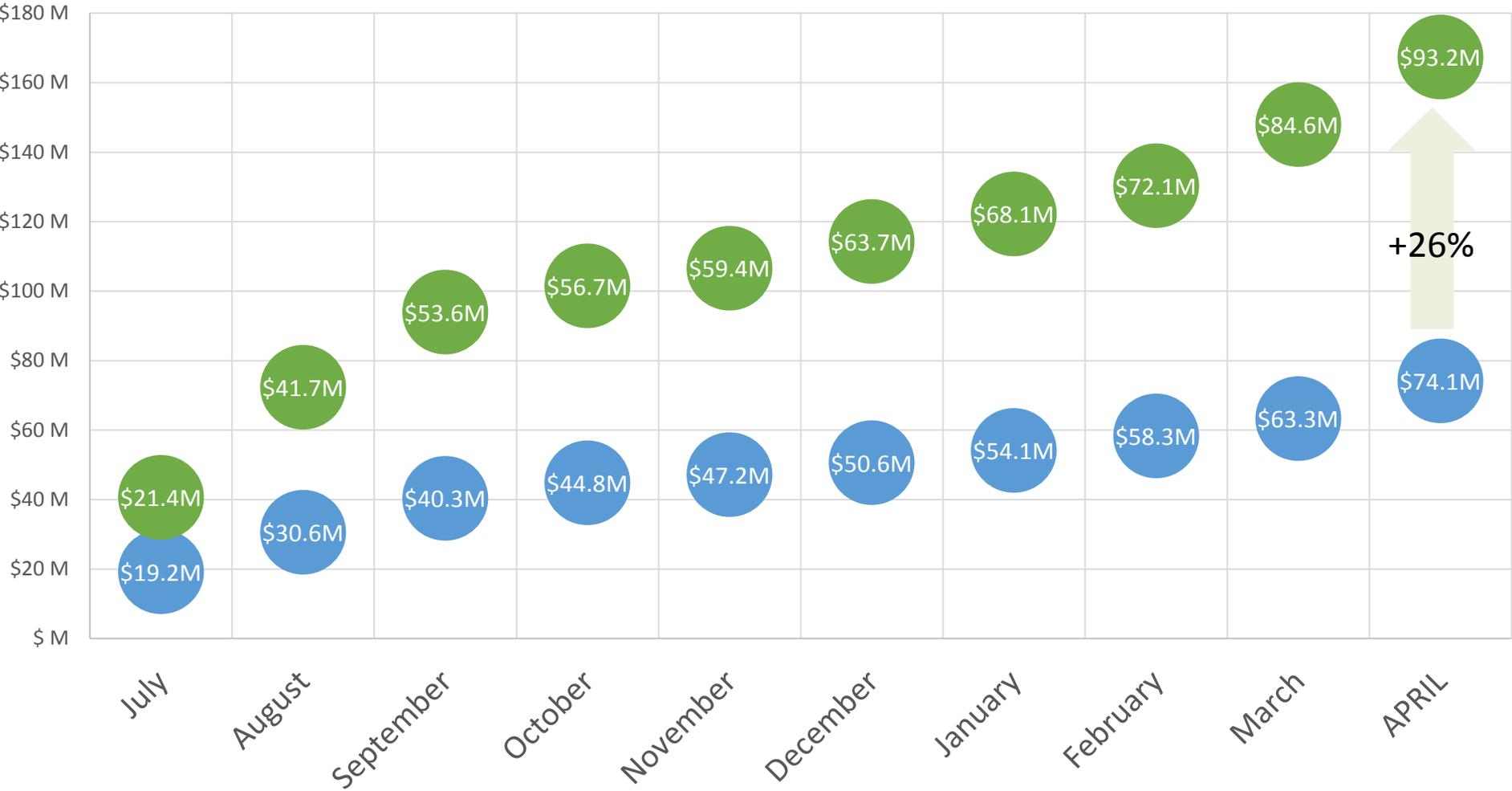
FY 2017 as of April 30th





NIH Award Funding FY 16 Compared to FY 17 YTD (July through April)

● 2016 ● 2017

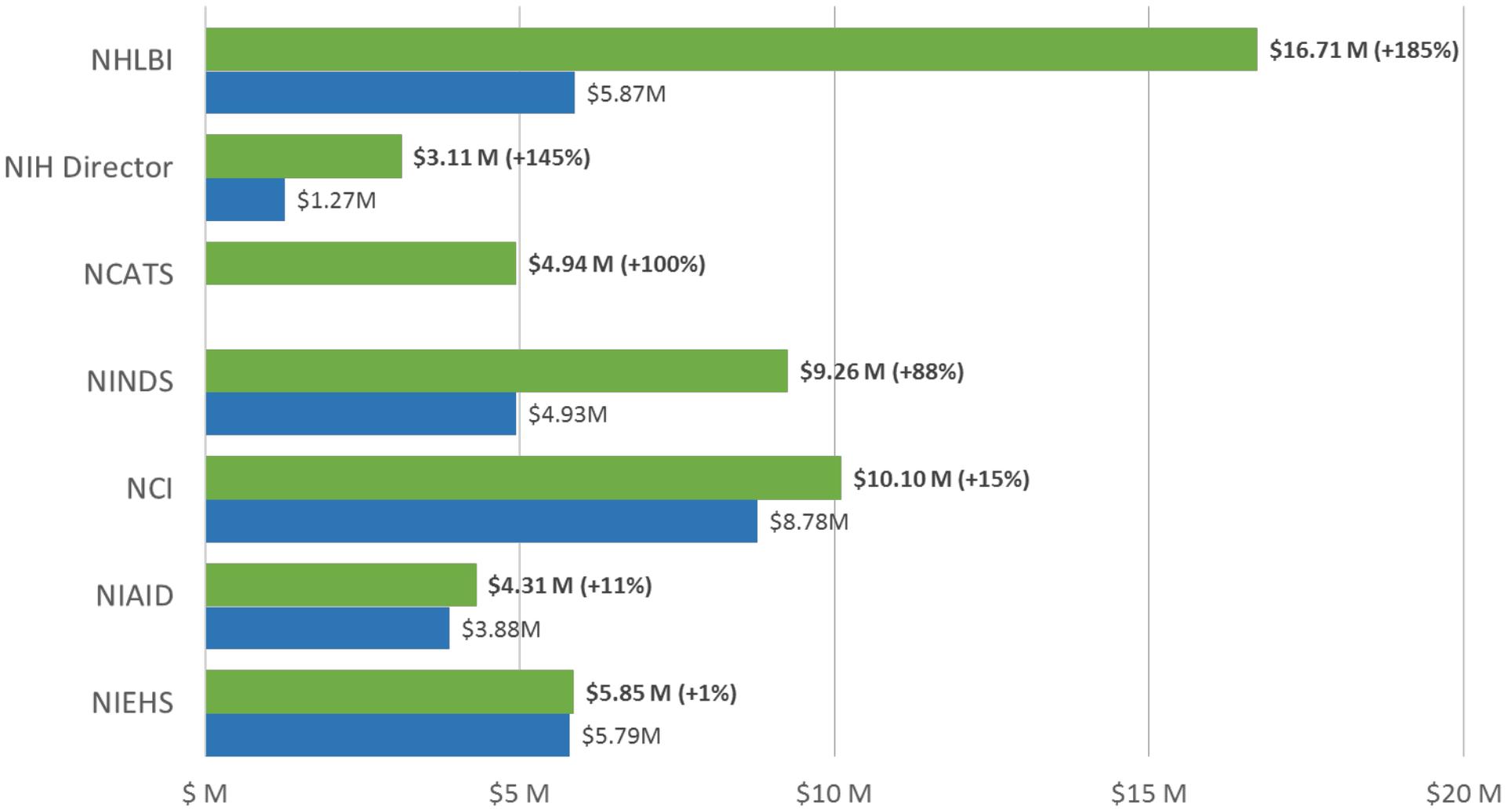


Source: University of Kentucky, OSPA database.



Largest NIH Increases from FY 16 to FY 17 YTD (July through April)

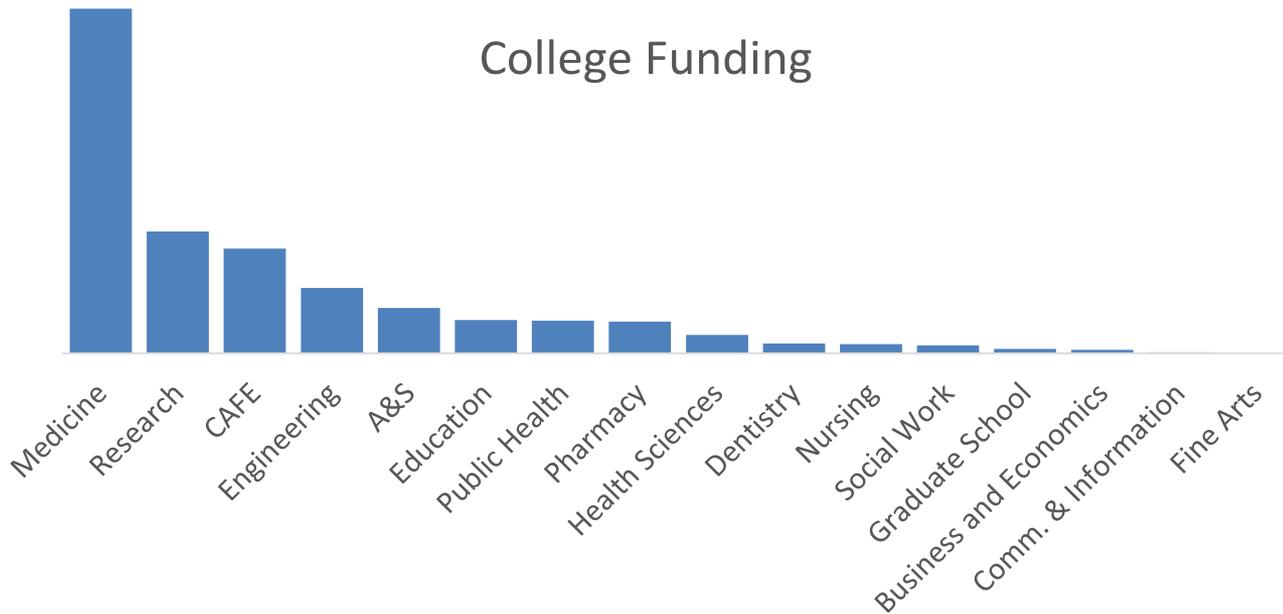
■ 2017 ■ 2016



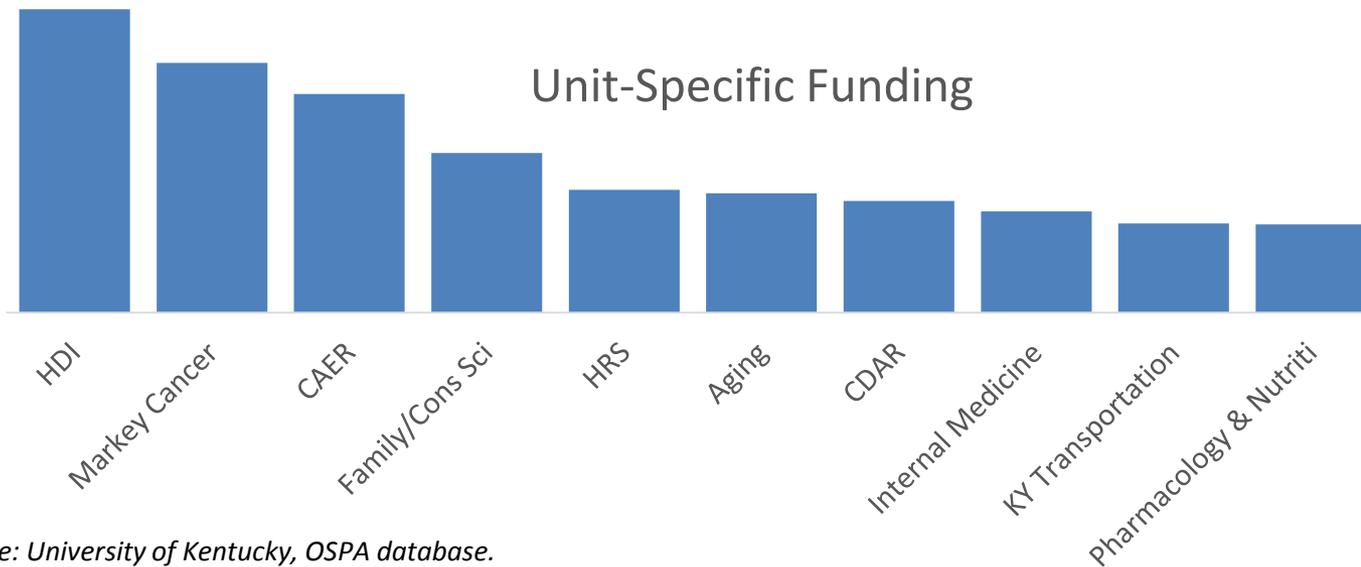
Source: University of Kentucky, OSPA database.



College and Unit-Specific Funding



- Medicine is the largest funded unit at UK (41% of total awards)
- Research includes our Centers and Institutes



- 7 out of 10 of these units are multidisciplinary Centers

Source: University of Kentucky, OSPA database.



New grant awards

- NIH Clinical and Translational Sciences Award (CTSA): Phil Kern, \$4.9 million.
- NIH Heart Lung and Blood Institute: Dean Donna Arnett (Public Health), 2 large NIH grants (total of \$10.7 million).
- NIH Center of Biomedical Research Excellence on Cancer Cell Metabolism: Daret St. Clair, \$11.2 million.
- NIH Program Project Grant on Childhood Epilepsy: Matthew Gentry, \$1.85 million.
- NIH Environmental Health Sciences Center: Xianglin Shi, \$1.5 million.
- NSF, Research Data Center: Jim Ziliak, \$300K.
- NSF, NASA, DOD: Several new grants awarded to chemistry faculty (John Anthony, Chad Risko, Steven Yates, Beth Guiton, Thomas Balk, Jason DeRouchey)



Patent & Licensing Stats

| Metric | 2014 | 2015 | 2016 | FYTD17 |
|---------------------------------|----------------|----------------|----------------|----------------|
| Invention Disclosures | 86 | 55 | 53 | 45* |
| Patent Applications | 23 | 9 | 17 | 5** |
| Patents Issued | 30 | 32 | 30 | 33 |
| New Licenses & Options Executed | 9 | 4 | 9 | 9*** |
| Gross Royalty Income | \$3,317,184.82 | \$1,007,630.04 | \$6,563,189.55 | \$2,246,813.61 |

*36 in Q2 and Q3

**Does not include provisional patent applications; filing more provisionals has become an intentional strategy because we now have the resources to get market feedback within 12 month provisional period; we have filed 15 provisional patent applications in FY17

***110 currently active license and option agreements in total (due to an ongoing license audit process, some agreements may be terminated due to licensee inactivity or missing reporting obligations)



Changes to Proposal Development (PDO), Office of Technology and Commercialization (OTC)

- Evaluated structure of these units, proposed changes as follows:
- PDO
 - Hired new Executive Director = Kathy Grzech, additional staff
 - Funding agency-specific expertise
 - Switch from reactive to proactive approach
 - New software under development to seek proposal funding opportunities and identify collaborators
- OTC
 - Hired new Director = Ian McClure, additional staff
 - Faculty and staff education
 - Launched OTC Student Fellows Program (in house market assessment)
 - New invention management system for tracking activity, new externally searchable technology database
 - Completing patent portfolio assessment and license audit



New Leadership in the Research Enterprise

- Executive Director of Research Integrity: Helene Lake-Bullock
- Attending Veterinarian: Hal Stills
- DLAR Director: Bernard Doerning
- New Center Directors:
 - Kentucky Geological Survey: Bill Haneberg
 - Tracy Farmer Institute for Sustainability of the Environment: Rebecca McCulley

RB2





Features of RB2

- 6 floors of wet lab space, 96 PIs, over 500 personnel, neighborhood design to promote collaboration
- 4 floors of dry lab space (Appalachian Translational Trail), 24 PIs
- Phase 1: 2 floors of wet and dry lab space
- Connects to BBSRB, Biopharm



Health Disparities in Kentucky

| Condition | US Rank for Kentucky (1 = low prevalence, 50 = high prevalence) |
|-----------------------|---|
| Obesity | 46 |
| Diabetes | 47 |
| Drug deaths | 48 |
| Cardiovascular deaths | 43 |
| Cancer deaths | 50 |
| All outcomes | 45 |



Within each theme, use the template to document focus area plans

Template

(Name of Focus Area)

Current State

Future Plans

Expected Impact

Faculty / Staff Participating and Transdisciplinary Efforts

- *Who are the Faculty and staff members currently involved in this area of research?*
- *Are there any transdisciplinary efforts (e.g., working with faculty from other departments, clinical and basic science collaborations, etc.)?*

- *What Faculty and staff should be involved in this research?*
- *What additional transdisciplinary efforts and grant proposals can we submit?*

Research Topics and Funding Sources

- *What topics / projects are currently being explored by Researchers in this area?*
- *What are the major funding sources of this research?*

- *What topics should the Research Area pursue in the future?*
- *What does the funding landscape look like for these topics? Should we explore funding from additional, relevant areas outside of traditional government avenues?*

- ***Expected Impact if future plans are realized and appropriately resourced (e.g., \$X increase in grant funding, X% increase high impact journal publications, etc.)***

Facilities / Equipment

- *What are the critical facilities and / or equipment currently being used to explore research questions in the Research Area?*
- *Do researchers in this area have consistent access to these facilities?*

- *Given that resources and space can be difficult to source, what additional facilities and / or equipment would be necessary to pursue the proposed research topics? Do other departments or research areas have similar equipment that we could use?*

Critical Resources and Needs

- *What are the critical resources without which current research in this area would not be possible? Are the resources stable (e.g., no concerns of access being limited)?*
- *What resources are needed to continue current progress on existing research topics?*

- *In order for this Research Area to be successful in the proposed research topical areas, what are the critical resource needs?*
- *What is the justification for these resource needs? Can they be leveraged across the Enterprise to help other investigators?*



Implementation Strategies

- Formulaic Start-up (20% of budget)
- Creation of formulaic support for creative work not amenable to external funding
- Revision of Research Professorship program
- Research Core Advisory Committee
- Equipment Competition
- Revision of DC reception
- Hosted visits of NIH Directors at UK
- New research workshop offerings
- Top funded researcher forums
- Competition for New Centers and Institutes



**From last years presentation:
Areas of emphasis for the research enterprise**

- ✓ • Implement strategies to meet strategic plan goals
- ✓ • Revise structure/offerings of Proposal Development, IP/TTO
- ✓ • Hire new Directors of admin units/centers
- ✓ • Negotiation of new F&A rate
- ✓ • Implement policies/procedures and plan for RB2



Areas of emphasis for FY18/19 for the research enterprise

- Thematic coordination efforts for RB2
- Business plan for the research enterprise (strategic growth, use and flow of F&A)



UKRF FY16/17 Budget

- To date, we have realized \$42,992,562 through April 2017.
- Annualized, this comes to \$51,591,074. As our budget in FY16/17 was \$45 million, we will realize (and exceed) this fiscal years budget.
- 2017/18 Proposed Budget: **\$47 million.**



Page 1: Revenues (major changes)

- II.B. Royalty Income: Decrease of \$2.5 million.
- II.C. Private Gifts: Increase of \$2,500
- IV. Appropriated fund balance, unrestricted
 - A. Royalty Income: \$7.3 million decrease
 - B. Faculty Research Program: \$20 million (fund balances)
 - C. Miscellaneous: \$3,996,985
 - D. Contingency Reserve: Increase of \$200K (10% of UKRF \$47 million budget).
 - E. Research Building II Overrun: \$3.2 million



Page 2: Transfers to General Fund (major changes)

- 1.A.2. Service Assessment: +\$200,400
- 1.A.7. Controller's Office, +\$7,500
- 1.A.8. Federal Relations, +\$235,000
- 1.B.1 Research Admin/Personnel Support +\$233,800
- 1.B.2. College grant officers, +\$4,900
- 1.B.3. Technology Transfer, +\$418,200
- 1.E.1. Debt service, -\$668,915 and +\$3,400



Page 3: Expenditures (major changes)

- II.A.3. College grant officers, -\$263,100
- II.A.5. Tech transfer, +\$63,700
- II.A.6. Research communications, -\$10,000
- II.A.7. Discretionary, +\$9,000
- II.A.9. UK animal care office, +\$15,900
- II.A.10. OVPR office, -\$5,000
- II.A.11. M&O, BBSRB, HSRB, +\$12,000
- II.A.13. PDO, +\$300
- II.A.14. ORI, -\$5,000
- II.A.15. SPA/Controller, -\$167,500
- II.A.16. ASTeCC, +\$75,000



Page 3: Expenditures (major changes)

- IIB.1 Contingency (\$200K): 10% of new budget
- IIB.2 Private Gifts (-\$101,500)
- IIB.3 Patent Costs (-\$938,000)
- IIB.4 Royalty Income (-\$8.862 million)



Page 3: Expenditures (major changes)

- IIC.1a Residual start-up (\$1,644,300): Remaining commitments
- IIC.1b Faculty start-up (\$400,000): 20% of this year's budget
- IIC.2 Enrichment (\$662,000): Increase based on increased funding
- IIC.4 Grant related support (\$1,251,400): Matching institutional support
- IIC.6 Initiatives (-\$120,300): Reduced funding of leases
- II.C.7. Strategic Investment Fund (\$2,000,000)
- IIC.8 Fund balance (\$20 million): Residual funds in enrichment, faculty start-up
- II.C.9. RB2 overrun (\$3.2 million)