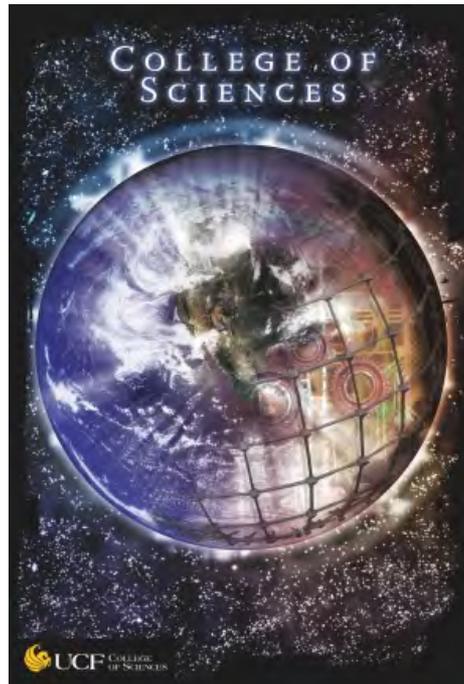


# College of Sciences Dean's Report

January, 2017



# Outline

- I. Trends
- II. Priorities and Progress
- III. New environment
- IV. Looking forward

# I. Trends

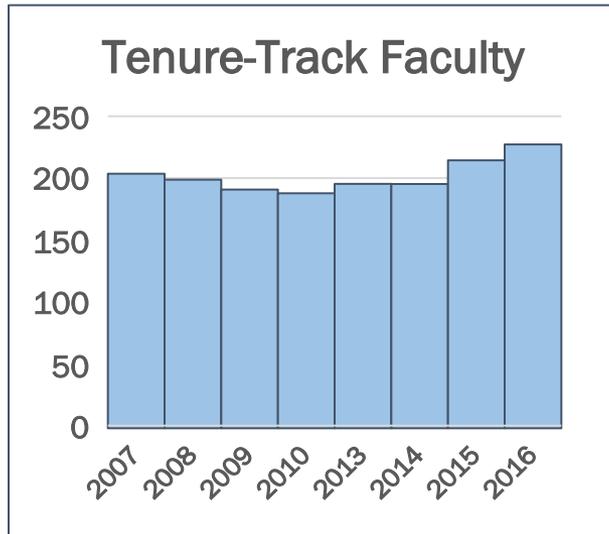
# Budget: Stabilized and Now Increasing

- State cuts during the great recession totaled ~\$5M for COS
- We managed the budget shortfall by careful spending reductions and the use of nonrecurring funds such as carry forward
- Enrollment growth and tuition increases gradually reduced the recurring deficit
- The shortfall continued from 2007-08 until 2014-15, when a final adjustment for growth closed the gap and left us financially stable for the first time since the recession began
- This era left stresses (e.g., student growth without corresponding faculty growth) that are not yet entirely resolved

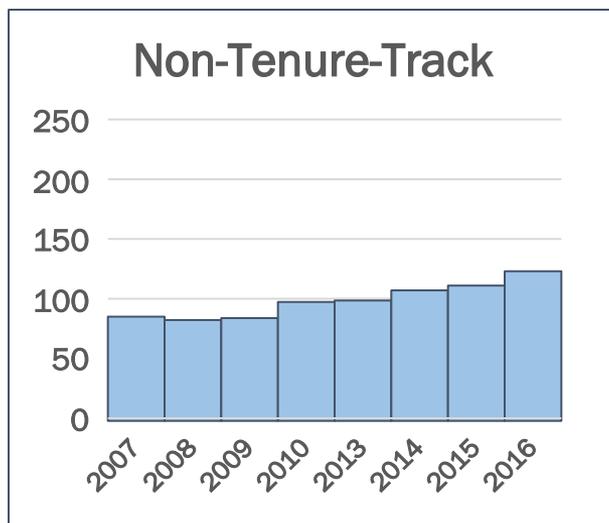
# Budget: Stabilized and Now Increasing

- By FY 2016 almost \$10M or 18% of the college's budget came via Regional Campus funds supporting mostly on-line teaching; as of this year nearly all of this has rolled into our base allocation from the university, increasing our budgetary stability and ability to plan
- Even during the financially tough years, faculty college-wide worked to improve their programs. Investments with the limited funds available prepared several programs for new opportunities (e.g., Security Studies, Hispanic Media, Data Analytics, Anthropological Sciences, Strategic Communication, SOTL research)
- Budget increases of \$4M during the last two years have allowed us at last to add faculty and staff, to take advantage of the opportunities mentioned above and otherwise improve our offerings
- Changes in how the state allocates funding to universities, and the university to the college, will be important for future plans and direction (more on this later)

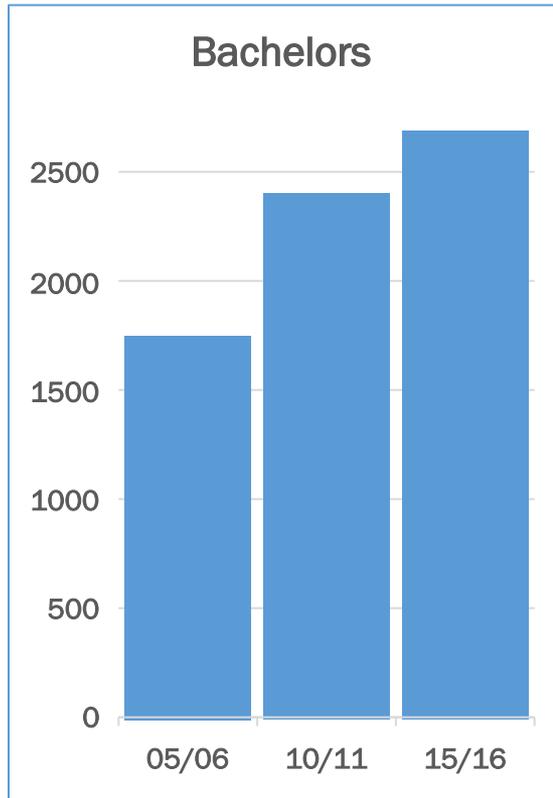
# Faculty Now Beginning to Grow



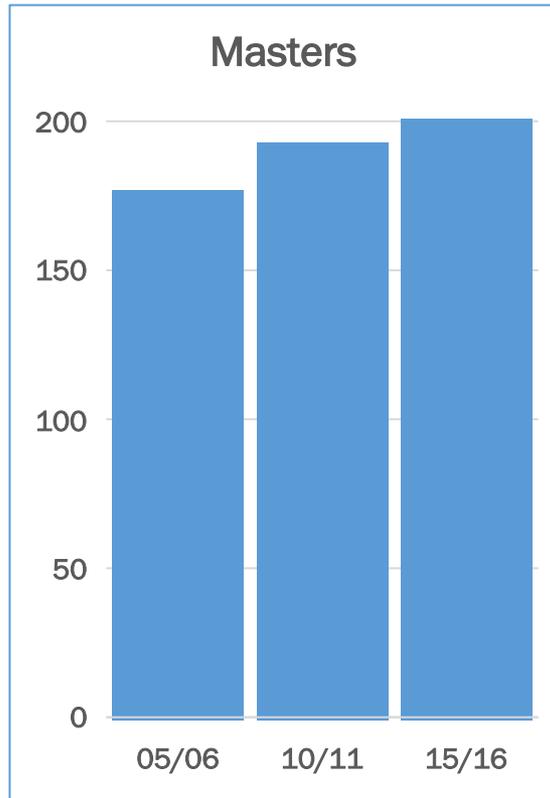
- The number of tenure-track faculty decreased in many recent years, purely for budgetary reasons
- In the past two years we caught back up and began to grow tenure-earning ranks
- Instructors and Lecturers have allowed us to handle the increasing teaching load while preserving research and graduate programs



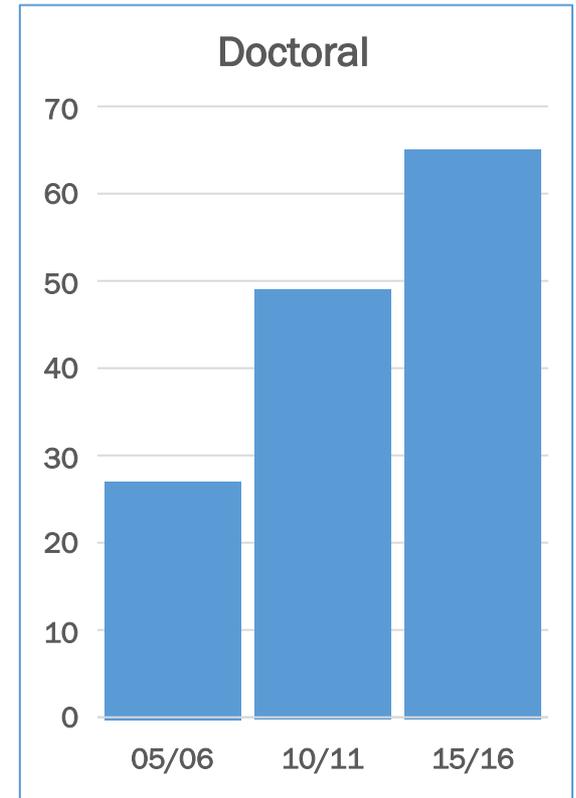
# Degrees Awarded Continue to Rise



**+54%**



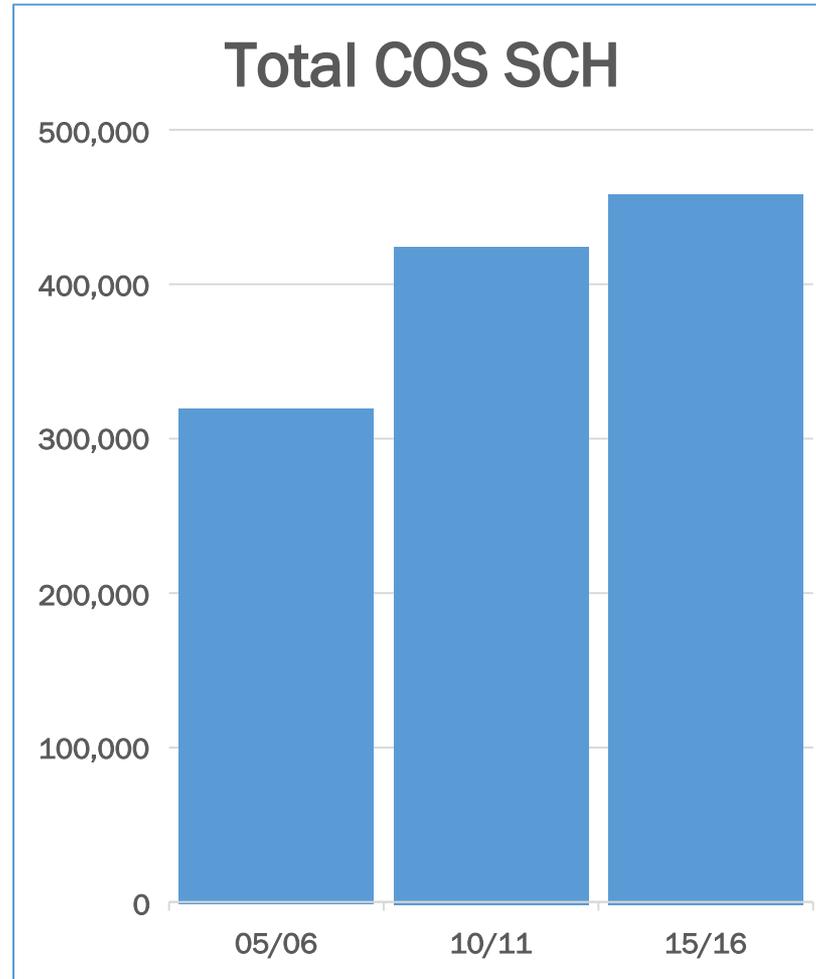
**+14%**



**+141%**

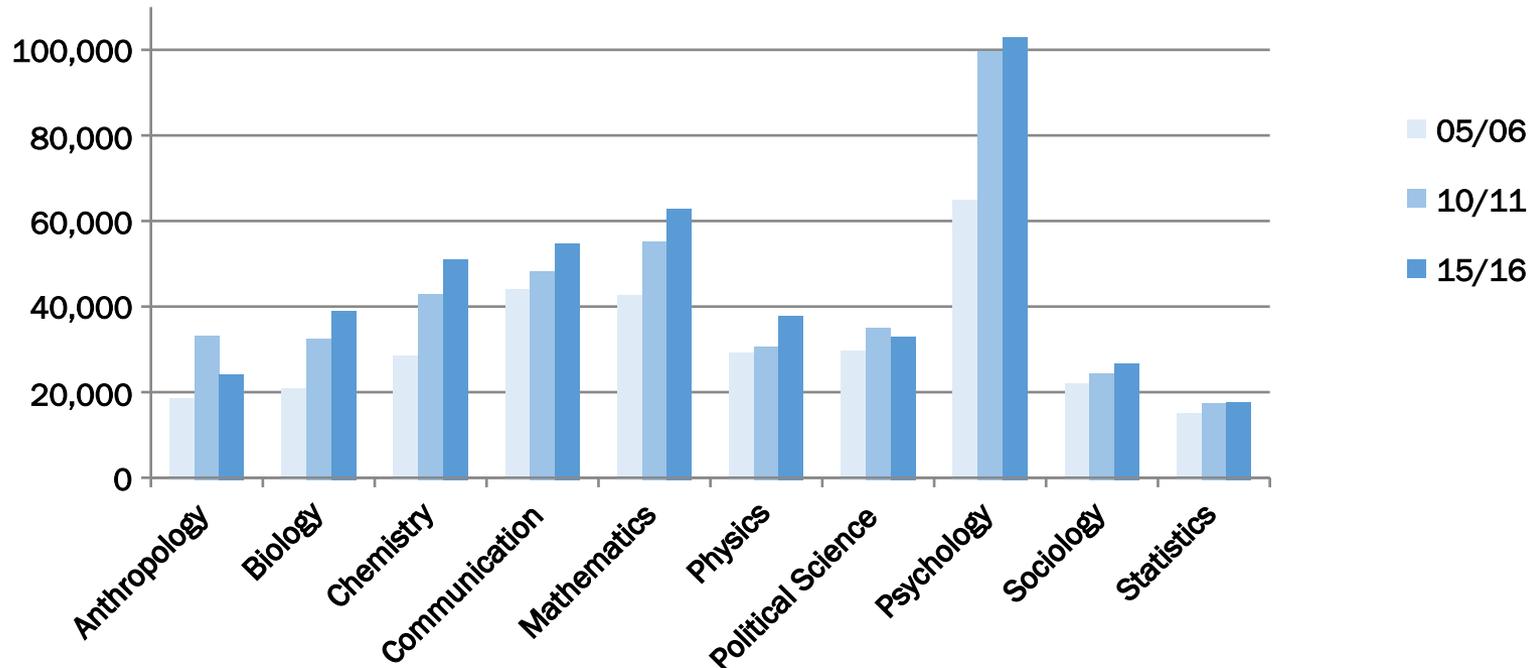
(10 year percentage changes)

# Teaching Up 44% in Ten Years

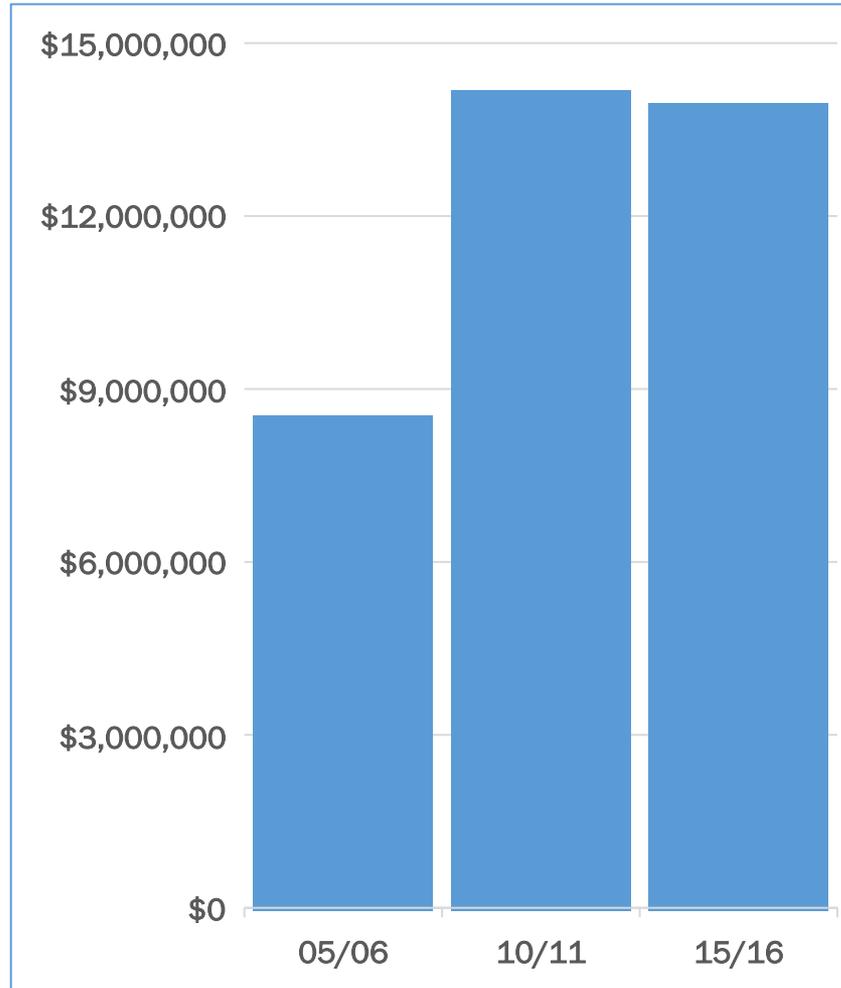


# Teaching by Department

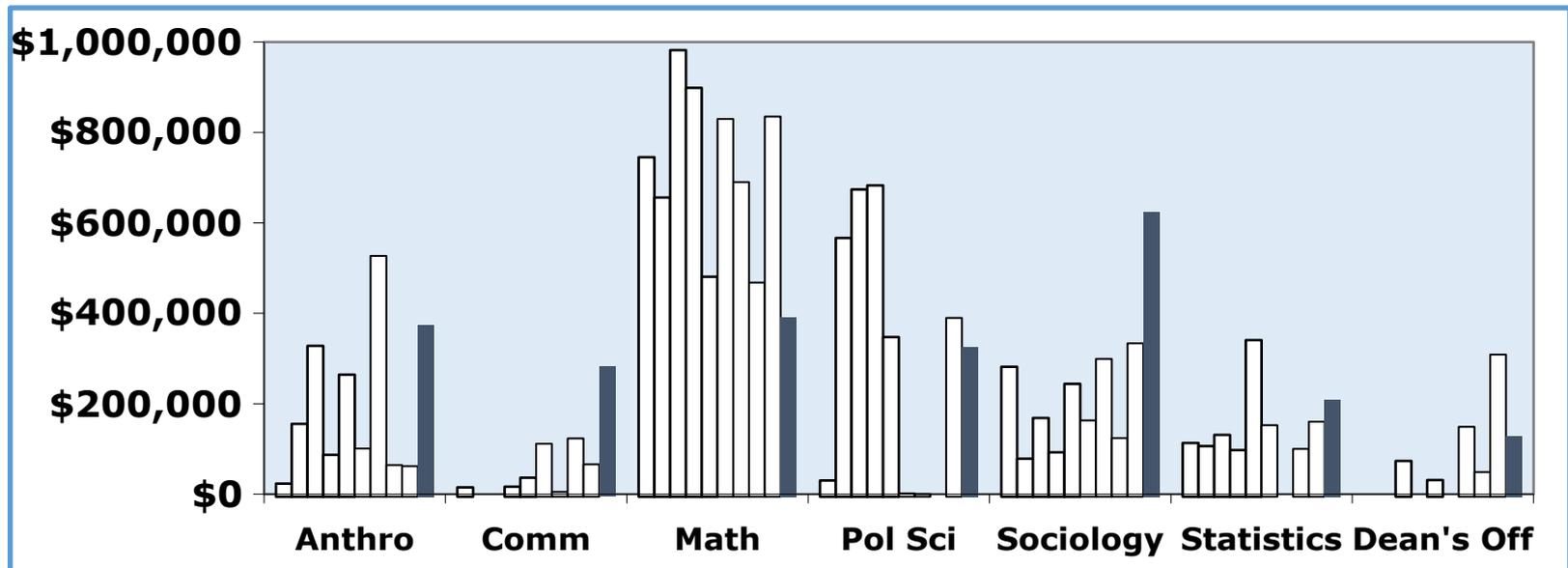
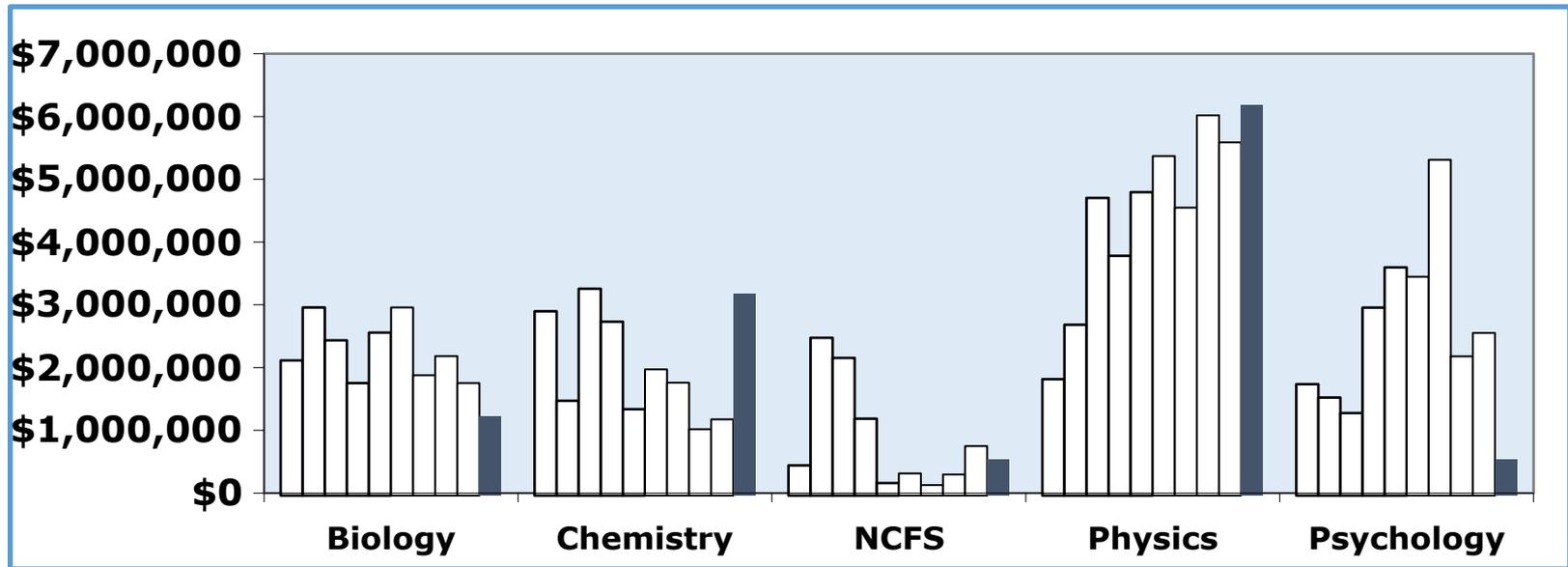
Teaching Load (SCH) by Department



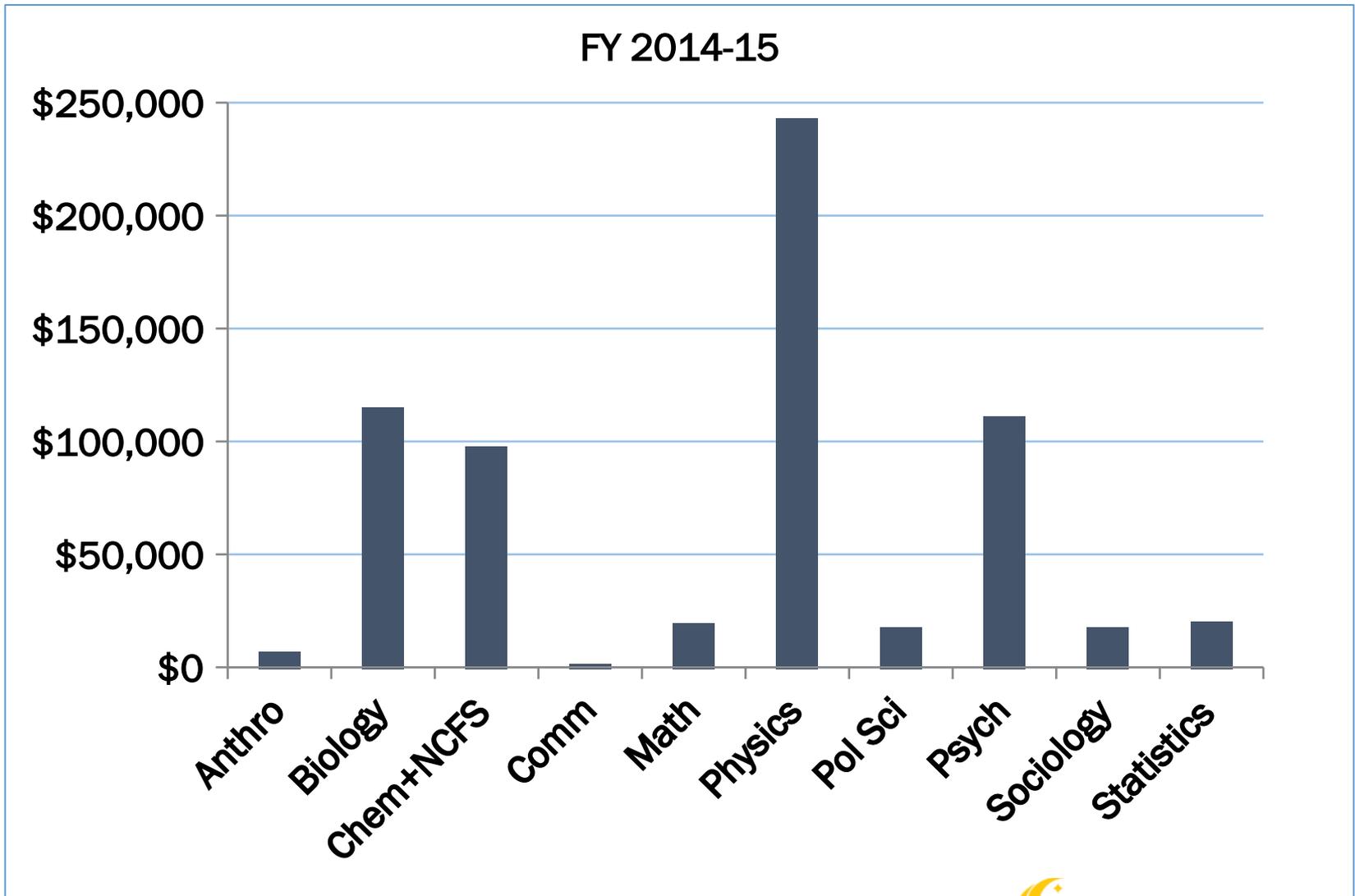
# New Grants by Fiscal Year



# New Grants FY 2007 to 2016

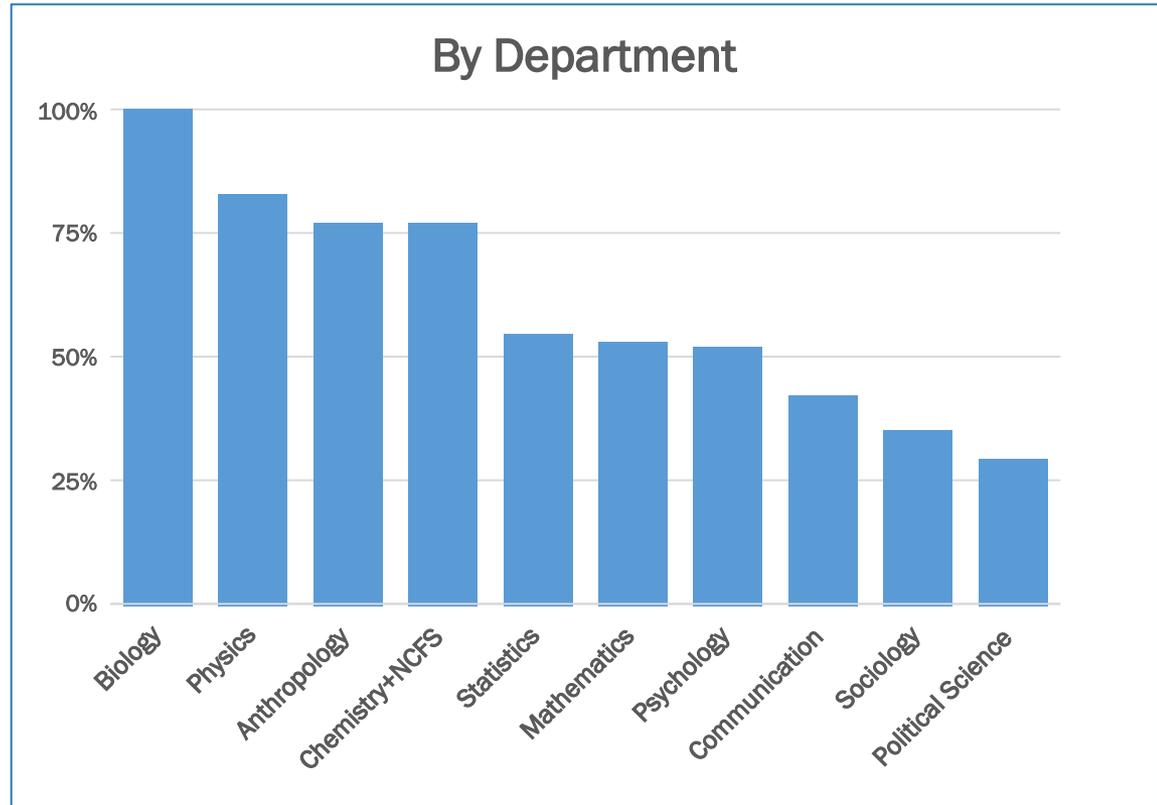


# Grants per Faculty FTE (tenured and tenure-earning only)



# % of Tenured/Tenure-Earning Faculty Members with Grants in Past 5 Years

College-wide, 60% of tenured/tenure-earning faculty members received funding during the past five years



# Scholarly Productivity

There is no good way to assess the impact of an entire college's scholarship.

But some rough measures of productivity are available. For example, recently COS faculty members have averaged:

4.3 papers

5.2 presentations

219 citations

per person per year

# II. Priorities and Progress

- Many of the most important priorities of a multidisciplinary college such as COS are set by the departments, schools, and centers
- But we conducted a strategic planning process that asked faculty to help establish college-level priorities
- These priorities guided decisions and resource allocations during the past five years
- The following sketches priorities and the progress that was made (or not made)

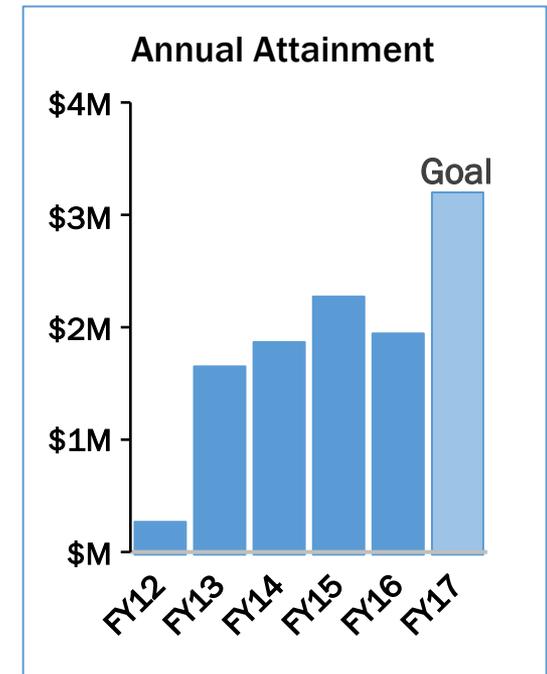
# Priority: New PhD Programs

Science disciplines play a key role in UCF's national standing, and the college's programs have high potential to be nationally prominent. A necessary requirement for competitiveness is to offer the PhD.

- The Political Science Department took this key first step in 2013 by starting a PhD in Security Studies
- Several strong programs are well positioned to advance: Data Analytics, Anthropological Sciences, and Strategic Communication
- Progress to date:
  - Invested in new faculty lines in each program to strengthen research
  - Obtained ~\$500k in recurring funds for PhD student support
  - Proposals for Data Analytics and Anthropological Sciences are complete; if approved these programs will start in 2018
  - Proposal for Strategic Communication is in development

# Priority: Philanthropy

- Before 2011 the college had almost no organized development effort
- Have now built a professional advancement team
- Progress includes:
  - ❖ Annual attainment is up to about \$2M; reached \$11M of our \$20M goal for IGNITE campaign
  - ❖ Funding for endowed position in Statistics
  - ❖ [Major donation](#) for UCF RESTORES
  - ❖ Programs underway for big data, [sea turtles/ coastal facilities](#), the India Center, etc.
  - ❖ Scholarships such as the [Steven Sotloff Memorial Fund](#), [Clay Newbill Hollywood Internship](#), etc.
  - ❖ Improved communication via [COS News](#), [newsletters](#), [Annual Report](#), etc.
  - ❖ Improved outreach to alumni



# Priority: Philanthropy

Reaching alumni is important for long term advancement success

**Structured Communication Plan**  
Newsletters, alumni spotlights, annual letters from dean and chair, college alumni chapter, alumni events, ....



[New alumni chapter](#)



[Alumni Spotlights](#)

[Distinguished Speaker Series](#)



Annual [AlumKnights](#) Event to recognize alumni from each department

# Priority: Student Learning and SOTL

- Size and demographics give UCF the opportunity to be a national leader in SOTL research and in adopting the results to improve student learning
- Opportunities are particularly great in STEM fields where external funding is available
- Progress includes:
  - Founding [iSTEM](#) together with CECS
  - Funding the [iSTEM Fellows](#) program to attract more faculty into funded SOTL research
  - Hiring SOTL researchers in several departments
  - Faculty success obtaining SOTL funding from NSF and other agencies
  - Research-based pedagogical reforms adopted by faculty in nearly every department



# Priority: Diversifying Faculty and Students

- As a college with STEM programs, COS has a responsibility to reduce barriers to success for students from underrepresented groups
- Both faculty and student diversity influence student success
- We changed the college's search process to reduce unconscious barriers to hiring a diverse faculty – and increased female tenure-track hires (to about 50%) but made no appreciable progress on other measures of diversity
- Direct outreach to K-12 students from underrepresented groups helps families recognize new opportunities; through iSTEM we helped initiate [UCF STEM Day](#), which has brought several thousand K-12 students to campus, and added [science summer camps](#)
- The Physics Department became an [APS Bridge Site](#) to recruit and prepare under-represented minority students for PhD programs
- Communication is developing a [Hispanic Media initiative](#)

# Priority: Partnerships

Many COS programs can be improved by strengthening partnerships – both internal and external (especially for programs that benefit by location in a metropolitan area). Some recent examples:

- Statistics is building on its strength in Data Mining, together with CECS and Business, to shape a nationally competitive interdisciplinary Data Analytics program; together we are establishing ties with interested industry partners
- Most programs in the Nicholson School already have strong industry partnerships; we are working to make their move downtown an opportunity to greatly expand industry and other ties
- The Dean’s Advisory Board has connected us to supporters that are opening doors for coastal research, big data, student internships, etc.
- The Sustainable Coastal Systems cluster grew out of partnerships with CECS and is expanding with new ties across UCF and with regional partners

# Priority: Internationalization

We set a goal of expanding international opportunities in appropriate areas. Some progress to date includes:

- Establishing a [PhD in Security Studies](#)
- New Minors including International and Global Studies, Global Peace and Security Studies, Intelligence and National Security, and Terrorism Studies
- Moving two recently established centers into Political Science: the [India Center](#) and the [Prince Mohammad bin Fahd Program for Strategic Research and Studies](#)
- First [Kurdish Political Studies endowed chair](#) in the nation
- Adding study abroad and exchange programs in Communication and in Political Science (particularly for the International and Global Studies BA)
- Playing a key role in Global UCF, particularly in the success of first-year students

# Improve Everything

Many of the most important accomplishments in a diverse college like COS result from efforts to improve what we are doing, by taking advantage of opportunities as much as by establishing priorities. Some examples:

- Hired a cluster of three geospatial faculty to strengthen GIS offerings
- Built an attosecond group around the world's top attosecond researcher
- Built a group interested in telehealth (developed from a cluster proposal)
- The coastal cluster expanded from Biology and CECS to become a highly interdisciplinary university-wide group, and is headed towards center status
- Added several catalysis/energy faculty via a successful cluster proposal
- Added new faculty able to support the Security Studies program
- Added significant strength in physical and biological anthropology
- A NASA center grant allowed the hiring of planetary science faculty
- Added big data researchers in Statistics, Mathematics (and CECS, CBA)
- Attracted renowned senior faculty in Strategic Communication
- Added SOTL researchers in Chemistry, Mathematics, and Physics

# New Academic Programs

Efforts to improve curriculum are ongoing. Some programs added recently:

- Security Studies PhD
- Business Analytics MS track (joint, Statistics & Business)
- Data Analytics MS (joint, Statistics & Computer Science)
- Physics BA
- Communication & Conflict BA
- Actuarial Science BA (proposal to reactivate)
- Minors:
  - Intelligence & National Security
  - Global Peace & Security Studies
  - Terrorism Studies
  - Diplomacy
  - Human Communication
  - Anthropology & Global Health
  - Mathematical Biology
  - Nanoscale Science & Technology
- Certificates:
  - Health Communication (UG)
  - Anthropology of Global Health (UG)
  - Nanoscale Science & Technology (UG)
  - Intelligence & National Security (UG, G)
  - Human Biology (UG)
  - GIS (UG, G) (approved)
  - Civics Teaching (UG)
  - Mathematical Science online (G)

# On-line Degree Programs

On-line education has steadily increased in importance. COS has some of the most capable on-line teachers in the country, particularly in the social sciences. Building on that strength, and student interest, we have added these on-line degrees:

- Anthropology BA
- Communication and Conflict BA
- International & Global Studies BA
- Political Science BA (three tracks)
- Psychology BS
- Sociology BA
- Social Sciences BS
- Forensic Science MS

*Several have been ranked in listings of top on-line degree programs – but the reliability of these published rankings is unknown*

# III. New Environment

Historically colleges within UCF have largely been left to determine our own priorities. But changes to the environment in which we operate will influence our future:

- The state now funds universities for performance rather than growth
- UCF has a new Collective Impact Strategic Plan
- The provost has established goals for colleges
- Colleges receive funding via a new budget model

These constraints are not a comprehensive set of goals for COS, but they do require us to focus on key issues. Our priorities and resource decisions must be influenced but not entirely determined by these constraints.

# State Performance Funding

Based on reasonable but imperfect measures such as:

- Percent of Bachelor's graduates employed or continuing their education 1 year after graduation
- Six year graduation rates (FTIC only)
- Second year retention

But the measures ignore transfer students – an important part of our mission – and are otherwise an incomplete picture of our responsibilities and opportunities

# “Emerging Preeminence” Funding

Based on 12 measures such as

- FTIC GPA and SAT above 4.0 and 1800 (met by UCF)
- Freshman retention rate above 90% (UCF close: 89%)
- Non-medical STEM expenditures above \$150M (met)

We have met 6 of the 12. Within 5 years must meet most of the remaining 6. For example:

- 200 postdocs
- 6 National Academies members
- \$200M in STEM research expenditures

# UCF Strategic Plan

The 20-year plan goes all in on these priorities:

- Provide education to people from all backgrounds
- Become a nationally leading research university
- Take advantage of place
- Be America's leading partnership university

There are other emphases as well, but these have the greatest significance for me

The plan has a number of key measures. Some examples:

# UCF Strategic Plan

## Some Selected Key Measures

2016		2021
625,000	Central Florida post-secondary degrees	750,000
9th	Ranking among Orlando EDC peer regions	5th
89%	First-year retention rate	92%
70%	Six-year graduation rate	75%
72%	Transfer student graduation rate	75%
8,000	Number of graduate students	10,000
30,000	Alumni annual gift donors	60,000
650	Number of associate and full professors	810
1	National Academy members	6

# College Goals

The provost has worked with each dean to set 2020 college goals. Some for COS:

- Increase PhD students from 424 to 564
- Increase first year retention from 88% to 92%
- Graduate FTIC and transfer juniors at same rate
- Increase philanthropy from \$2.3M to \$5M per year
- Increase grants from \$14M to \$23M
- 12% of tenure-track hires from underrepresented groups

# New Budget Model

- The university needs to be true to our understanding of our mission, but also respond to the constraints of performance funding
- These considerations influenced the strategic plan, and college goals
- And all of these motivated a new budget model to distribute funds to colleges. The model has three parts:
  - Workload funding (fixed \$ per SCH of growth)
  - Incentive funding (student success, grants, raising endowed funds for faculty)
  - Strategic investments

# IV. Looking Forward

Thinking about the new environment, as well as our own goals, suggests possible directions for the next few years:

COS plays a major role in student success – of our own majors, but also university-wide because of our foundational courses

- Focus more attention on student success, especially transfer students who have declared COS majors
- Boost high impact experiences such as internships and study abroad (in addition to UG research, which we do well), and consider curricular changes to improve career readiness
- Focus on foundational courses (such as high DFW courses)
- Improve the MALL in Mathematics

# Looking Forward (cont.)

Developing nationally prominent graduate and research programs has always been a COS priority – and is now a university priority

- Some COS PhD programs are nationally competitive and well positioned to become nationally prominent with additional investment
- Others need to build faculty strength; for both, we will need to take advantage of clusters and any allocations to COS
- We are ready to begin the PhDs in Data Analytics and Anthropological Sciences, assuming approval
- Communication's move to UCF Downtown, combined with a PhD in Strategic Communication, is a major opportunity for the school to step up in prominence

# Looking Forward (cont.)

Increasing contracts and grants is a top university priority; this will have to influence college decisions about resource allocations

- We need to strengthen faculty support for grant activity, particularly given the collapse of support from ORC
- One purpose of interdisciplinary efforts such as the cluster initiative is to enable larger grants (e.g., for centers); this has not been a strength in COS, and needs additional support
- Planetary science has strikingly large opportunities, particularly with instruments and missions; advancing this may also let us develop earth sciences more generally
- We should try alternative approaches such as using E&G funds to leverage the hiring of soft money researchers in appropriate fields (e.g., NASA-funded)

# Looking Forward (cont.)

Philanthropy is increasingly important for the college's success, and we now have a solid foundation for higher sustained levels of fundraising - at least \$5M/year within a few years

- Well-developed projects include UCF RESTORES (first major gift received), sea turtle/coastal facilities (kicked off in November) and to a lesser extent big data (with other colleges)
- Other known opportunities include the India Center and the Prince Mohammad bin Fahd Program
- We need interested faculty to identify other opportunities and help us turn them into well-developed projects
- Other priorities such as faculty and graduate fellowship endowments depend on continued work and serendipity

# Looking Forward (cont.)

With all of this said, many important priorities continue to be set at the department, school, or center level.

For example, NCFS has recognized that it is well positioned to take advantage of a recent NAS call to improve the scientific rigor underlying forensic science. Another example: the I/O Psychology program sees opportunities to partner with regional industries that would benefit students and boost the program's national standing.

In a similar way, each part of the college has its own understanding of opportunities and priorities.

Supporting department, school, and center priorities is at least as important as pursuing college or university goals.