Indirect Costs:
An important topic for the I²SL community to understand because of its impact on lab sustainability at universities

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Various names used for overhead costs paid by sponsors

Facilities & Administrative (F&A) costs = Indirect Costs (IDC) = Indirect Cost Recovery (ICR)

This presentation focuses on universities that receive more than $10 million in funding for direct costs. Below $10 million there is a simplified process.

Learning Objectives

- Understand the difference between indirect costs and direct costs associated with sponsor-funded research
- Learn how the Facilities & Administrative (F&A) rate is calculated for universities with over $10 million/year in direct costs
- Understand missed opportunities in facilities portion of the F&A rate calculation to promote efficiency and how the process dis-incentivizes efficiency
- Learn about actions that universities could take to incorporate efficiency into the F&A process

Direct Costs

Costs that can be directly connected with a project

- Researcher salary & fringe benefits
- Supplies, equipment, & services for a project
- Travel for a project
- Tuition remission for student researchers

vs.

Indirect Costs

Costs not easily connected with just one project or that serve multiple causes

- O&M costs
- Building & equipment depreciation
- Library
- Interest on research bldg. construction bond
- Administration

What is the purpose of a Facilities & Administrative (F&A) rate and how frequently is it determined?

To ensure that the federal government and other sponsors provide appropriate funding for indirect costs, not just direct costs.

- Universities across the nation indicate that current F&A rates do not cover all indirect costs, and as result, universities are “cost sharing” indirect costs with sponsors

Negotiation between university & federal government presently occur every 3-5 years.

- Universities create an extensive report justifying the F&A rate request to the federal government (HHS or DOD ONR) focused on a single base year.

How is a rate applied?

- Example rate = 54%
- Example federal grant of $1,000,000

  0.54 x $1,000,000 = $540,000

- Ideally, university would receive $540,000 for indirect costs
  - This is in addition to the $1,000,000 the scientist has been awarded
- But effective rate is lower since there are items that cannot be included such as capital equipment purchases and subcontracts over $25,000
  - A typical effective rate is around 30%
- At CU B, in general, 29% of ICR funds go to departments and 71% stays with university.

Average rise in F&A rates over past ten years

Table 1.1. Ten-year trend of annualized percent change in F&A rates for 107 U.S. research institutions. From [5].

Reporting Cohort & Survey Year	FY 2007	FY 2017	Annualized Percent Change
Research Universities (average)	*51.2*	*55.0*	*+ 0.8%*
Research Universities (median)	*50.3*	*54.5*	*+ 0.7%*

Source: http://docs.house.gov/meetings/AP/AP07/20171024/106525/HHRG-115-AP07-Wstate-DroegemeierK-20171024.pdf which references Council on Governmental Relations (2017, February). 2017 Survey of Facilities and Administrative (F&A) Rates Executive Summary. Washington, DC. Available from COGR for COGR members.

How is F&A rate calculated?

Described in Uniform Guidance in Appendix III to 2 CFR Part 200: http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=86764c31a1e36079da783740555a18ce&mc=true&n=pt2.1.200&r=PART&ty=HTML#ap2.1.200_1521.iii
(Uniform Guidance replaced OMB Circular A-21, A-110, A-133 & others)

General formula (calculated for a single base year):

$$\text{F\&A Rate} = \frac{\text{F\&A expenses supporting research}}{\text{modified total direct costs (MTDC)}} \times 100$$

$$\text{F\&A Rate} = \frac{\text{F expenses}}{\text{MTDC}} \times 100 + \frac{\text{A expenses}}{\text{MTDC}} \times 100$$

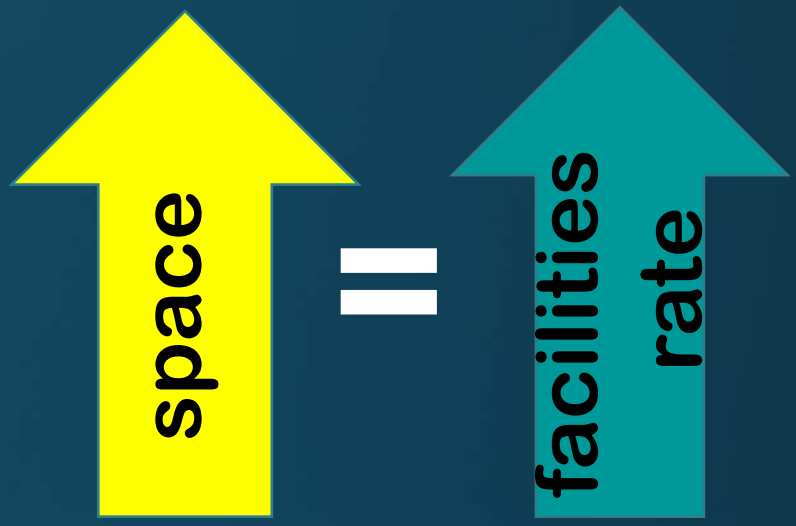
Two components calculated and added together:

F&A Rate = Facilities % + Administrative %

Administrative Percentage Calculation

- Analysis of costs for:
  - General administration
  - Departmental administration
  - Sponsored Project administration
  - Student administration
- Capped in 1991 to 26%
  - According to Nature "Indirect Costs: Keeping the Lights On", cap resulted from inappropriate university claims found by auditors
- Actual CU B Administrative rate (FY12) for research = 28.33%
- New unfunded mandates from fed. govt. are unwelcome because no additional administrative support/funding to address them
- The FDP (Federal Demonstration Partnership) focused on reducing administrative burden in collaboration with federal agencies

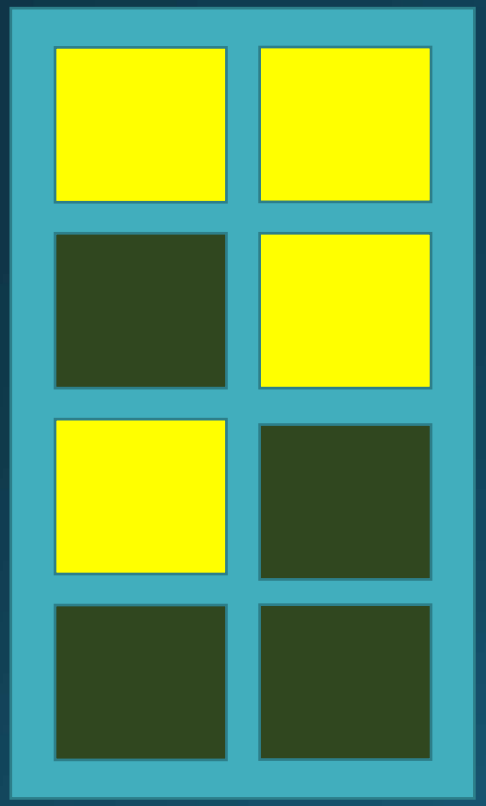
Facilities Percentage Calculation



- Not capped
- Includes analysis of costs for:
  - Building and equipment depreciation
  - Operations & maintenance of facilities
  - Interest paid for facility debt
  - Library (based on a special study)
- CU B is presently at 28% for “on campus” research
- Campus space assigned to sponsor funded research in base year is used to determine facility indirect costs that qualify (except library).

How does space connected with sponsor funding affect rate calculation for “facilities” portion?

Example building



If a space survey finds that 50% of a building’s space is connected with sponsor research funding during the base year, then 50% of the following expenses for this building qualify towards facilities portion of the F&A calculation:

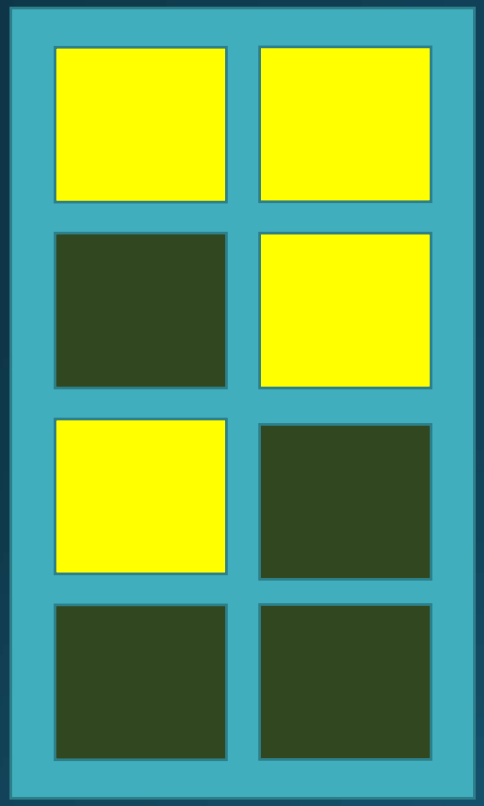
- Building and equipment depreciation
- Interest on building debt
- Operations and maintenance (From Code of Federal Regulations : janitorial and utility services; repairs and ordinary or normal alterations of buildings, furniture and equipment; care of grounds; maintenance and operation of buildings and other plant facilities; security; earthquake and disaster preparedness; environmental safety; hazardous waste disposal; property, liability and all other insurance relating to property; space and capital leasing; facility planning and management; and central receiving)

= sponsor funded research

= other (office, classroom)

Space connection continued…

Example building



For example, using 50%…

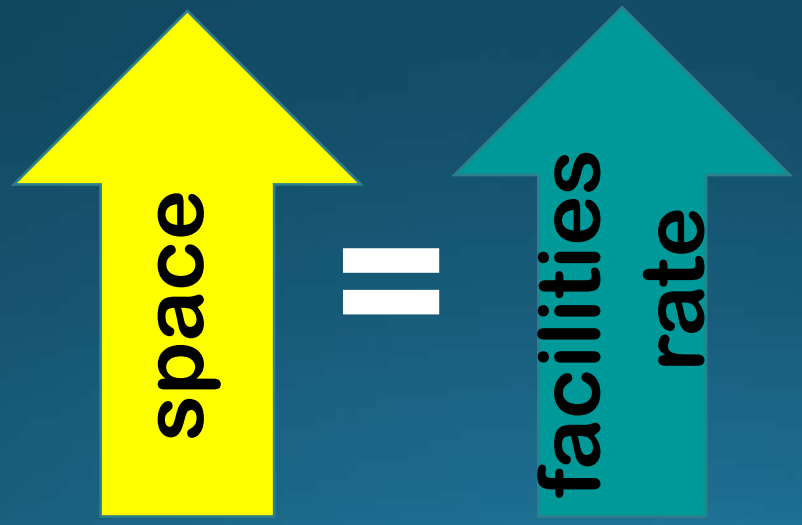
- $50,000 of $100,000 in building depreciation costs applied
- $5,000 of $10,000 hazardous waste applied
- Etc.

= sponsor funded research

= other

Process lacks request for space efficiency

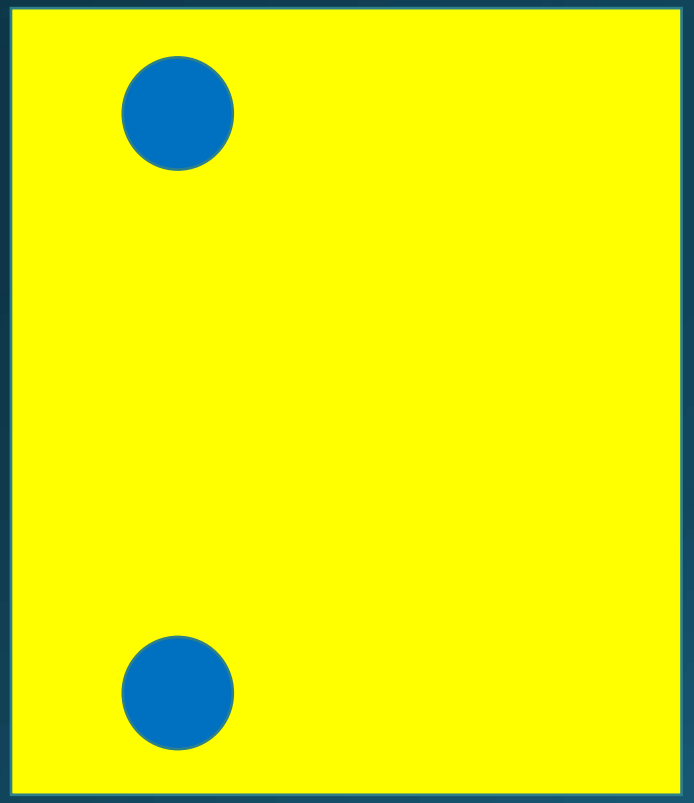
- Expectation is just for reporting space connected with sponsor funded research but not whether all that space is needed for the sponsor funded research.



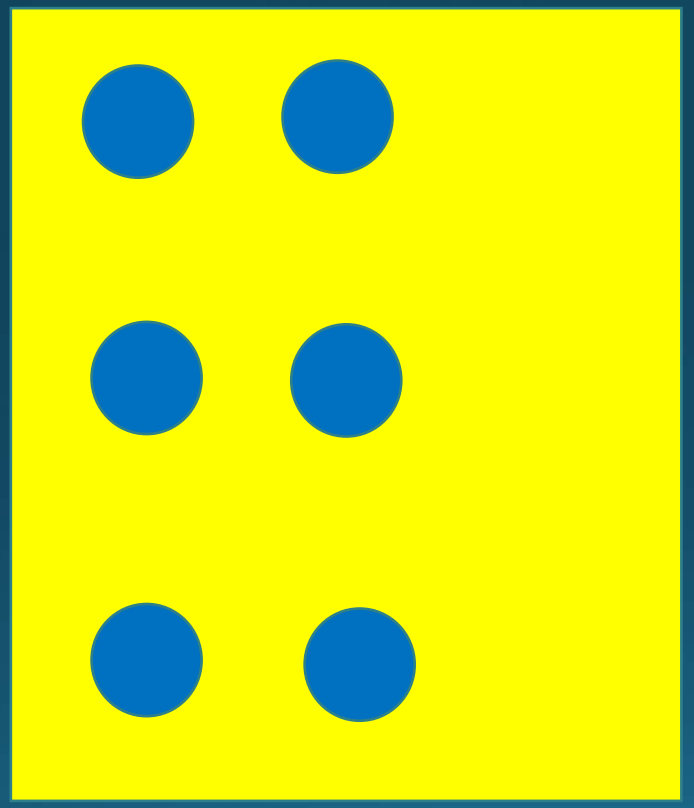
Disincentive for space efficiency

= researcher on sponsor funding (grad student, post doc, or PI)

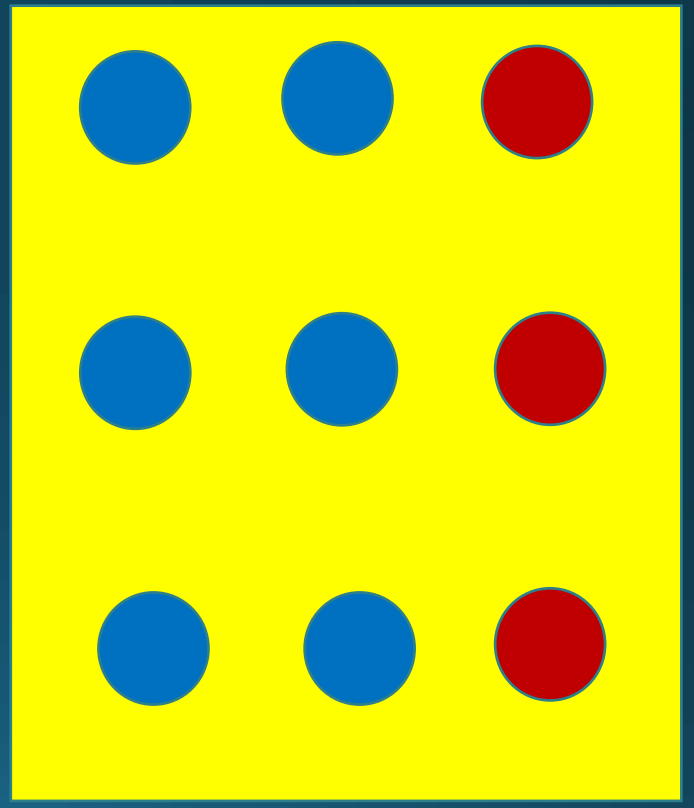
= undergrad, PI with start-up funding



100% of this lab space counts even though it is underutilized



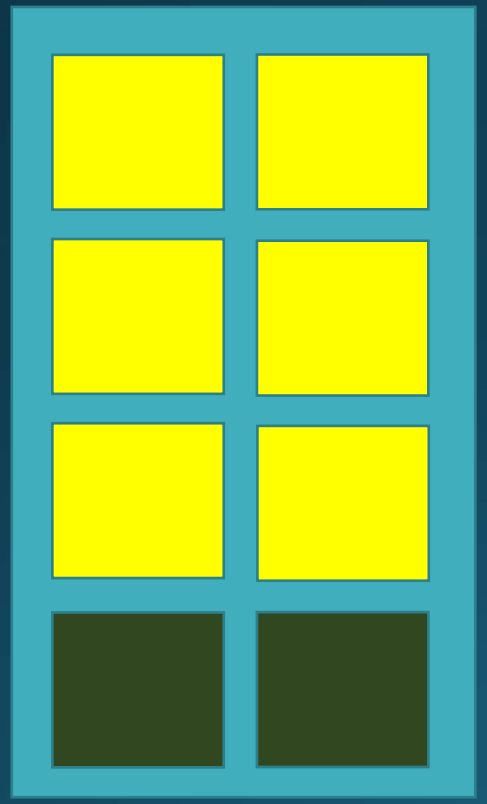
100% of this lab space counts



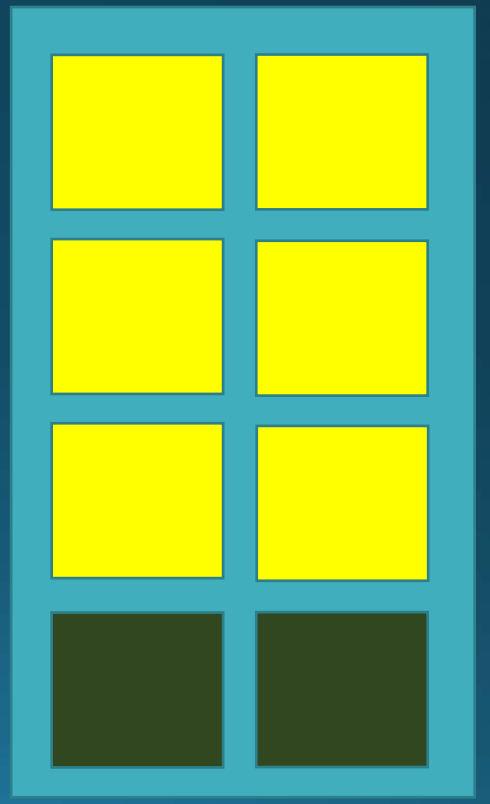
Less than 100% of this lab space counts even though it is better utilized

Side by side comparison of new research building at two universities with exactly same costs but one uses labs space more efficiently than other

University 1



University 2



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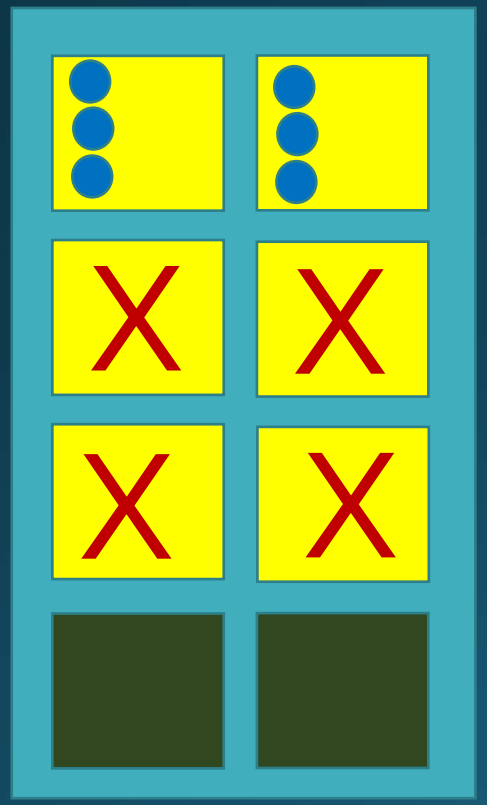
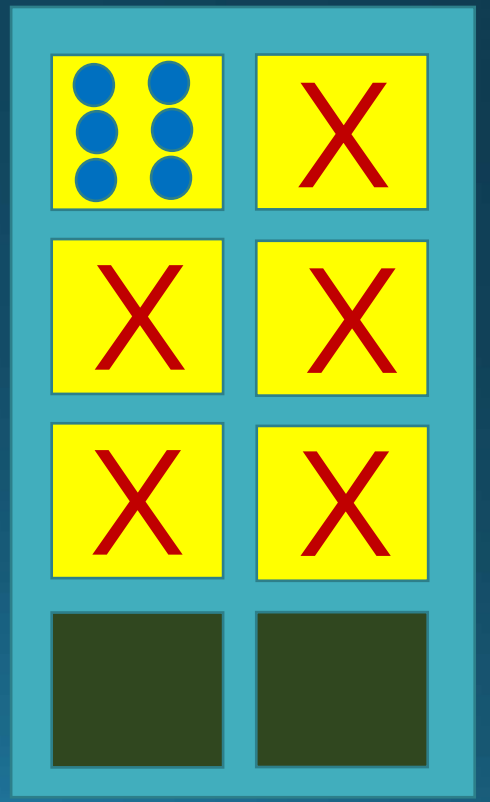


25%

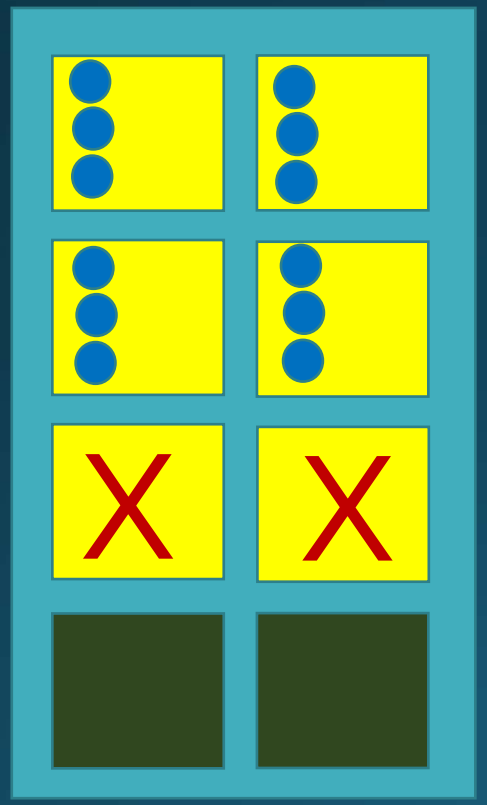
University 2



12.5%

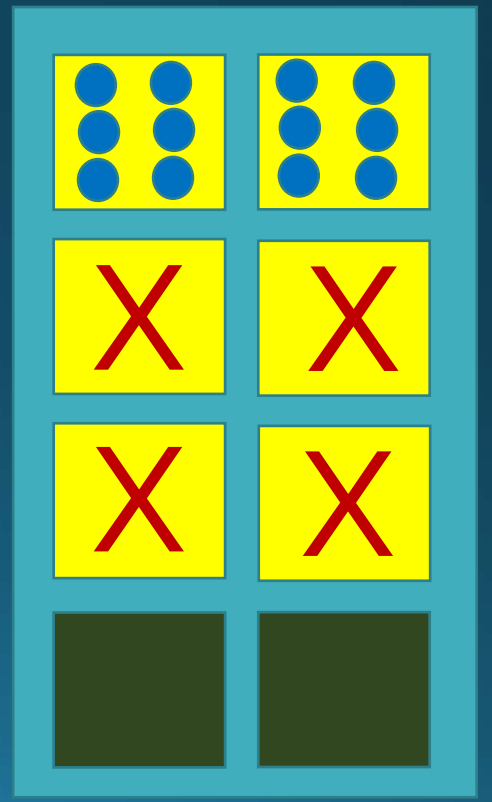
Side by side comparison of new research building at two universities with exactly same costs but one uses labs space more efficiently than other

University 1



50%

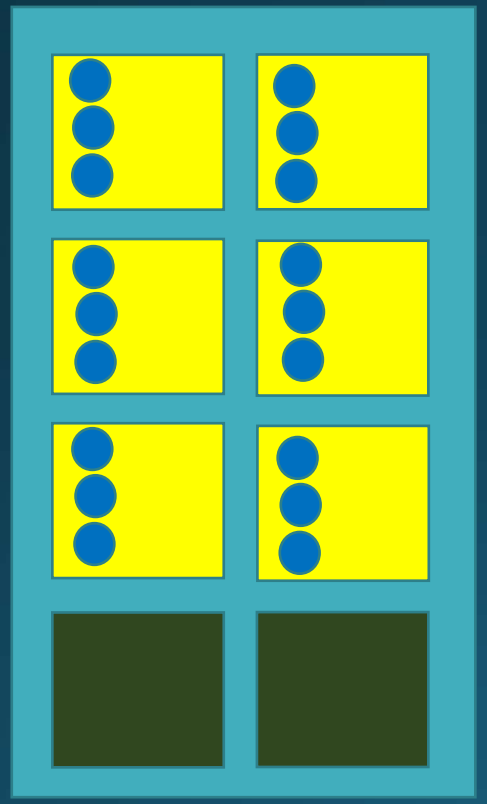
University 2



25%

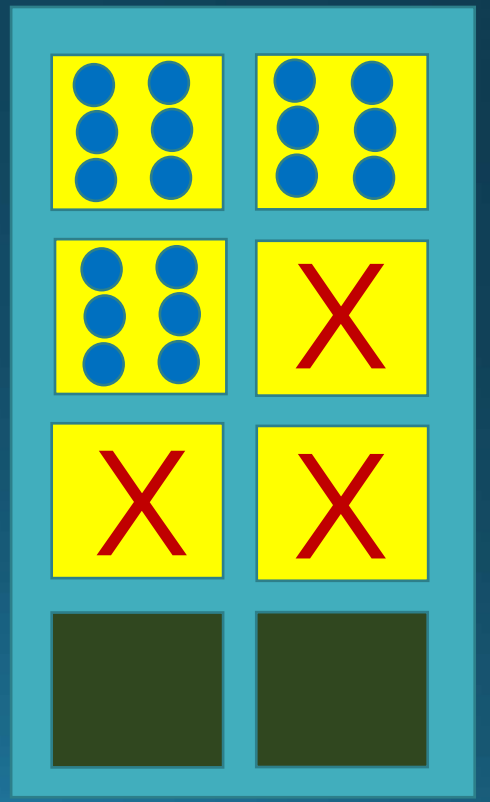
Side by side comparison of new research building at two universities with exactly same costs but one uses labs space more efficiently than other

University 1



75%

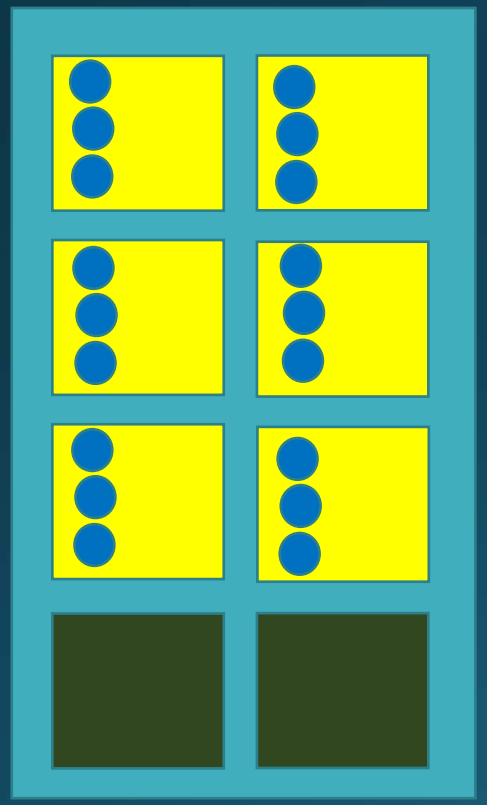
University 2



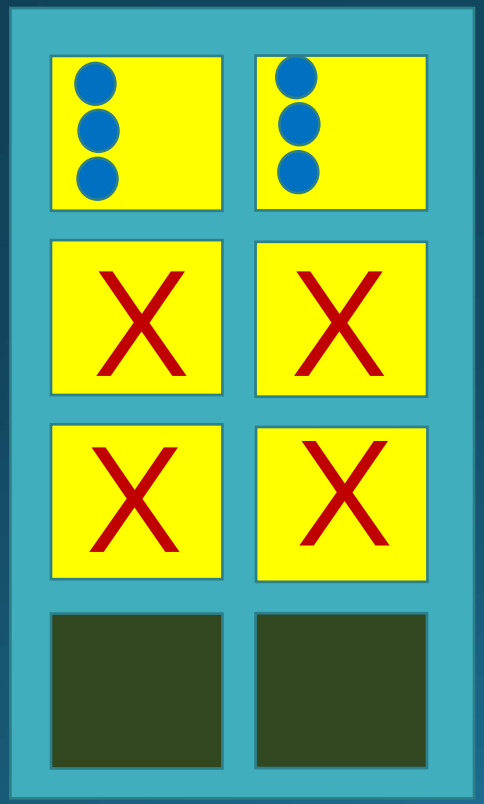
37.5%

Side by side comparison of new research building at two universities with exactly same costs but one uses labs space more efficiently than other

University 1

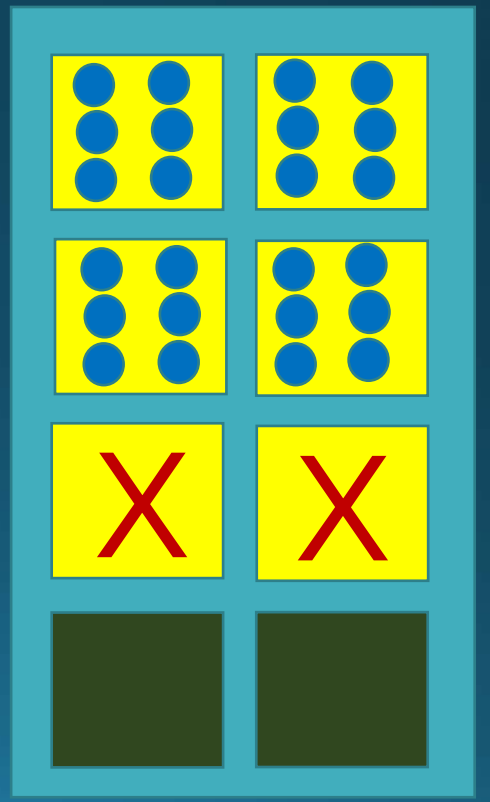


75%



25%

University 2



50%

With space efficiency being dis-incentivized by the process, then…

Does the facilities rate calculation help institutions justify expansion of laboratory spaces and the construction of new research buildings campus rather than looking at space efficiency and optimizing the use of space in current lab building?

After all, the process for determining the facilities rate:

- lacks an expectation of space efficiency and leads to a higher rate when there is space inefficiency
- includes depreciation of buildings as allowed costs
- includes interest paid on facility debt/loans as allowed costs

Efficiency in overhead will decrease our F&A rate, but inefficiency is also costing the university money

Efficiencies that will decrease Facilities rate:

- Efficient use of lab space assigned to sponsor research
- Energy & water efficiency in buildings included in the F&A rate calculation

But, we don't get credit in the Facilities calculation for:

- Spaces that are empty that departments are holding onto.
- Spaces (perhaps in the basement of buildings) that have become storage space for lab equipment waiting to be used again.

And there is missed opportunity for spaces to pull in F&A funding:

- When spaces do not have productive research (departments or PIs holding onto space without grant funding or space used for storage of unused equipment). F&A dollars only flow into the university with grant funding.

Scientists and university administration disagree on the direction that F&A rates should be going

Universities need the rates to go higher to cover overhead costs.

Scientists want the rates to stay low because many grants cap the total amount of fund available for indirect and direct costs combined. The higher the F&A rate, the less funding that can be requested by scientists for direct costs.

On a national level, the higher the F&A, the less funding for direct costs.

Small or lack of increases in federal research funding + More university scientists competing for federal funding + Inflation decreasing buying power of federal funding = Rising competition for federal funding

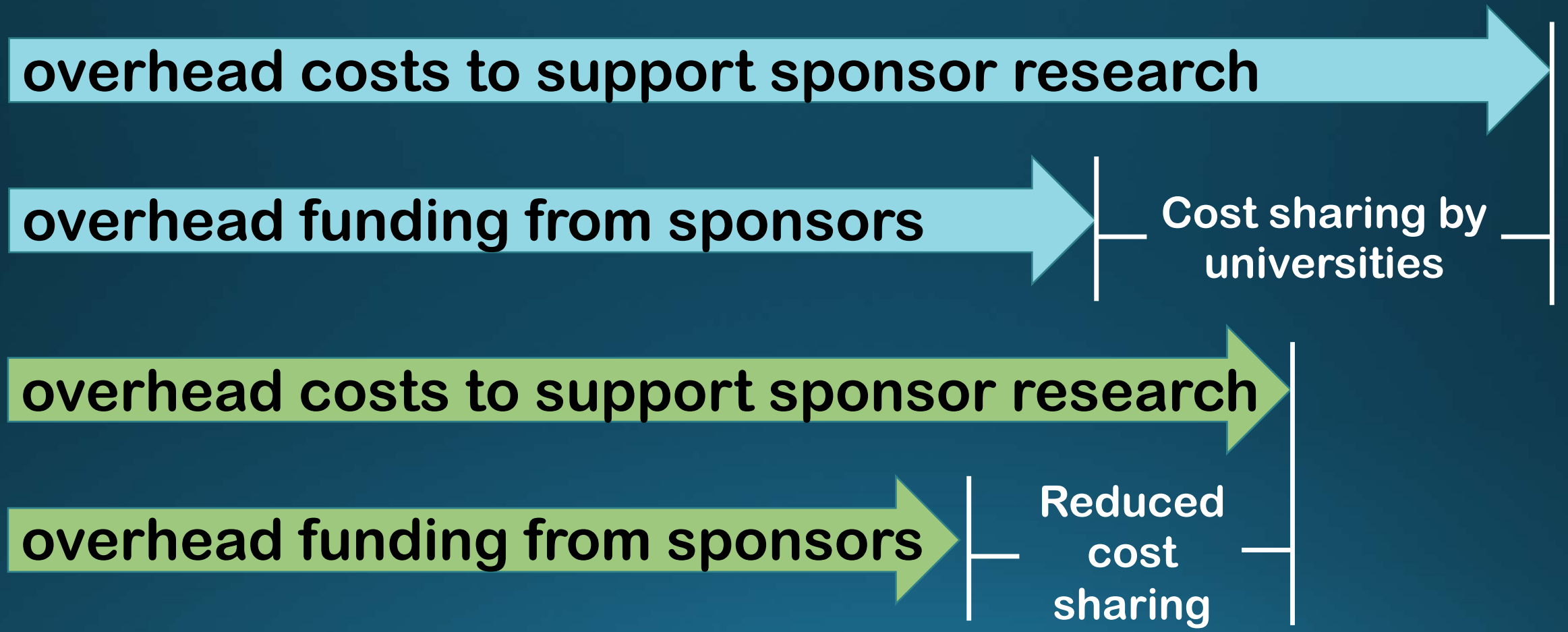
There is a need for open communication, understanding, & team approach on the topic of F&A

Science community has concerns about overhead (F&A) rate, but are not aware of how is it calculated and how their decisions affect it.

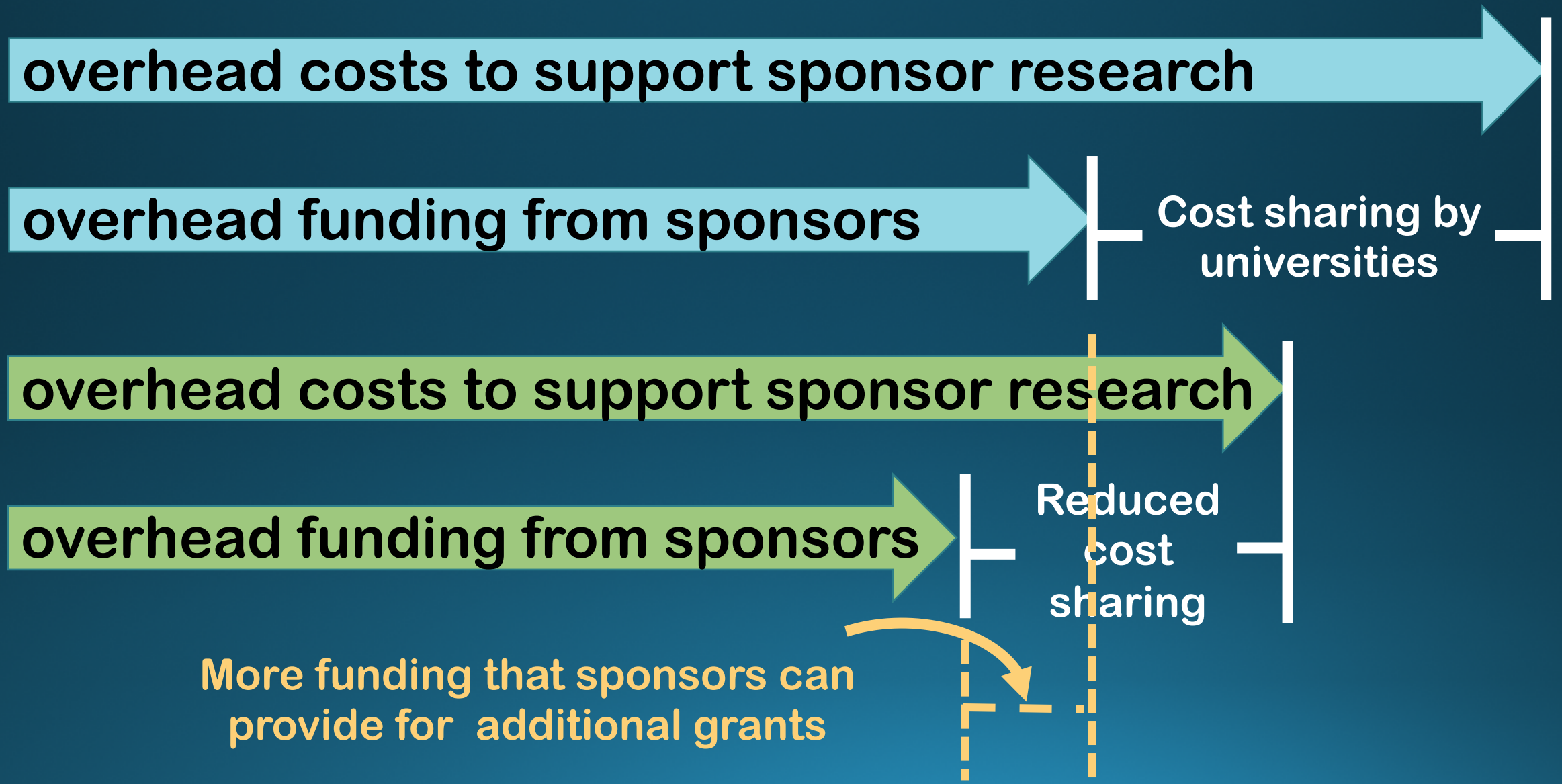
Scientists are unaware in general that:

1) the administrative portion was capped at 26%
2) that the following items lead to a higher rate:
    - Inefficient space connected with sponsor funding
    - Construction of new research buildings
        - Interest on facility debt
        - Building depreciation
    - More energy consumption than necessary

What if campus research was more efficient, lessening overhead costs… could this reduce cost sharing burden?



What if campus research was more efficient, lessening overhead costs… could it provide more $ for direct costs?



Now is the time to implement actions for efficiency related to F&A and be recognized as a leader

Since the indirect costs (or F&A) process has been criticized over and over again for inefficiencies, it would be in the best interest of universities to implement efforts for efficiency related to overhead dollars so institutions can demonstrate to the federal government and sponsors their effective and efficient use of those dollars.

For example, universities could:

- Have open communication, education, and discussion about indirect costs
- Focus on efforts leading to efficient, effective use of laboratory space rather than expansion of footprint with new lab construction
- Voluntarily write-in actions for efficiency within the F&A application to the federal government, setting the precedence for other institutions and being seen as a leader before the federal government starts requiring the information.
- Implement “Bringing Efficiency to Research Grants” efforts

Bringing Efficiency to Research Grants (BETR Grants):

Connecting actions for efficiency with research funding for the benefit of maximizing the effective use of sponsored funding while minimizing the environmental and social footprint of research

Equipment Sharing **Space Utilization** **Energy & Water Conservation** **Lab Assessment & Other Areas**

www.i2sl.org/betrgrants

The federal government could:

- Start asking for efforts that universities have in place or are implementing for efficiency with overhead costs (such as space utilization, energy/water efficiency, and other costs).
    - This could be done as part of:
        - F&A application process
        - Audits
        - Funding opportunity announcements (FOAs).
- Raise awareness and encourage compliance with CFRs requiring equipment sharing and avoiding duplication:
  2 CFR 200.318 d and 2 CFR 200.313 c2

QUESTIONS?

Contact Information:

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EXTRA SLIDES

Utility Cost Adjustment

Recognizing that lab space uses more energy than other spaces in a building…

- Uniform Guidance Appendix III to 2 CFR 200 B 4c included a utility costs adjustment allowing up to 1.3 additional percentage points. Justification can be made through either:
  - Sub-metering where space is devoted to single purpose
  - Effective square footage allocated to research laboratory space where presently a weighting factor of 2.0 can be used (based on Labs21 data - Labs 21 is a previous name for I2SL)

- COGR is asking for a weighting factor of 4.2 based on a letter with data that they presented to OMB in Nov. 2015 (http://www.cogr.edu/sites/default/files/COGR_Adjust_UCA_Nov13_2015.pdf)

Uniform Guidance Code of Federal Regulations (CFR) requiring equipment sharing & avoiding duplication

2 CFR 200.313 c2

"must also make equipment available for use on other projects or programs currently or previously supported by the Federal Government, provided that such use will not interfere with the work on the projects or program for which it was originally acquired.": http://www.ecfr.gov/cgi-bin/text-idx?SID=597cf895a4e1859ccf447c54c795d4b3&node=se2.1.200_1313&rgn=div8

2 CFR 200.318 d

"must avoid acquisition of unnecessary or duplicative items" : http://www.ecfr.gov/cgi-bin/text-idx?node=2:1.1.2.2.1.4.31&rgn=div7

How much federal funding supports R&D at universities?

- Majority of university R&D funding is provided by the federal government
  - 55% of all higher education R&D expenditures in FY15, totaling ~$37.9 billion in FY15 ($20 billion was from HHS)

- NIH:
  - 80% of NIH budget for extramural research = $22.5 billion in FY15 ($17.1 billion went to institutions of higher ed)
  - 28% or $6.3 billion of the $22.5 billion went for F&A

- NSF:
  - 22% or $1.3 billion of $5.8 billion in FY16 was for F&A

Source: http://docs.house.gov/meetings/AP/AP07/20171024/106525/HHRG-115-AP07-Wstate-DroegemeierK-20171024.pdf

Range of rates

Nature 19 Nov. 2014 "Indirect costs: Keeping the lights on" http://www.nature.com/news/indirect-costs-keeping-the-lights-on-1.16376:

- F&A rates for universities are between 20% and 85%
- Typically F&A rates are in the 40%s, 50%s, 60%s
- Average effective rate for universities is really 31%

There is a need to create a database of rates. A 2000 report by the Office of Science & Technology Policy recommended creating one: https://clintonwhitehouse4.archives.gov/WH/EOP/OSTP/html/analysis_univ.html#Issue_Six:_Options_for_Creating_an_F&A

F&A reimbursements can be spent on any purpose; it does not have to be spent on F&A items.

CU Boulder rates

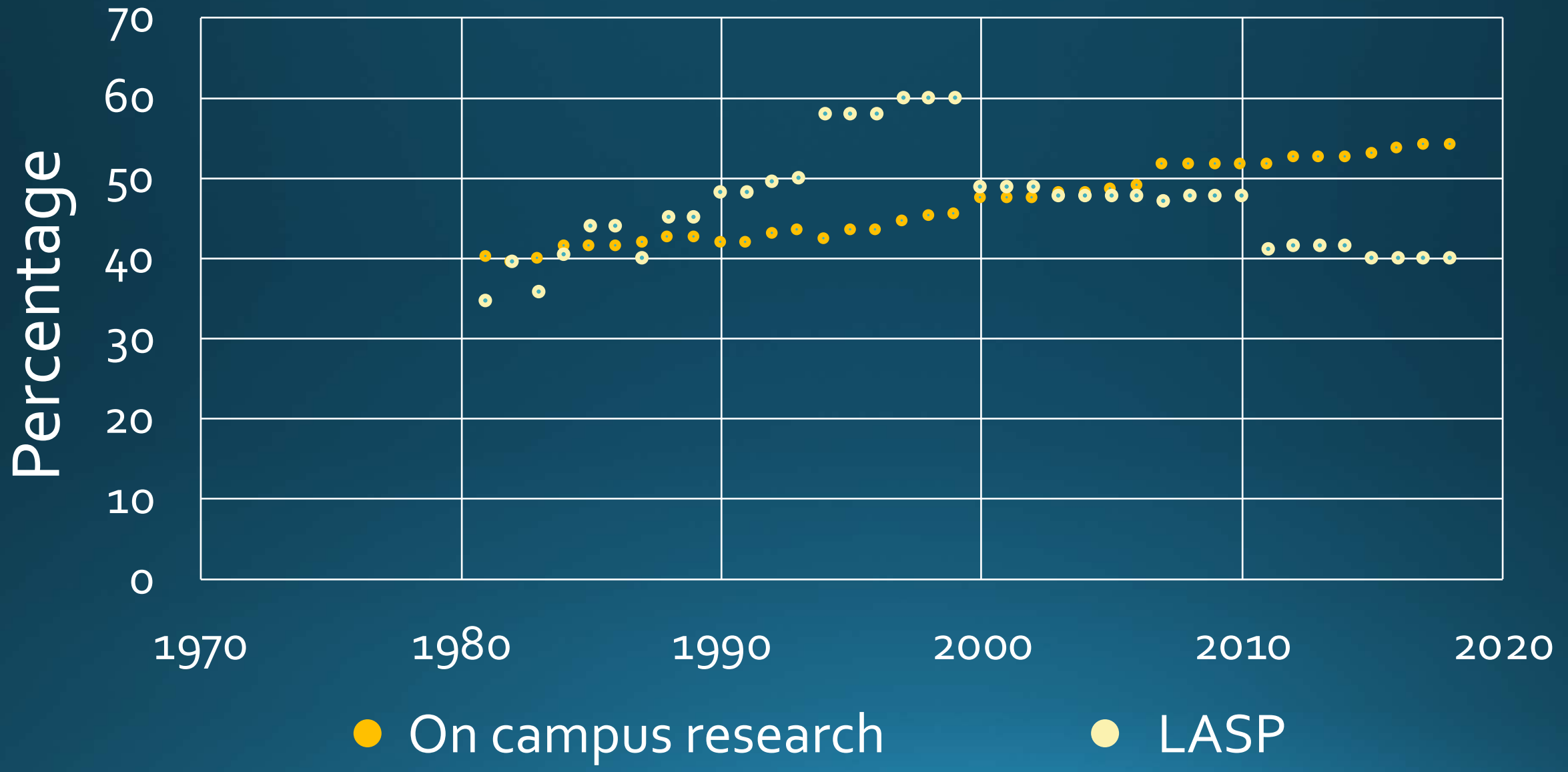
F&A Negotiated Rate History

Original Agreement Date	Proposal FY	Effective FY	On-Campus Research	Off-Campus Research	LASP	On-Campus Instruction	Off-Campus Instruction
May 21, 2010	08-09	10-11	51.5%	26.0%	41.0%	50.5%	26.0%
		11-12	52.5%	26.0%	41.5%	50.5%	26.0%
		12-13	52.5%	26.0%	41.5%	50.5%	26.0%
June 12, 2014	11-12	13-14	52.5%	26.0%	41.5%	50.5%	26.0%
		14-15	53.0%	26.0%	40.0%	49.0%	26.0%
		15-16	53.5%	26.0%	40.0%	49.0%	26.0%
		16-17	54.0%	26.0%	40.0%	49.0%	26.0%
		17-18	54.0%	26.0%	40.0%	49.0%	26.0%

Click here for the complete rate history

http://www.colorado.edu/controller/about-us/cost-accounting/fa-negotiated-rate-history

CU B On-Campus Research & LASP F&A rates



The FDP – minimizing administrative burden

155 universities, 10 federal agencies

"purpose is to reduce the administrative burdens associated with research grants and contracts."

The I2SL UAG group may be the only group working on efforts related to efficiency for the facilities rate portion of F&A

- Is it because there is no cap or other pressure point that would require efficiency with the facilities rate?
- The FDP is solely focused on the administrative portion

F&A process misses opportunities to ask for efficiency while receiving criticism for inefficiencies

F&A process lacks requests for:

- Efficient use of lab space assigned to sponsor research
- Energy efficiency and water efficiency in buildings included in overhead rate calculation

F&A process criticized for inefficiencies:

- In 2017, Trump and Price suggested 10% cap for F&A (Congress denied)
- In 2013, Obama Administration proposed creating a flat rate. Universities complained and the effort was dropped. (See this *source*).
- In 2013, European Union decided to implement a flat rate of 25% instead of negotiating rates for all grant recipients in its Horizon 2020 funding program (see *Nature* 499, 18–19; 2013)