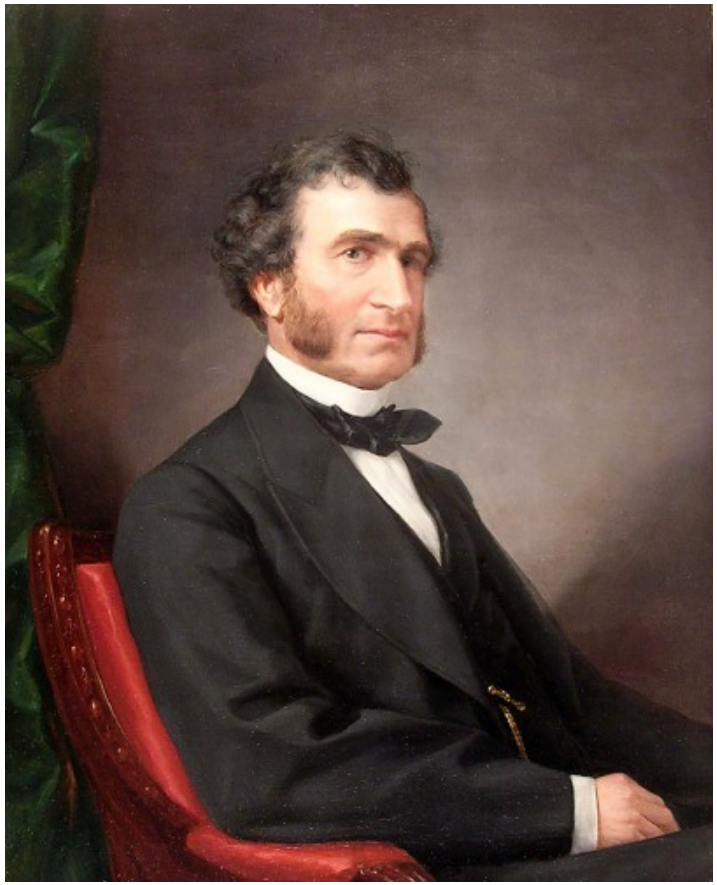

RESEARCH AT THE UNIVERSITY OF DELAWARE
UNIVERSITY OF DELAWARE

- Why do Universities Engage in Research?
- Federal Landscape for Research Funding
- What do Sponsors' Funds Pay For?
- What and Why Core Facilities?
- Technology Transfer & Business Development

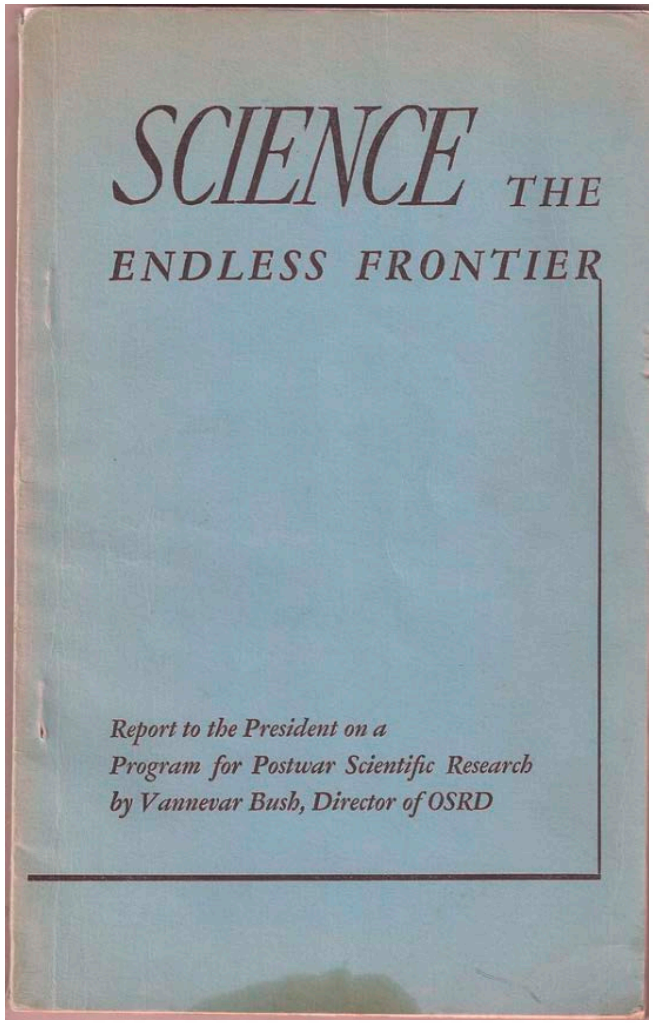
A Place of Discovery, Innovation and Impact


Why do Universities engage in research?

Morrill Act of 1862



…without excluding other scientific and classical studies and including military tactic, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, **in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.**



Federal Govt–University Pact

The publicly and privately supported colleges, universities, and research institutes are the centers of basic research. They are the wellsprings of knowledge and understanding. As long as they are vigorous and healthy and their scientists are **free to pursue the truth wherever it may lead**, there will be a flow of new scientific knowledge to those who can apply it to practical problems in **Government, in industry, or elsewhere**.

UD Mission Statement

The University of Delaware exists to cultivate learning, develop knowledge and foster the free exchange of ideas. State-assisted yet privately governed, the University has a strong tradition of distinguished scholarship, research, teaching and service that is grounded in a **commitment to increasing and disseminating scientific, humanistic and social knowledge for the benefit of the larger society.**

Federal Landscape for Research Funding

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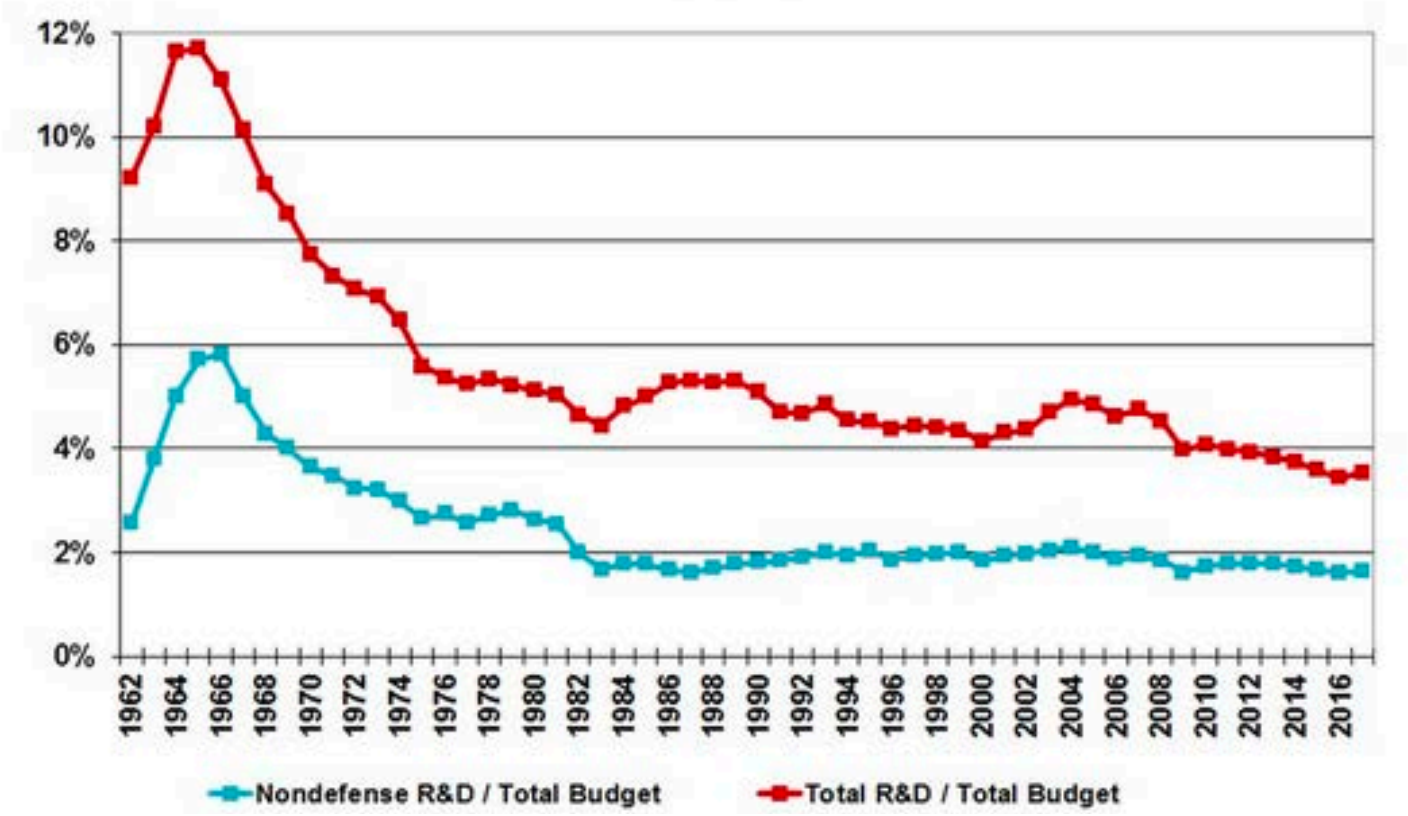
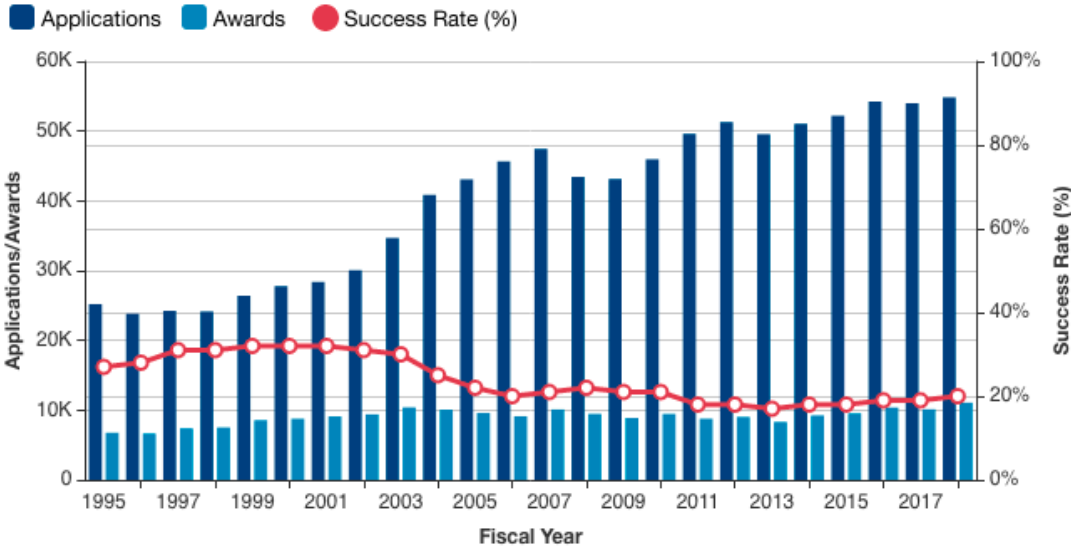
R&D as a Percentage of the Federal Budget

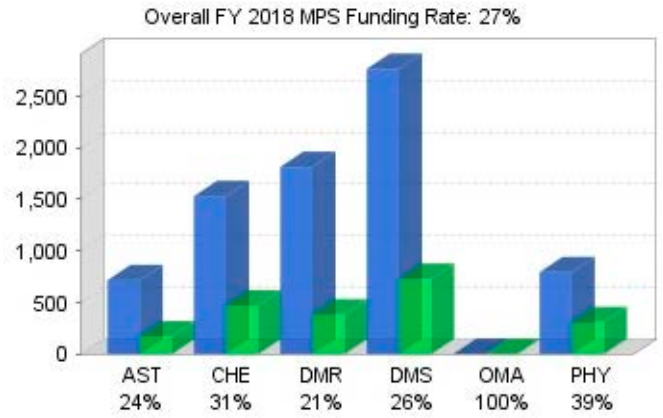


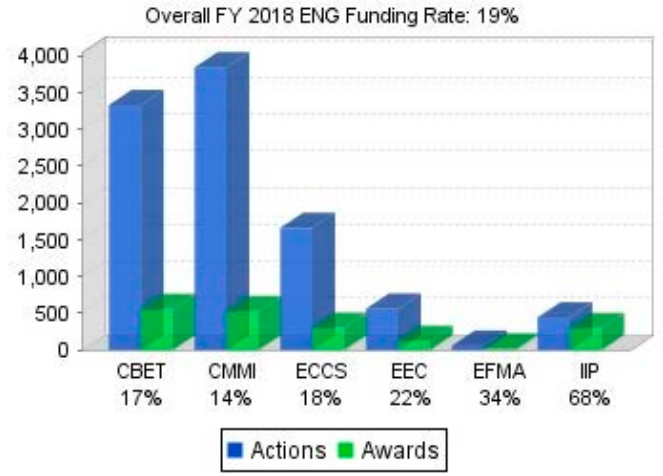
Federal Awards are Very Competitive

National Institutes of Health



National Science Foundation



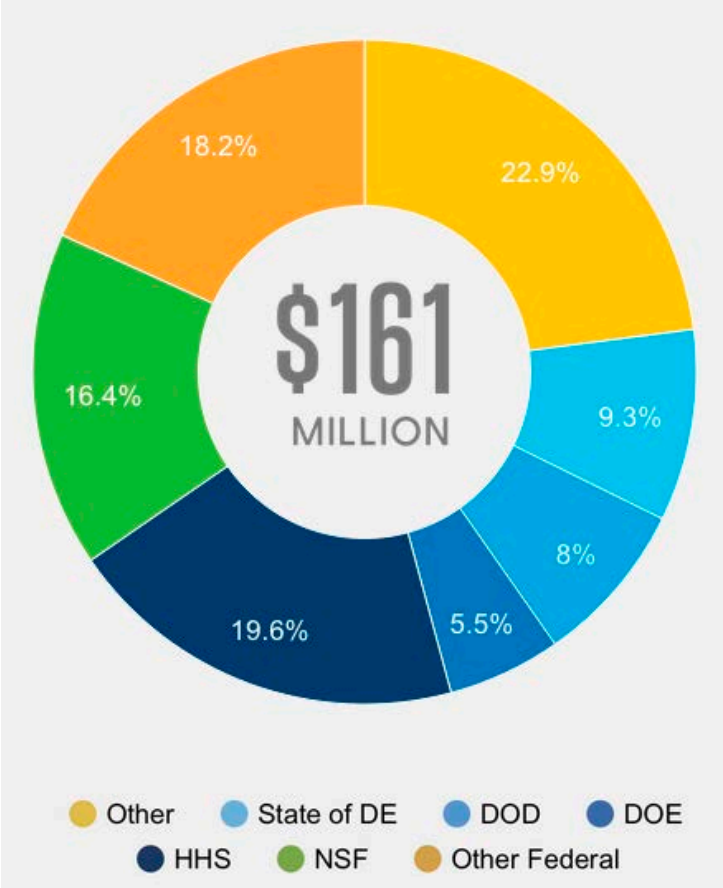


A Few Facts from UD

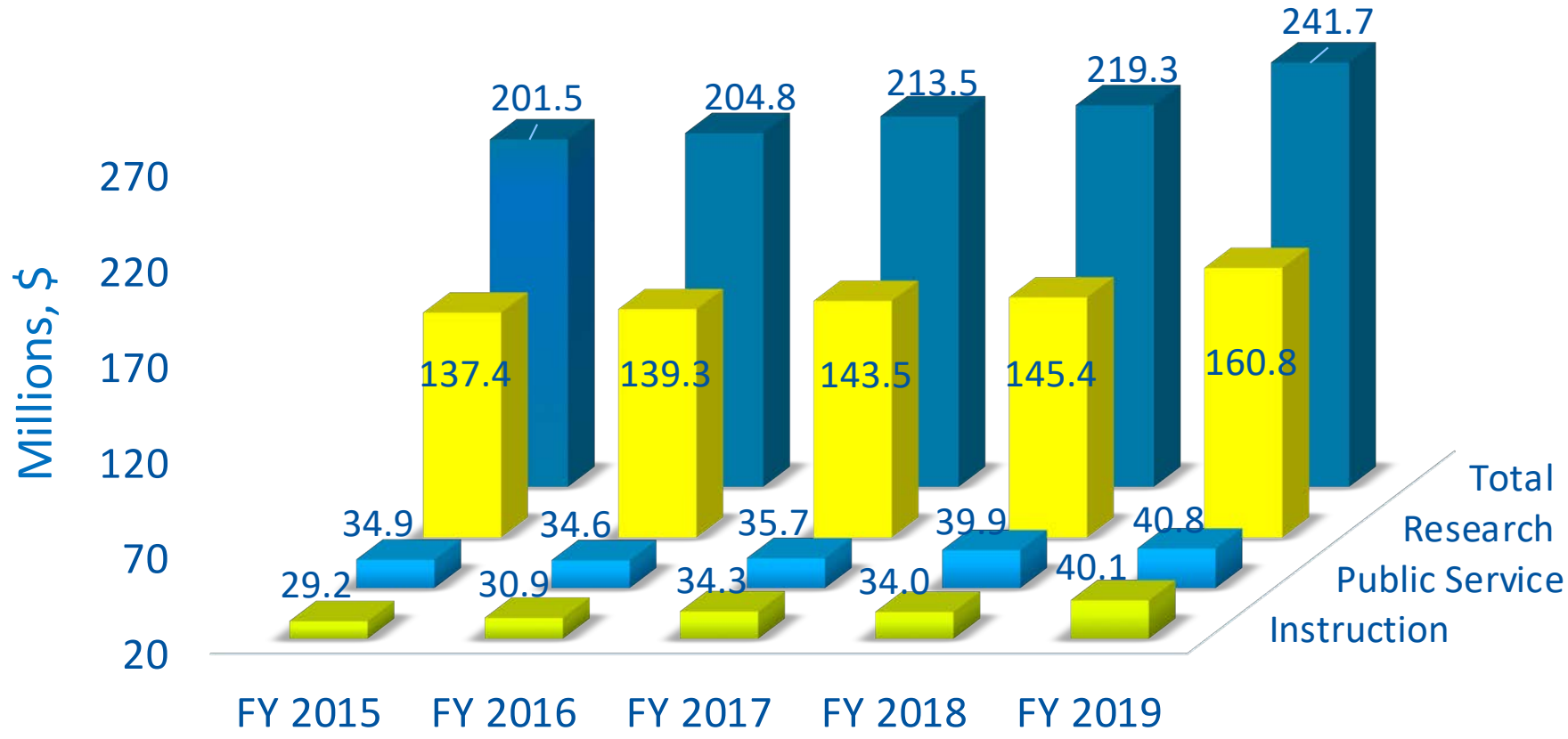
1800 Proposals	708 Active Awards	$1.04B Requested in Funding
2336 Human Subjects Protocols	162 Animal Protocols	13 Audits

Research Expenditures–By Sponsor

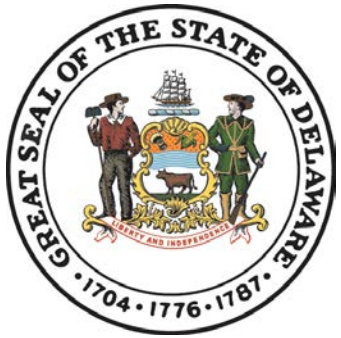
+11% vs. FY18
and record high



Expenditures–Last Five Years



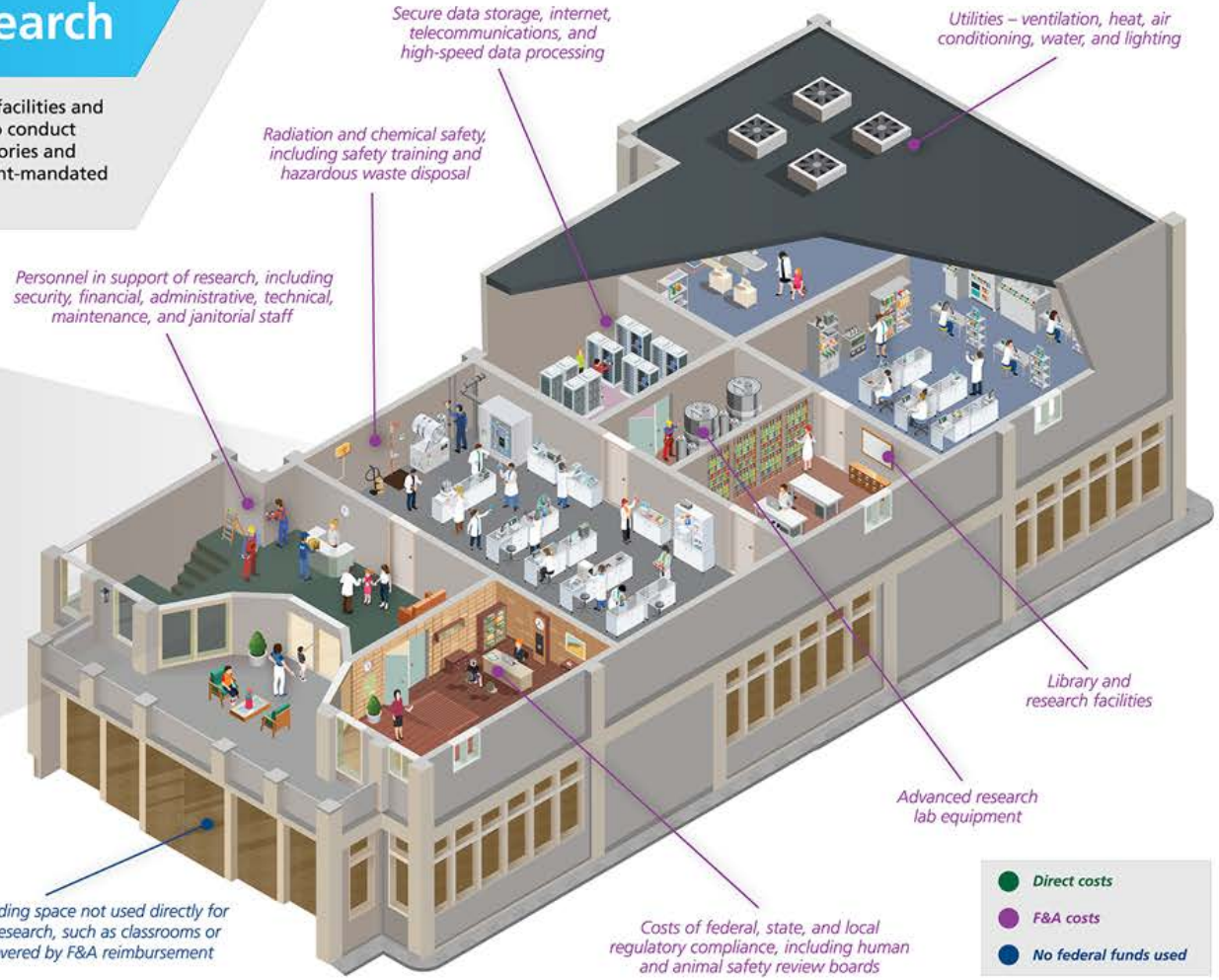
What Do Sponsors' Funds Pay For?



Costs of Federally Sponsored Research

The total cost of federally sponsored research includes a combination of both direct and facilities and administrative (F&A) costs. Both types of expenditures are key to an institution's ability to conduct cutting-edge research. F&A consists of the construction and maintenance costs of laboratories and high-tech facilities; energy and utility expenses; and safety, security, and other government-mandated expenses. These costs are real and research cannot be conducted without them.

Direct costs - These expenses solely cover research and include lab supplies and equipment; salaries and stipends for researchers and graduate students; and travel costs for conducting and sharing research



AAMC | Association of American Universities | AIRI Association of Independent Research Institutes | Association of Public & Land-grant Universities | COGR Council On Governmental Relations

Direct costs –salaries and stipends for researchers and graduate students

lab supplies

travel costs for conducting and sharing research.

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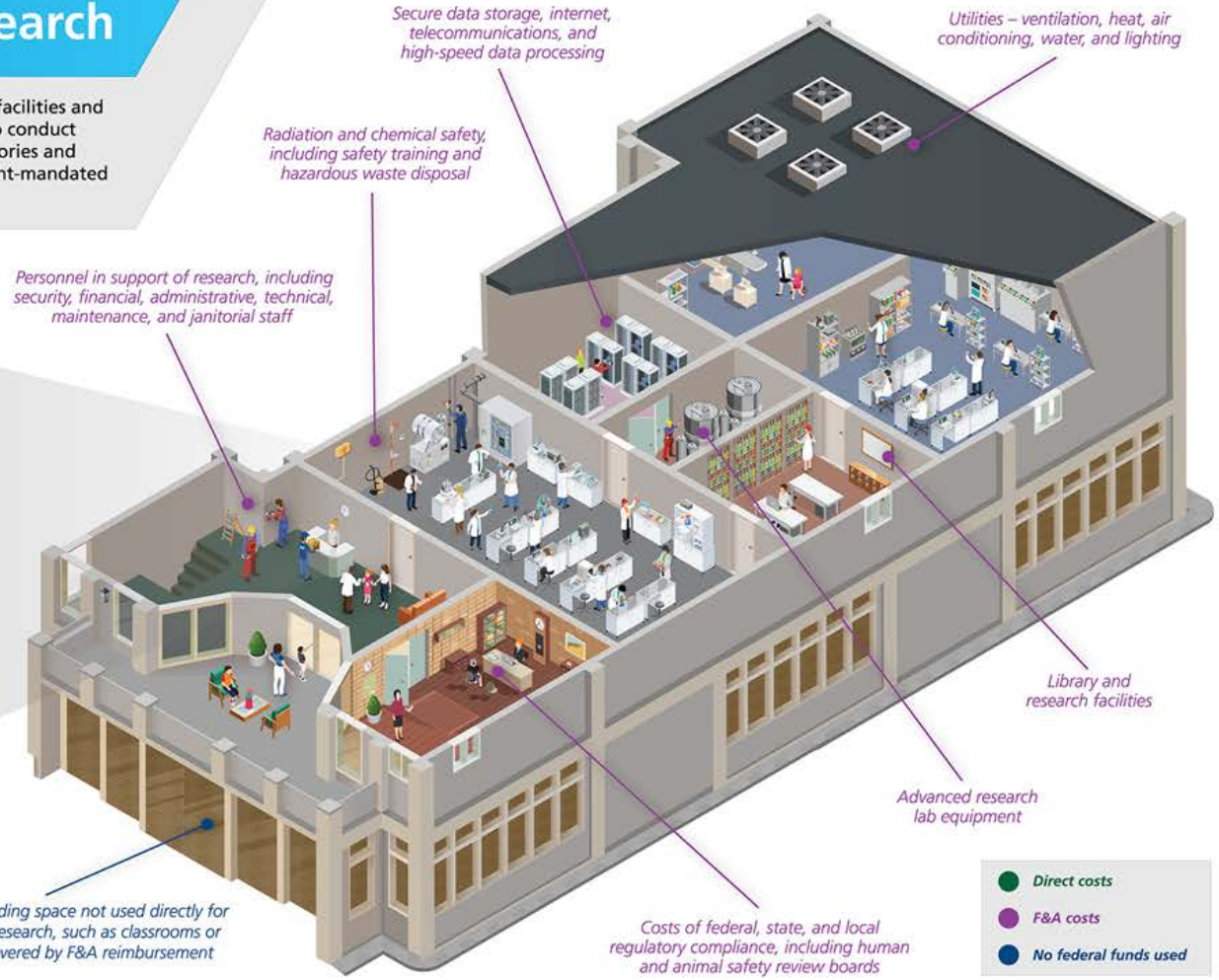

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F&A costs – Administrative, maintenance & custodial staff

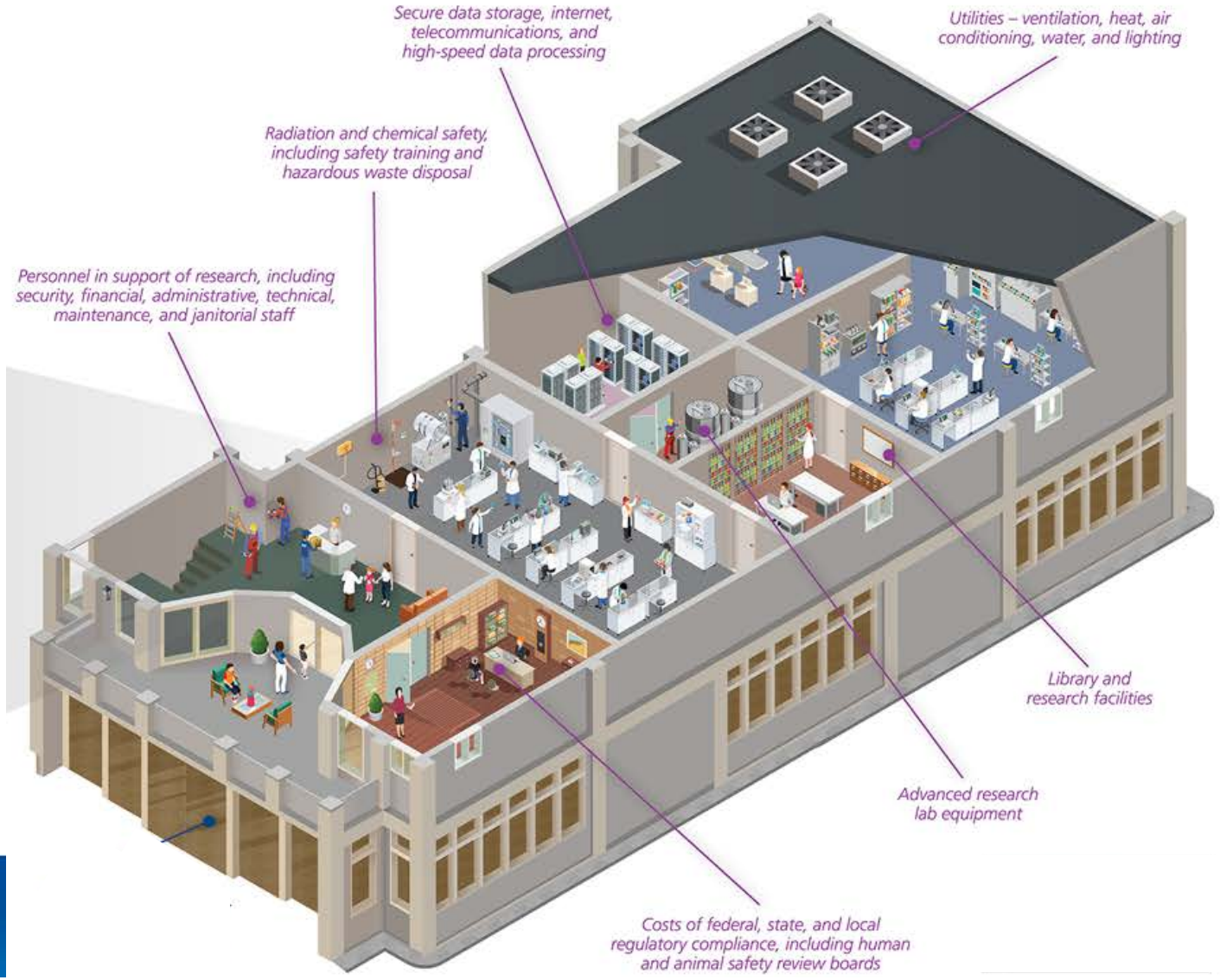
Utilities

IT

Library

Radiation & chemical safety

Compliance



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Facilities & Administrative Costs

Also known as F&A, indirect costs, overhead

<u>Real Costs</u> incurred while conducting research

- *related to providing **facilities** where research is performed*
- *related to the **administrative management** of the research*
- *"costs that are incurred for common or joint objectives and, therefore, cannot be identified readily and specifically with a particular sponsored project"*

***F&A is reimbursement for costs already incurred in the performance of research** (federally created cost recovery mechanism).*

Facilities & Administrative Costs
Myths

F&A is a centrally administered "tax" on research that allows universities to "profit."

F&A is a partial reimbursement for costs already incurred.

Direct costs are the only "real costs" –F&A diverts dollars away from research.

F&A costs are "real costs" without which faculty could not perform research.

Higher F&A rates hurt faculty chances of a proposal being funded.

No evidence that higher F&A rates influence federal award decisions.

F&A Rates are Negotiated with the Federal Government

Organized Research (OR)	FY2020 Proposed	FY2020 Negotiated
Administrative		
General Administration	8.79%	8.79%
Department Administration	16.52%	16.52%
Sponsored Programs Administration	5.46%	5.46%
Student Services Administration	0.00%	0.00%
Adjustment for Administrative Cap		-4.77%
Subtotal	30.77%	26.00%
Facilities		
Building	7.07%	6.55%
Equipment	4.28%	3.97%
Interest	1.49%	0.68%
O&M	21.20%	20.30%
Library	3.55%	2.00%
Subtotal	37.59%	33.50%
On Campus	**68.4%**	**59.5%**
Off Campus	**34.4%**	**28%**

eral Government

ent Services Administration	0.00%	0.00%
stment for Administrative Cap		-4.77%
otal	30.77%	26.00%
ties		
ing	7.07%	6.55%
oment	4.28%	3.97%
est	1.49%	0.68%
l	21.20%	20.30%
ry	3.55%	2.00%
otal	37.59%	33.50%
ampus	**68.4%**	**59.5%**
ampus	**34.4%**	**28%**

Admin. Cap Imposed by Gov't

Under-recovery

What and Why Core Facilities?

Core Research Facilities

"**Centralized shared research resources** that provide **access to instruments, technologies, services, as well as expert consultation** and other services to scientific and clinical investigators. The typical core facility is a discrete unit within an institution and may have dedicated personnel, equipment, and space for operations. In general, core facilities recover their cost, or a portion of their cost, of providing service in the form of user fees that are charged to an investigator's funds, often to NIH or other federal grants…**Core facilities may be fiscally supported by institutional funds, Federal funds, external revenue, other funding, or any combination of these**."

NIH Definition

Core Research Facilities

Necessary to recruit, retain and advance faculty research, which supports recruitment, retention and mentoring of students to degree completion.

Permits UD to be more competitive for national awards– center grants, etc.

"When the UD Nanofab came online we saw a clear uptick in the quality of applicants to our graduate program." ***UD Faculty Member***

"UD's state of the art core facilities allow me to do work I can't do elsewhere and make me more competitive for funding." ***UD Faculty Member***

UD Core Research Facilities

- Advanced Materials Characterization Lab
- Bioinformatics Core Facility
- Center for Biomedical and Brain Imaging
- Center for Translational Cancer Research
- Comparative Pathology Laboratory
- DBI BioImaging Center
- DPA Material Characterization Lab
- DRI Clinical Research Core
- DRI Cytomechanics Core
- Fischer Greenhouse and the Growth Chamber Facility
- Mass Spectrometry Core Facility
- NMR Laboratory
- Protein Production
- Proteomics and Mass Spectrometry Core Facility
- UD Nanofabrication Facility
- UD Sequencing and Genotyping Center
- W.M. Keck Center for Microscopy and Microanalysis
- X-Ray Crystallography Laboratory

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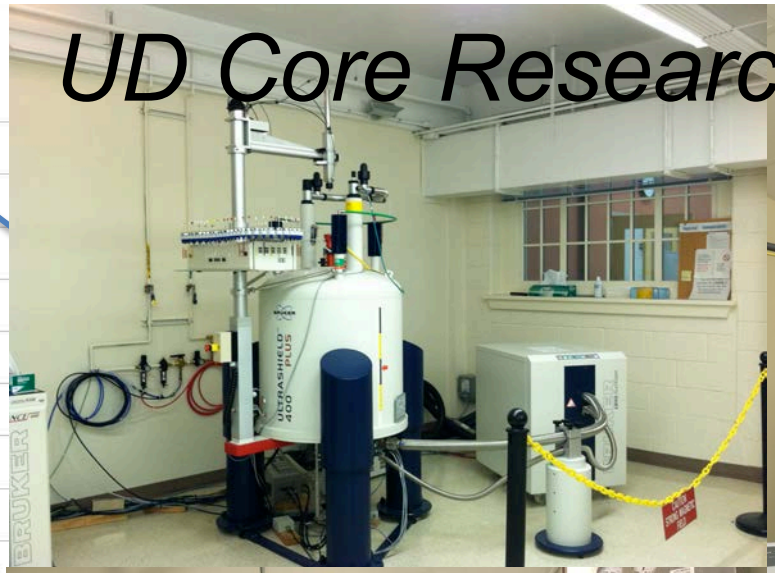
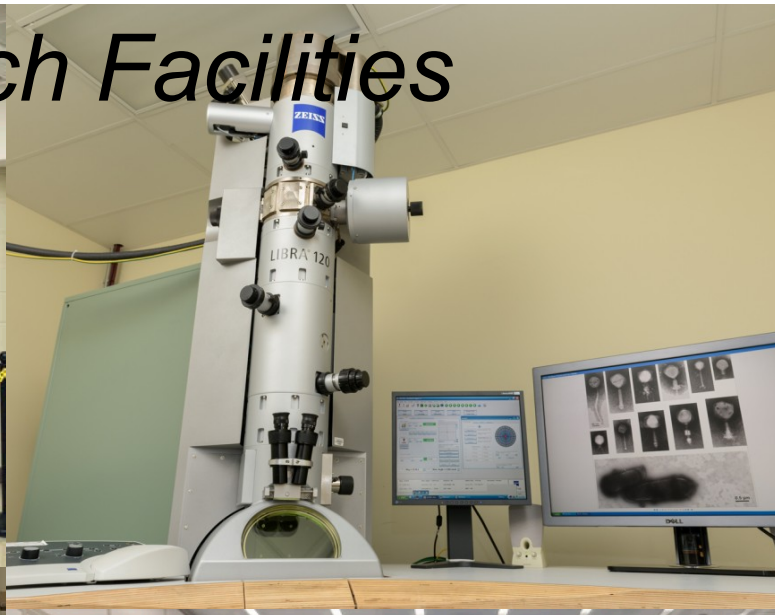
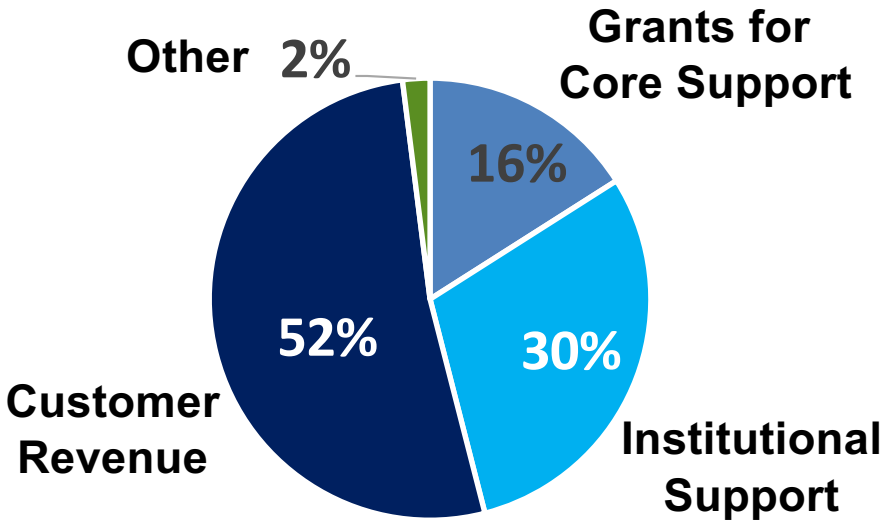


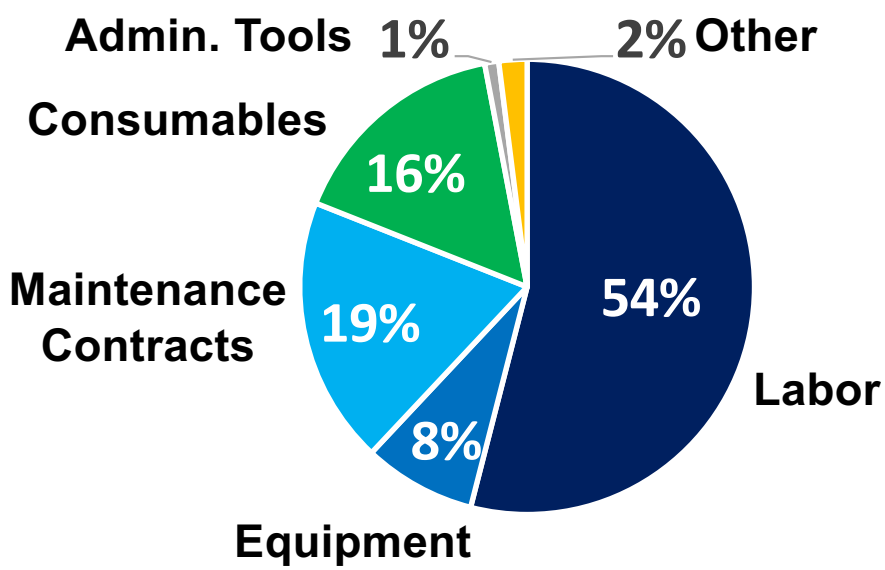


Core Research Facilities

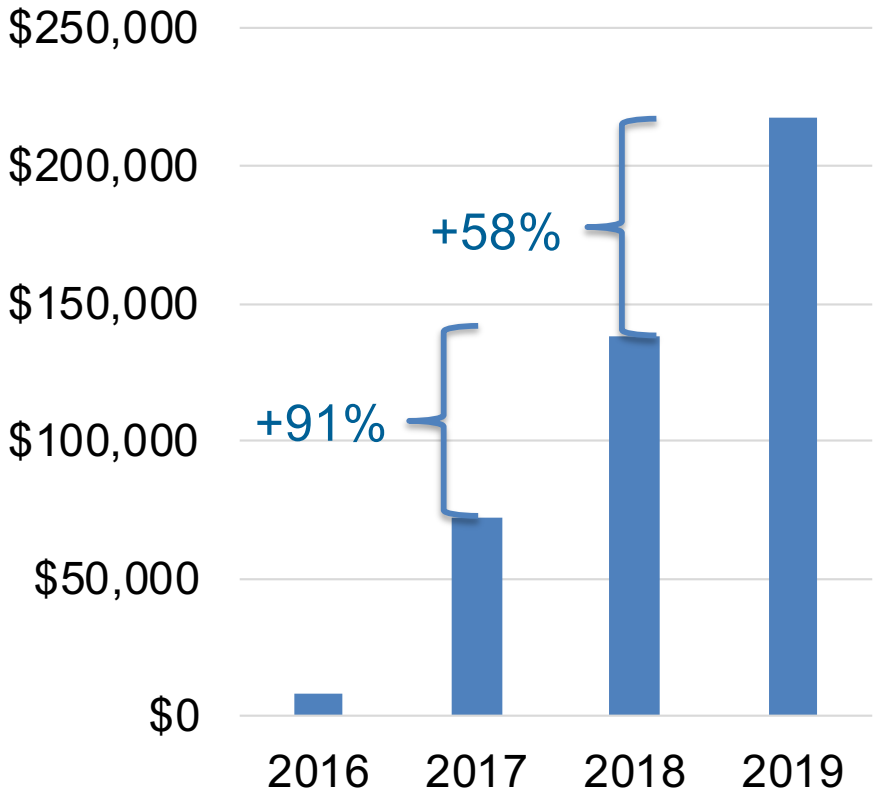
Revenue by Category

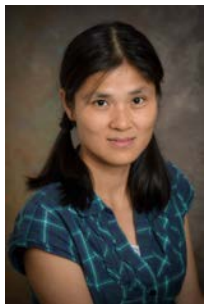


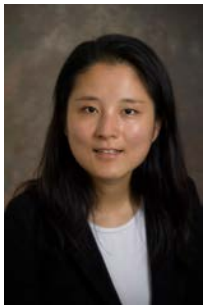
Expenses by Category



UD Nanofabrication Facility




Yuping Zeng


Tingyu Gu


Ben Jungfleisch

- 28 distinct faculty users.
- FY17-19: UD awards that were used in UDNF total $36.8M.

Technology Transfer and Business Development

Bayh-Dole Act, 1980

Non-profits, including universities, and small businesses may elect to retain title to innovations developed under federally-funded research programs.

Universities are encouraged to collaborate with commercial concerns to promote the utilization of inventions arising from federal funding.

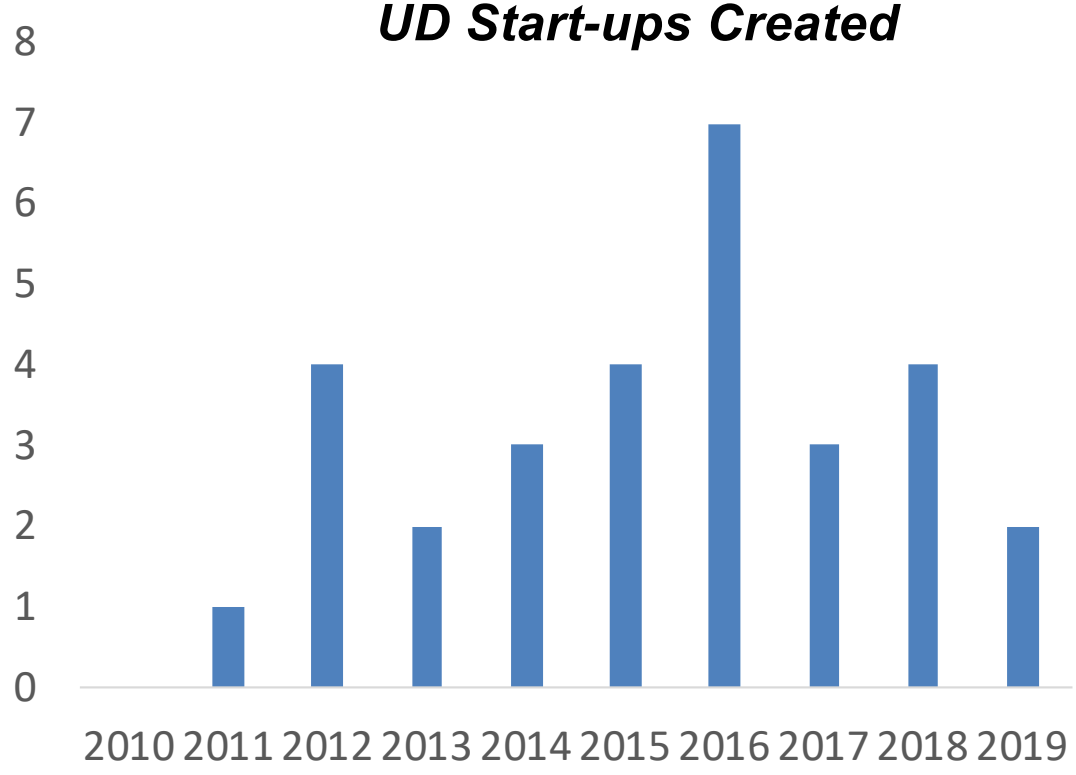
Universities are expected to file patents on inventions they elect to own.

UD Tech Transfer and Business Dev. Activity

FY10-FY19 (FY19)

Disclosures received:	490 (45)
Provisional patent apps:	460 (42)
Utility/PCT patent apps:	272 (33)
Licensing agreements:	65 (6)
Start-ups:	30 (2)

UD Start-ups Created



DELAWARE INNOVATION SPACE

A non-profit Incubator.

DELAWARE INNOVATION SPACE

27 (+8)

Companies

VIP = 12 (+4)
Early Stage = 10 (+2)
Anchor = 3 (0)

Graduates = 2 (+2)
Failed = 0

244 (+34)

Jobs

Early Stage = 122 (+25)
Anchor = 107 (0)
DISI = 6 (0)
Graduates = 9 (+9)

>$120M

Capital Raised

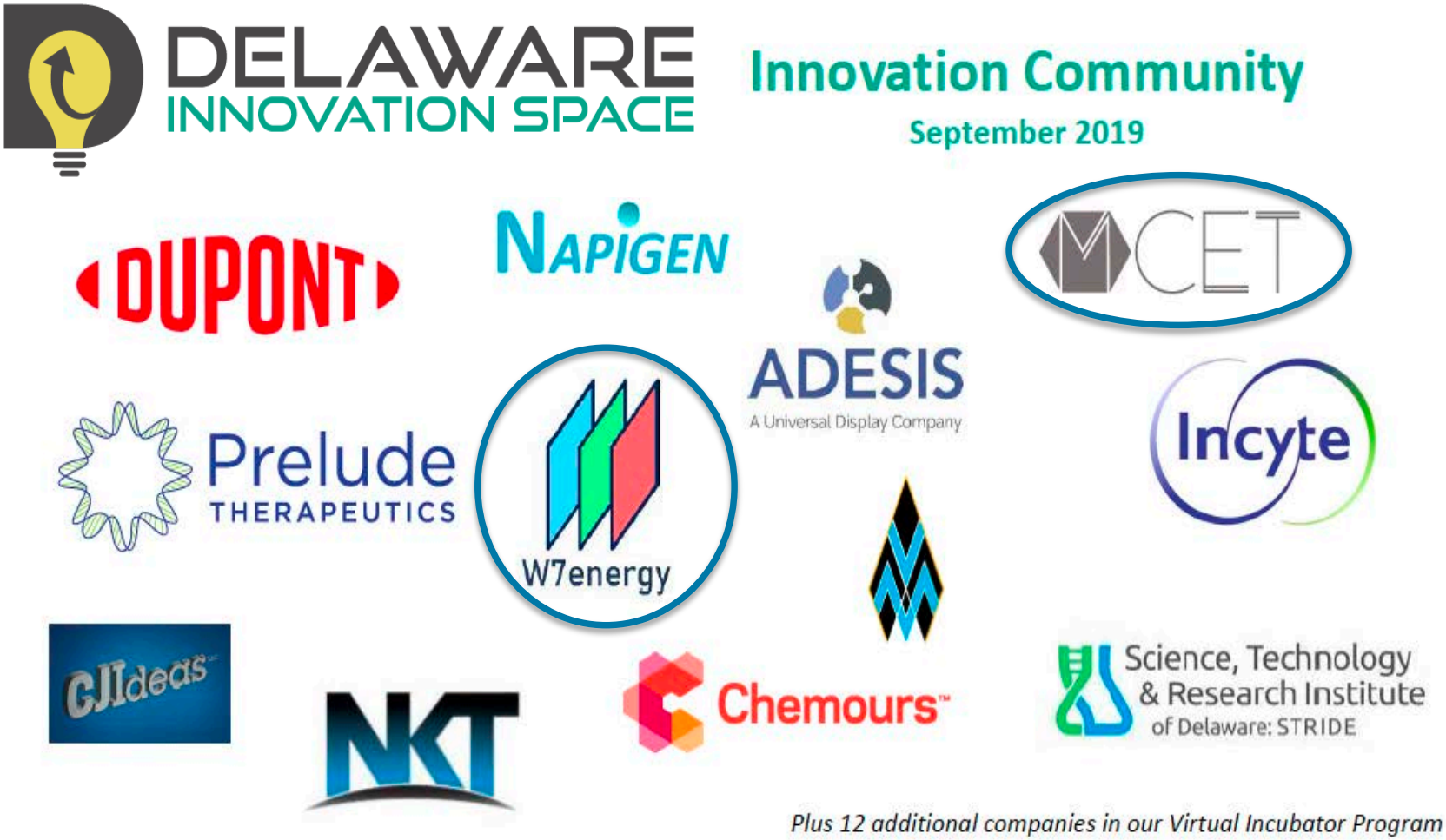
E1 = $90M
E2 = $30M
E3 = $5M
E4 = $1M
E5 = $950k
E6 = $300k

88%

DISI Occupancy

All occupiable space = 88% (+1%)

Early Stage = 32% (+12%)
Anchor = 56% (-11%)
Available = 12% (-1%)



Plus 12 additional companies in our Virtual Incubator Program