

# Research and Scholarship at William & Mary

April 25, 2024

Board of Visitors

Academic Affairs Committee

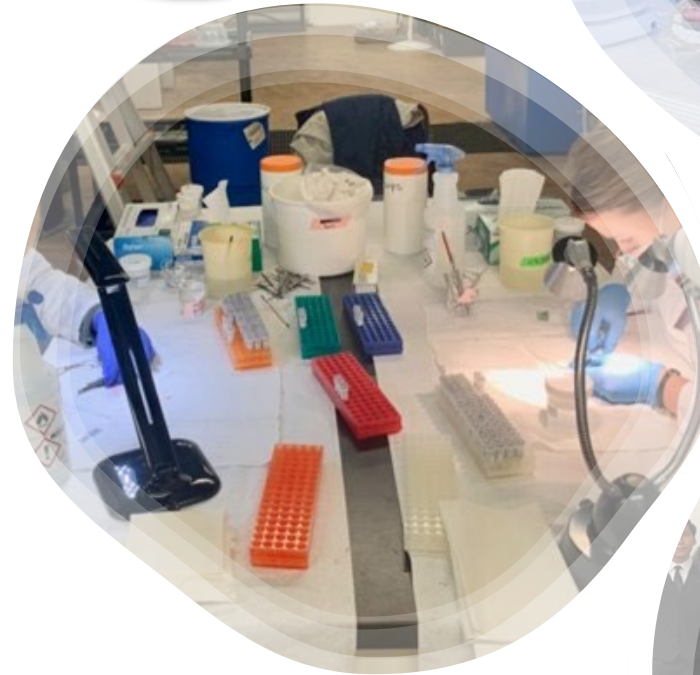
# Our Focus on Research Is Not New

“For the better part of a generation, William & Mary has struggled to come to terms with its evolution from a liberal arts college of genuine excellence to a small university that strives to balance a continuing commitment to quality undergraduate education with a limited number of equally high-quality graduate and professional programs. *We honor our past by retaining proudly our historic name, but we shall better serve our future if we embrace honestly the incontestable fact that we have become a university.*”

Former W&M President Tim Sullivan  
Inaugural Address, 1992

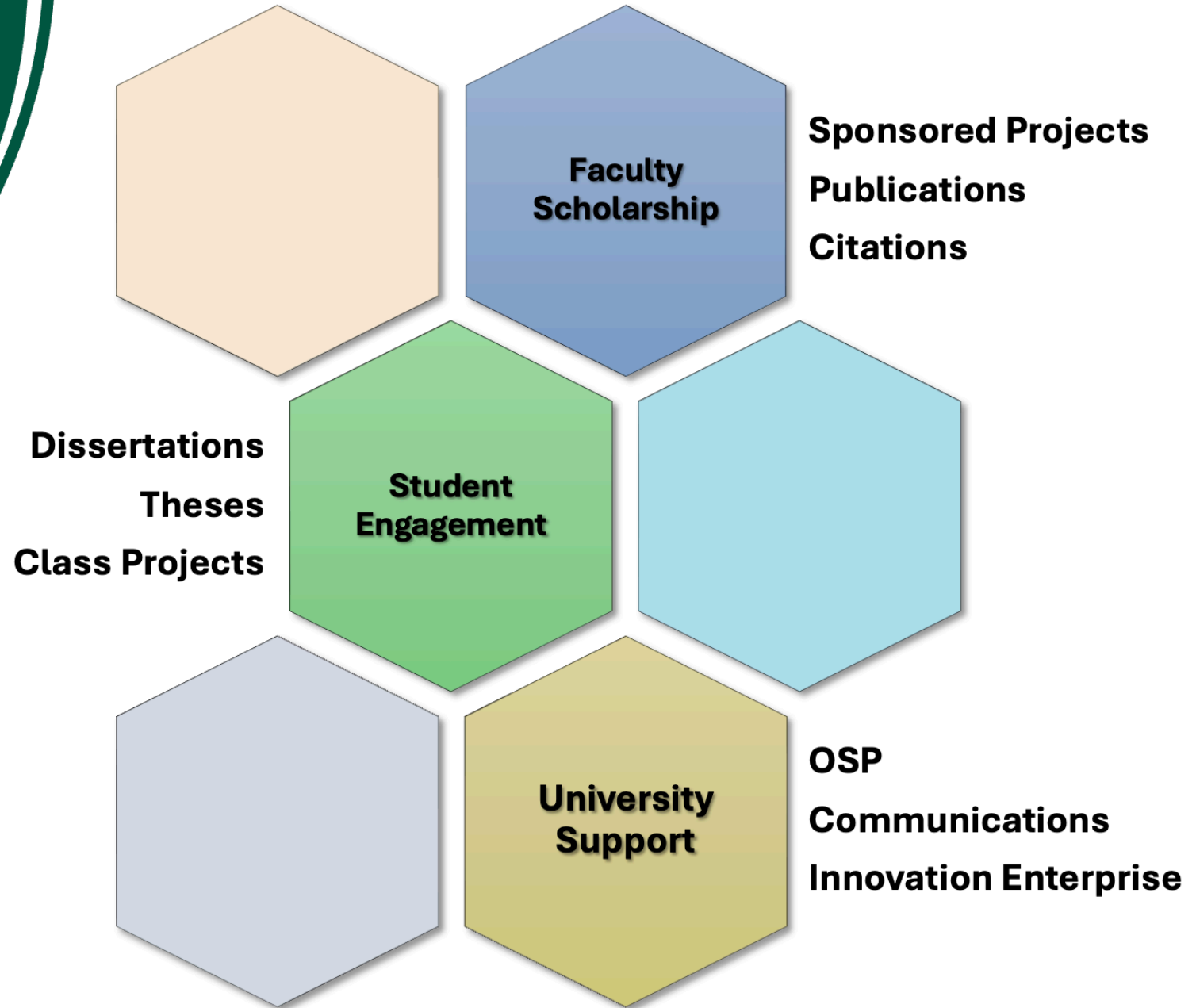
# Why Research Matters at W&M

- Leads to **new knowledge** and impactful innovations
- Enhances the **quality of education** and prepares students for **successful careers**
- Solves real-world problems and leads to **societal improvement**
- Strengthens W&M's national and international **reputation**
- Contributes to **economic development** and a thriving economy
- Supports **faculty growth** and advancement



# The Research Ecosystem

- Faculty driven
- Student engaging
- University supported

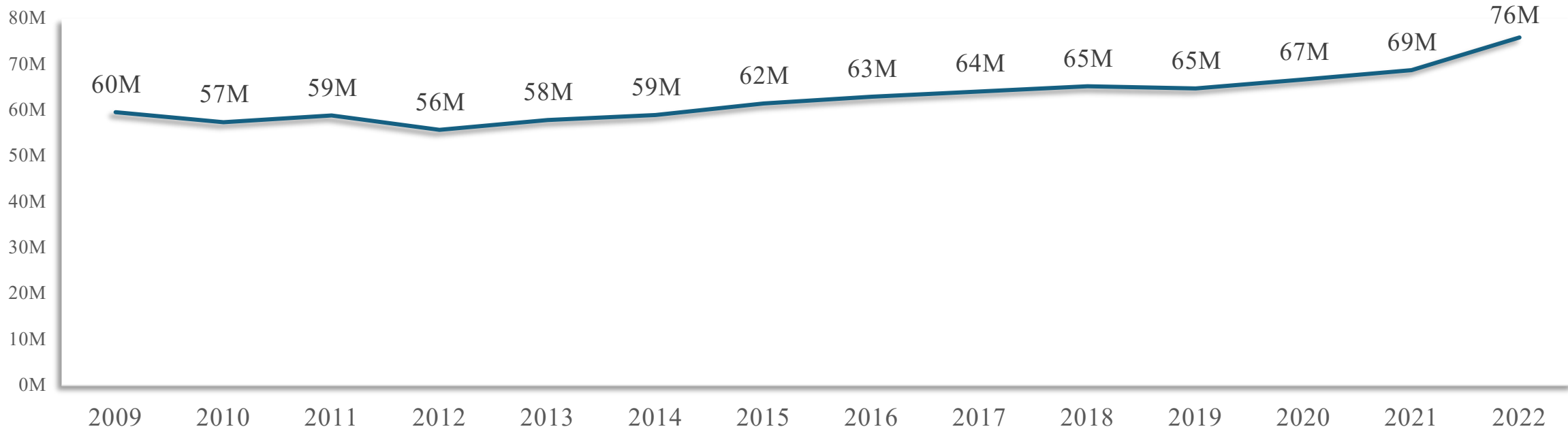


# TTE Faculty Positions Are Structured to Support Research & Scholarship

40% teaching, 40% research, 20% service

By 2009, W&M had reduced its teaching load to the more typical for research universities 2-2 to increase research activity

Expenditures Since 2009 Shift in Teaching Load (HERD)



# Number of TTE Faculty

Arts & Sciences

382

Business

39

Education

31

Law

27

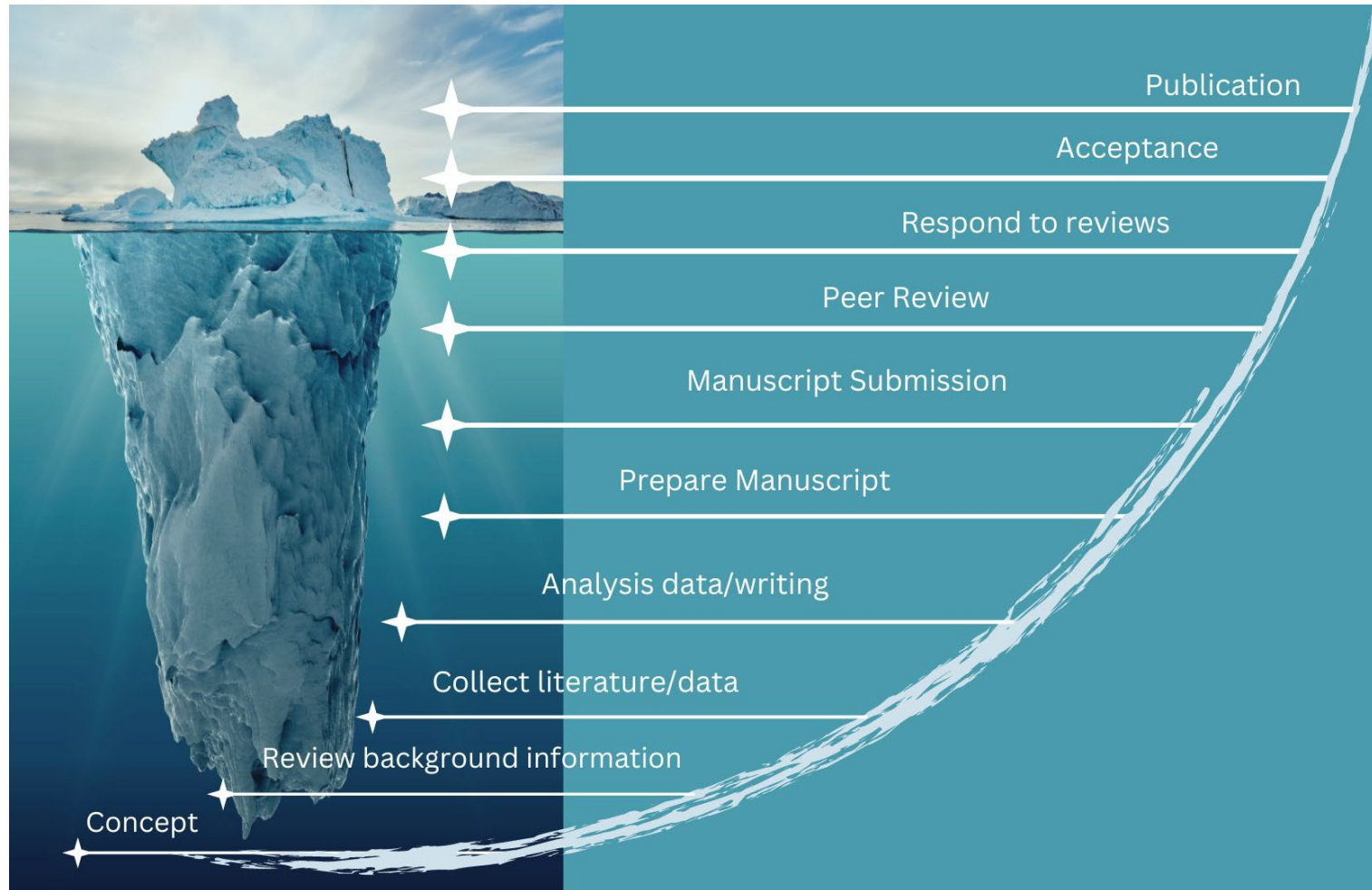
Marine Science

52

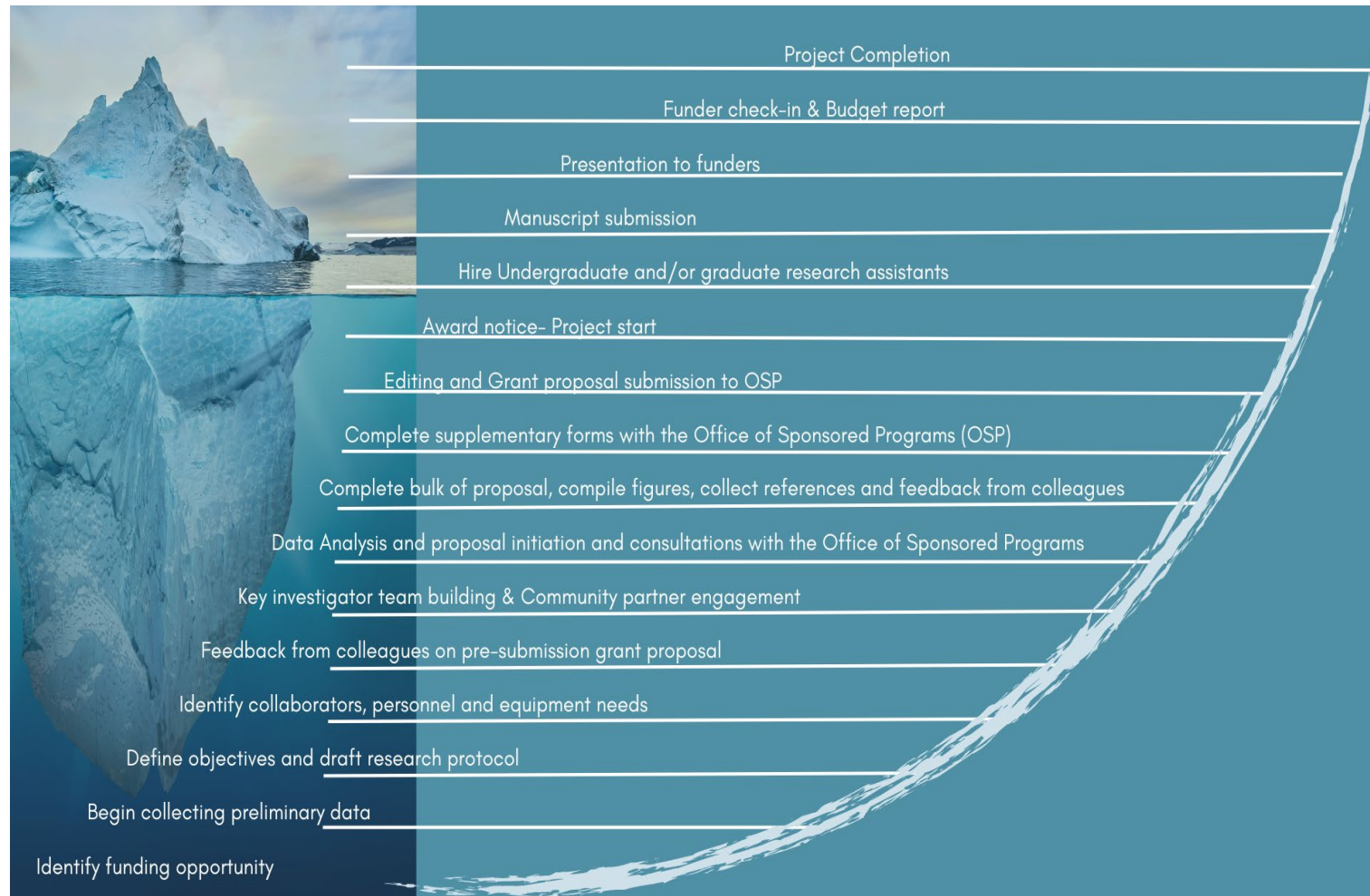
**531 TTE Faculty**

\*Numbers provided by school/unit deans

# The Process to Publication



# The Funded Research Process







External  
Views of  
Our Research  
Profile

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US News &  
World Report

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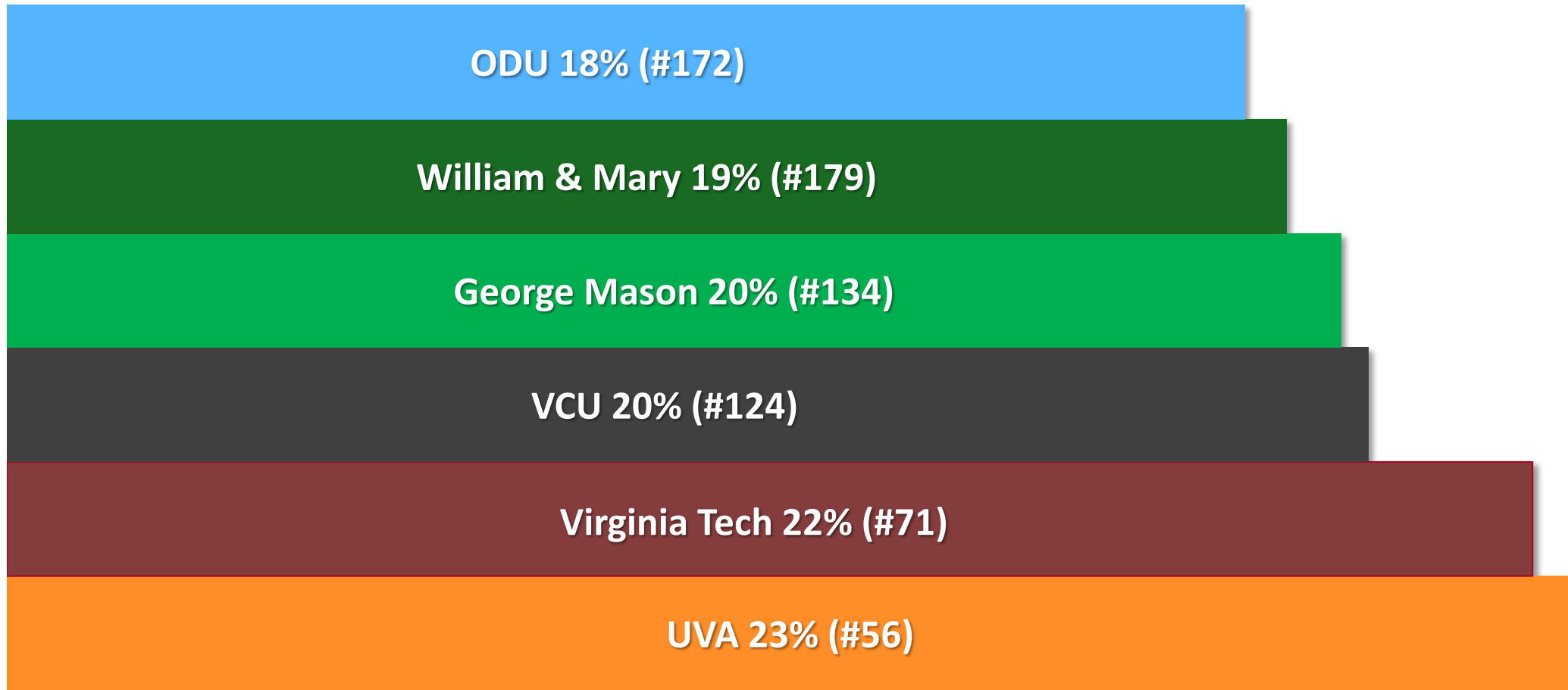
Carnegie  
Classification

# USNWR Shifts in Criteria For National Universities

2023 Rank	Removed Criteria (Weight)	New Criteria (Weight)	2024 Rank
#19	Alumni Giving Average (3%)	Borrower Debt (5%)	#81
#31	Terminal Degree Faculty (3%)	College Grads Earning More than HS Grads (5%)	#170
#34	High School Class Standing (2%)	First-Generation Grad Rates (2.5%)	#198
#243	Class Size (8%)	First-Generation Grad Rate Performance (2.5%)	#407
N/A	Graduate Debt Proportion Borrowing (2%)	Faculty Research (4%)*	#174

\* Average Rank - Faculty Research is composed of four metrics: citations per publication (1.25%); field-weighted citation impact (1.25%); publications in the top 5% of journals (1%); and publications in the top 25% of journals (.5%)

# USNWR Uses SCOPUS Data: % of Publications in the top 5% of Journals



0%

5%

10%

15%

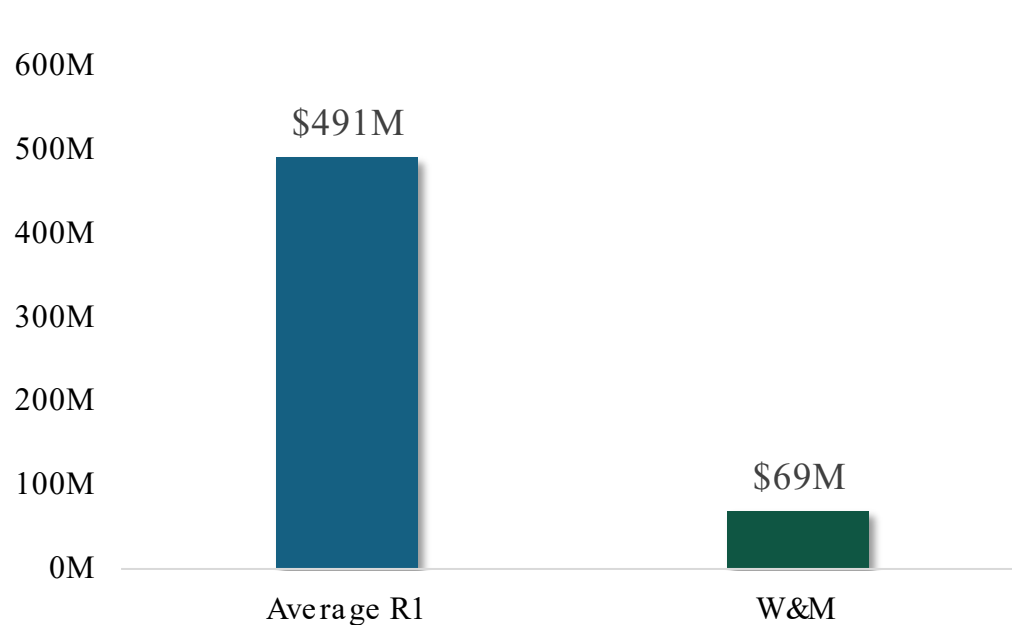
20%

25%

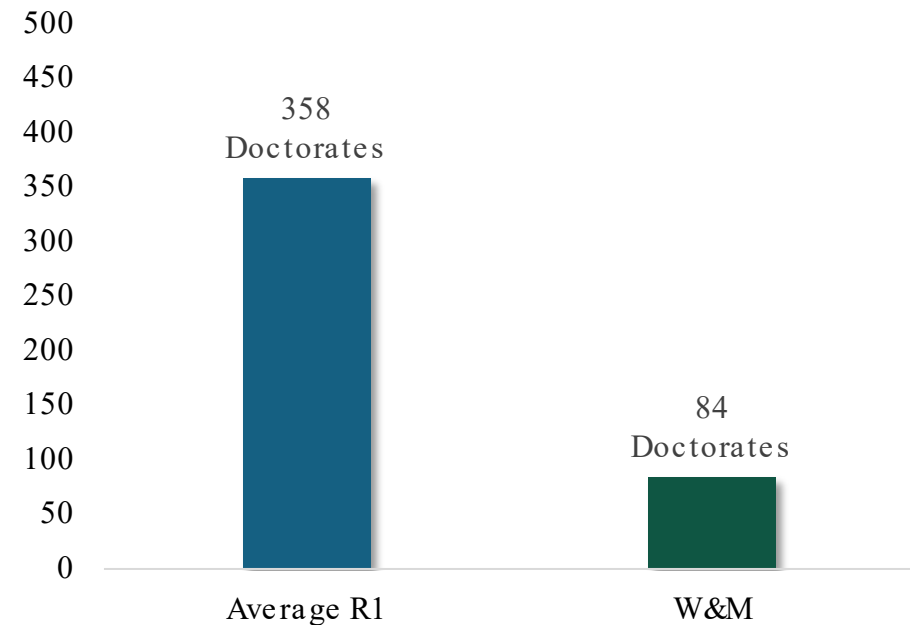
# Carnegie's R1 Reference Groups

- New 2025 Carnegie classification for R1 institutions will be based on two criteria:
  - research expenditures (>50M), and
  - awarded doctoral degrees (>70).
- William & Mary's doctoral degrees and research expenditures currently position us within the lower range of R1 universities.

R&D Spending FY'21 (Millions)

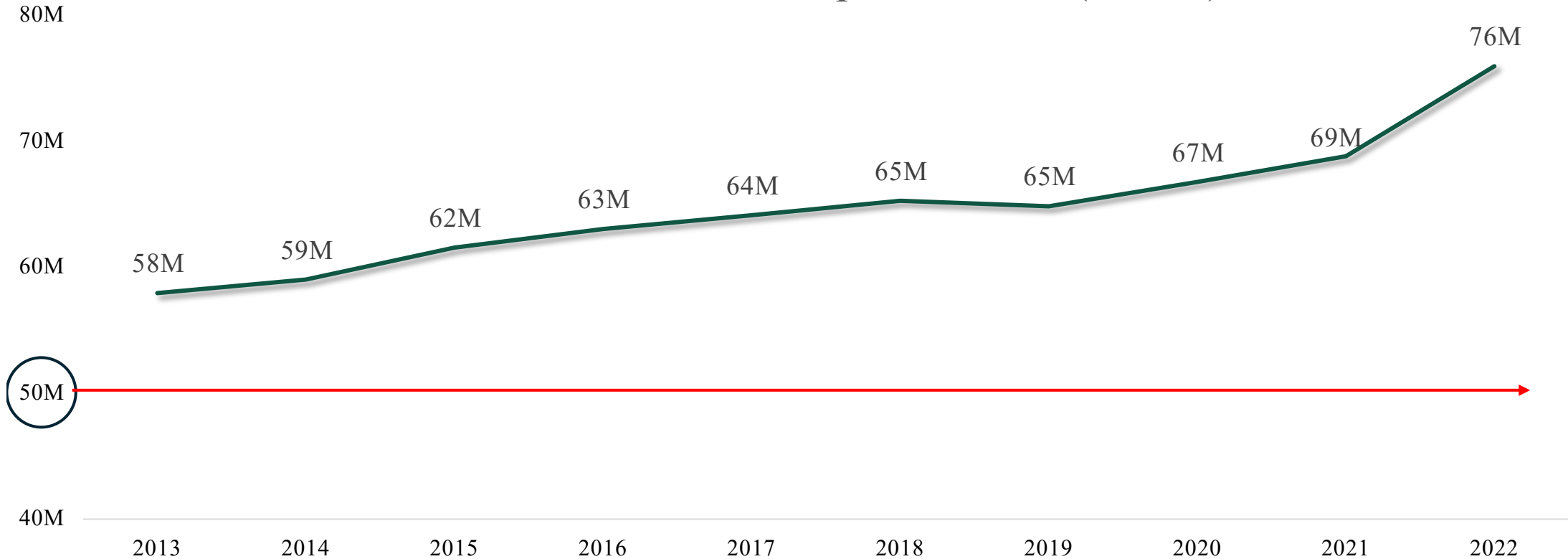


Doctorates Awarded 21-22



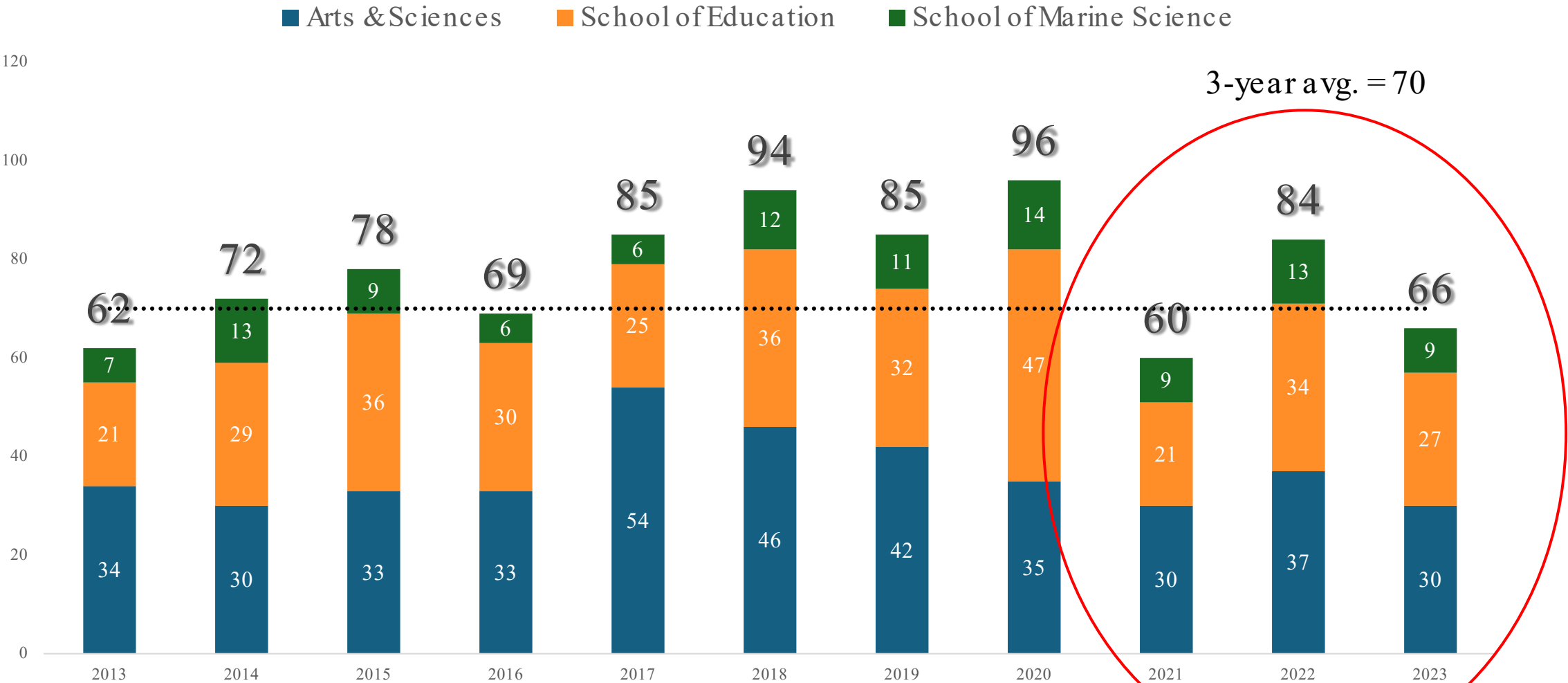
# New Carnegie Metric: R&D Expenditures (>\$50M)

Total W&M R&D Expenditures (HERD)



HERD expenditures include funds from federal, state, and local, business, nonprofit, and institutional funds.

# New Carnegie Metric: Doctoral Degrees Conferred (>70)

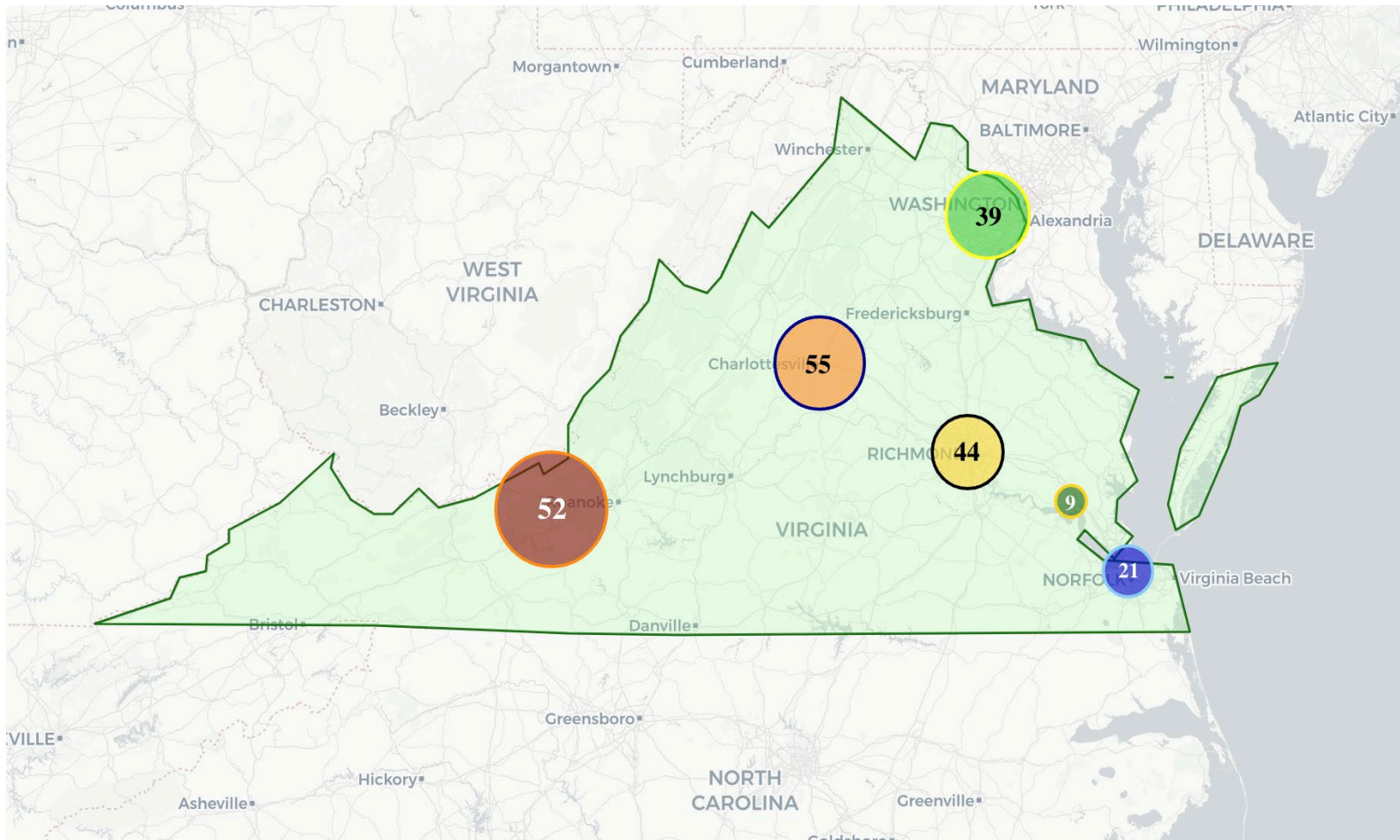


The 2025 Basic Classification will be based on a three-year average (2020-21, 2021-22, and 2022-23) of reported data to IPEDS.

# W&M Doctoral Pipeline

Doctoral Programs	Fall 2013 Total Students	Fall 2023 Total Students	2023 New Doctoral Students	2023 Doctorates Conferred
Anthropology	28	24	2	1
American Studies	55	29	2	1
History	51	38	5	4
Applied Science	34	22	10	9
Computer Science	69	76	22	8
Physics	73	50	7	7
Counselor Education	19	16	4	5
EPPL(Ph.D. &Ed.D.)	152	157	18	22
Marine Science	48	45	6	9
Total	529	457 (14% decrease from 2013)	76	66

# Doctoral Comparison with Virginia Universities



University	Doctoral Enrollment
W&M	458 (51)
ODU	1,336 (64)
VCU	1,784 (41)
GMU	2,219 (57)
UVA	2,440 (44)
VT	3,076 (59)

(Size of circle=total grad enrollment; figure inside the circle is # of doctoral programs)



# Building Internal Data: Faculty Success

- To date, tracking research/scholarship data at the university level has been limited.
- OSP tracks funding related to grants and contracts.
- Faculty Success, a new software to track scholarship and publication data:
  - Has not yet been consistently adopted and implemented across schools.
  - A&S is in the process of inputting its data for 40+ diverse units. Most of the other schools have completed implementation and are operational.
  - Full implementation and regular, consistent use across the schools will enable ready access to relevant data for planning and recognition.

# Financial Indicators of Funding Success (OSP, 2023)

- Proposals Submitted – Reflects Effort

336	Main Campus	194	Marine Science
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# unique faculty submitting: 145 (main campus), 55 (Marine Science)

- Awards Received – Reflects Success

178	Main Campus	105	Marine Science
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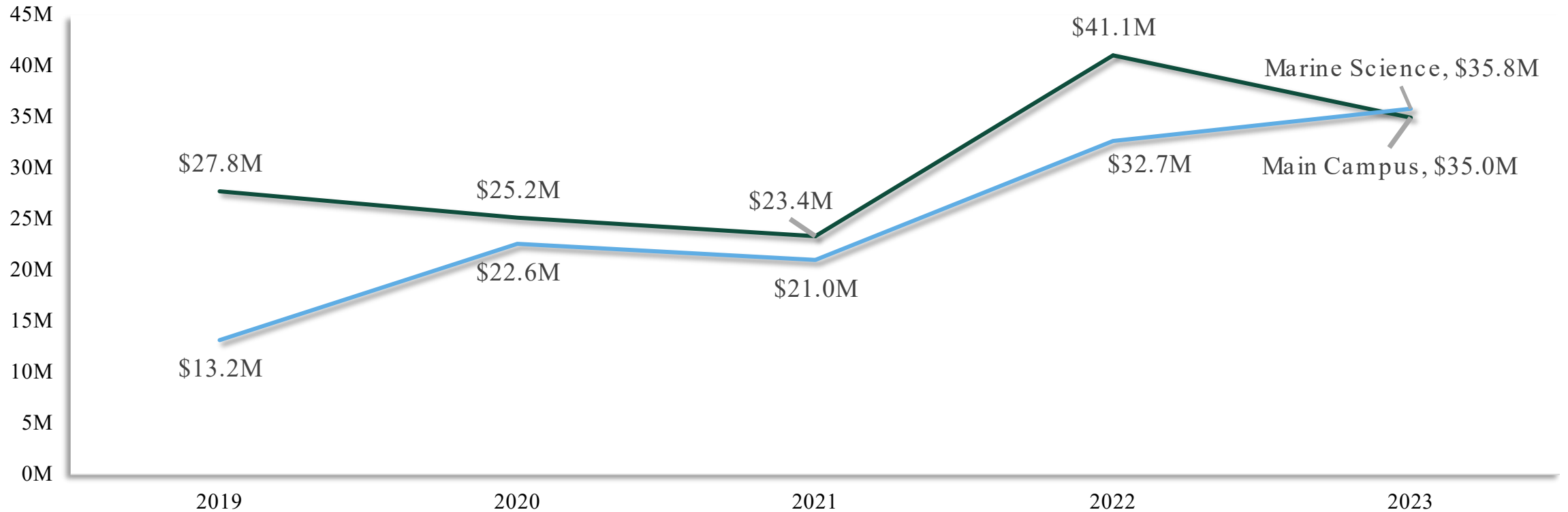
(\$35M)

(\$36M)

- Expenditures – Reflects Progress

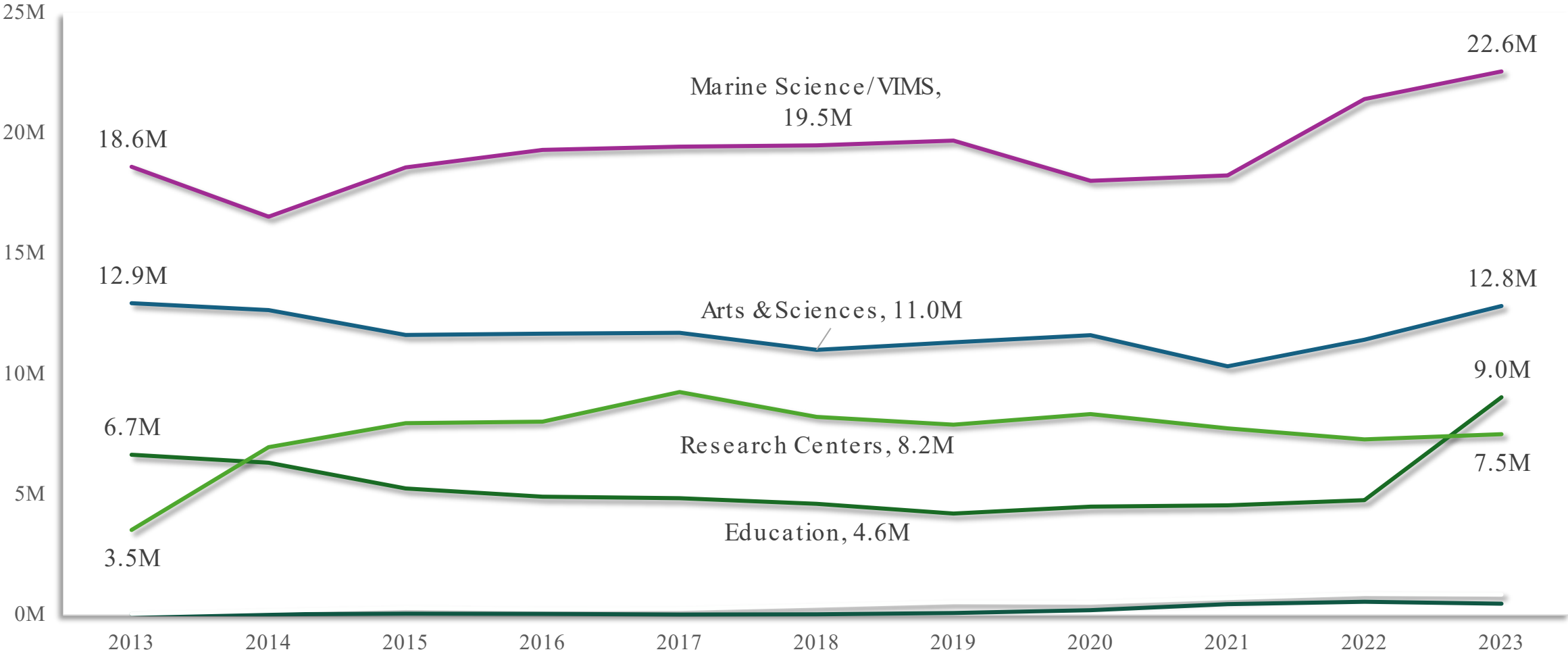
\$32M	Main Campus	\$23M	Marine Science
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# Awards Total by Fiscal Year (OSP)



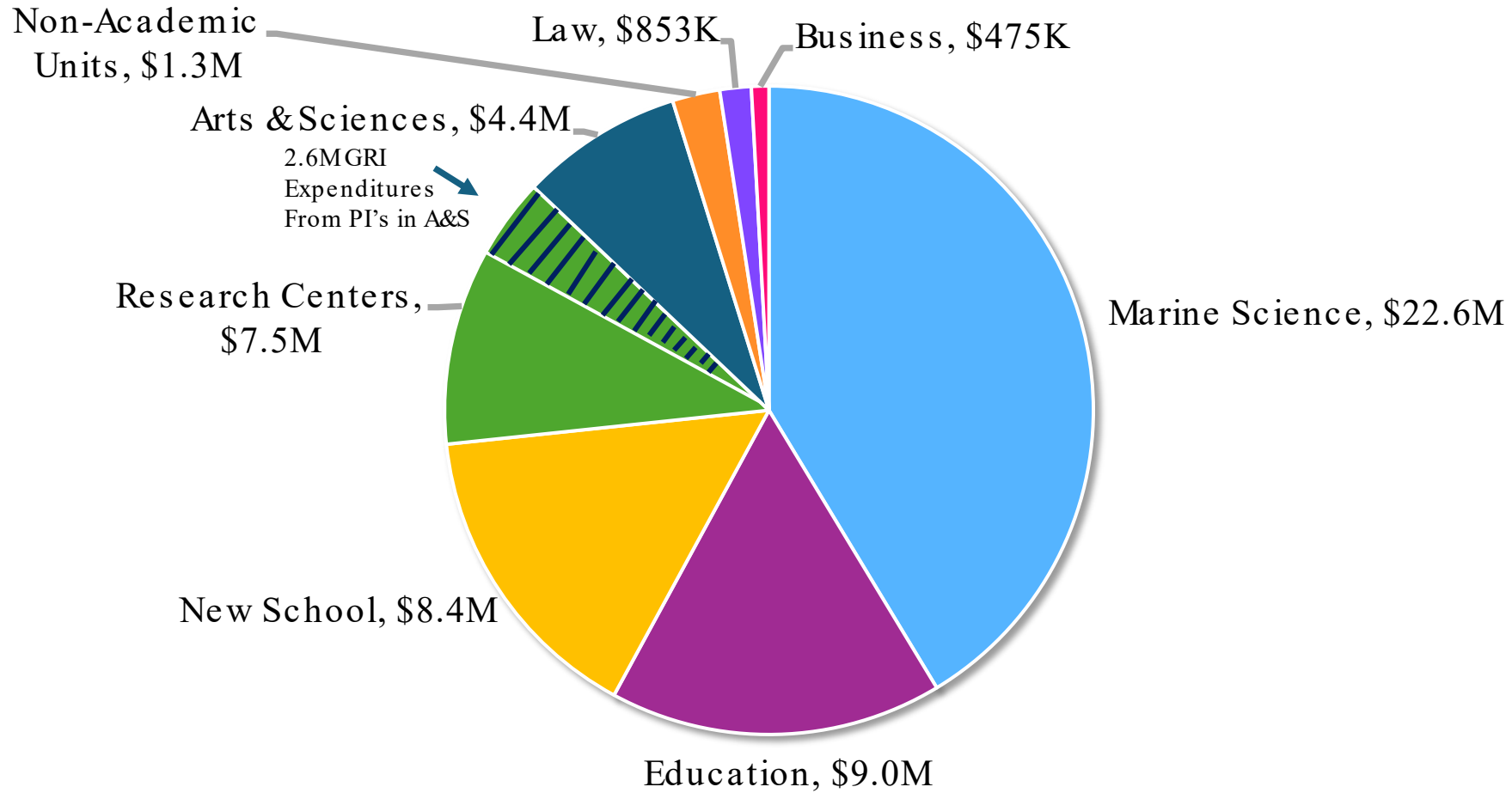
# Total External Research Expenditures (OSP)

Arts & Sciences   Business   Education   Marine Science/VIMS   Research Centers



2023: \$32M Main Campus / \$22.5M Marine Science

# FY'23 Sponsored Expenditures (OSP)



- Marine Science
- Education
- New School
- Research Centers
- Arts & Sciences
- Non-Academic Units
- Law
- Business

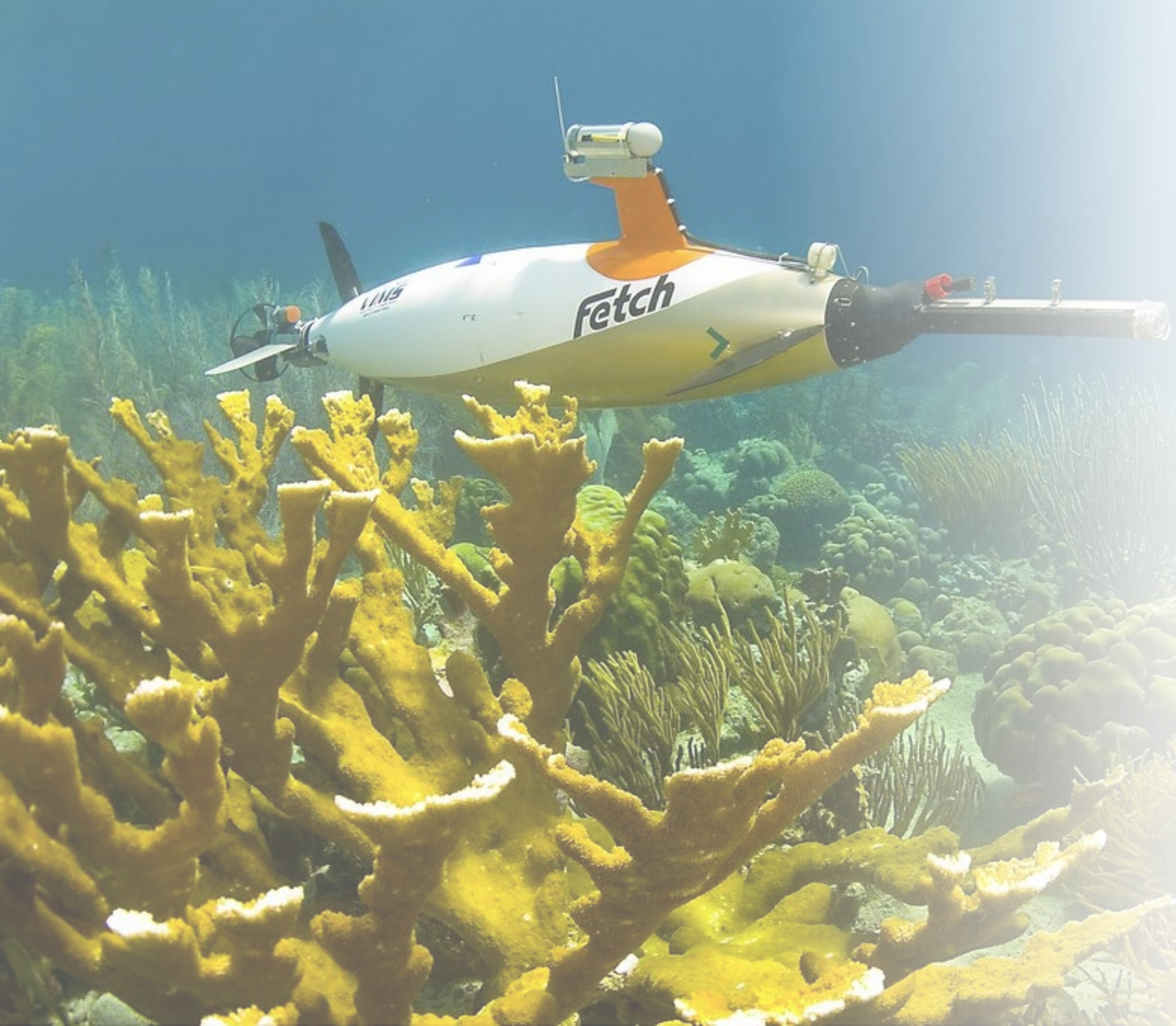
# Current Carnegie Reference Points

Predicted Aggregate Rank (Basic Classification)	University	Doctorates '21-22	R&D FY'21 (HERD)	Move to R1 in 2025?
157	American University	68	\$66M	No
158	San Diego State University	106	\$108M	Yes
159	University of Rhode Island	93	\$129M	Yes
160	Saint Louis University	203	\$79M	Yes
161	University of California-Merced	105	\$46M	No
162	William & Mary	84	\$69M	Yes
163	University of Massachusetts-Boston	84	\$64M	Yes
164	Southern Illinois University-Carbondale	117	\$47M	No
165	Howard University	86	\$52M	Yes
166	Loyola University Chicago	125	\$44M	No
167	University of Dayton	49	\$191M	No



# Thanks to...

- Pam Eddy
- Dane Pascoe
- Martha Wescoat-Andes
- Bernie Kulas
- Dennis Manos
- Adrienne Howard
- The W&M Deans
- and Faculty Assembly



**A Case  
Example of  
Data  
Utilization:  
VIMS/Marine  
Science**



# Case Highlights

- Research Culture for Graduate Students
  - Grant Support
  - Student Publications
- Highest amount of grant awards on campus
- 1st-year user of Faculty Success
  - Ability to report on faculty and graduate student contributions
  - Qualitative and quantitative data for annual reviews
- Fall 2023—a total of 92 graduate students (45 PhD, 38 MS, 9 MA)

# VIMS/School of Marine Science

- **Definition of Research Active:**

Faculty have external funding to support 15%-30% of their salaries and those of their students and laboratory personnel.

- **Research metrics:**

- Number, source, and total dollars associated with competitive grants and contracts
- Number of peer-reviewed publications and impact/impact factor of outlets associated with those publications
- Number and types of additional publications (including books, book chapters, grant reports, etc.)
- Presentations at conferences (local, regional, national, international)
- Intellectual property (patents, copyrights, software, etc.)

# VIMS/School of Marine Science: Disciplinary Norms

Disciplinary Norms*	W&M Faculty Averages 2021-2023 (47 faculty)
Greater than an average two-publications in peer-reviewed outlets per year (annual pubs vary from 1-15 papers)	<ul style="list-style-type: none"><li>• Average of 2.9 peer-reviewed publications per faculty member/year (range of 1-15)</li><li>• Total citations of VIMS faculty publications = 48,751</li><li>• Avg. citations per year of VIMS faculty publications = <b>16,250</b></li><li>• 11 Intellectual property contributions</li></ul>
Advising graduate students, postdoctoral scholars, technicians, and undergrads (typical individual faculty labs have 2-5 personnel at any)	25% of VIMS' 412 peer-reviewed publications in 2021-2023 were 1st authored by W&M students primarily by graduate students (PhD, MS, MA, but a few undergrad authors as well)  Grant funds support graduate students, labs, staff

\*Areas of Natural Science have varying norms

# VIMS/School of Marine Science: Measures of Research Excellence

Metrics (2021-2023)	VIMS/SMS (2021-2023)
Institutional and Society Awards	<p>Total of 37 W&amp;M/VIMS/Professional society awards given to VIMS faculty</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Community Surface Dynamics Modeling Systems Lifetime Achievement Award (Courtney Harris, 2023, Professional Society award, international scope)</li> <li>• NOAA/NOS Team Member of The Year Group Award (Joseph Zhang, 2022, national scope)</li> <li>• Excellence in Review Award (Rob Hale, 2022, awarded by journal Environmental Science &amp; Technology Letters, international scope)</li> </ul>
Publications in top-tier journals (overall and within disciplinary boundaries)	<p>\$8 million award from NOAA for VIMS to lead national program for the management of derelict fishing gear</p> <p>384 service roles in professional organizations</p>
Prestigious grant awards (e.g., NSF Career Award)	<ul style="list-style-type: none"> <li>• Average of 128 roles per year, 2.7 roles per faculty per year</li> <li>• Roles vary widely - organization president, conference/session organizer, manuscript reviewer, etc.</li> </ul>
Demonstrated societal impact (changes in policy, increases in industry output, influence on societal or economic outcomes-qualitative)	<p>313 advisory service roles - providing scientific advice, information, and products to agencies, representatives, and industries of the Commonwealth</p> <ul style="list-style-type: none"> <li>• Average of 104 roles per year, 2.2 roles per faculty per year</li> <li>• Roles vary widely – running a large-scale, multi-year fish survey that provides data for management agencies, reviewing permits for shoreline alterations, serving as technical advisors for agency/industry committees, etc.</li> </ul>

# VIMS/School of Marine Science: Research Activity

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<b>Year</b>	<b>Journal Article, Academic</b>	<b>Book Chapter, Scholarly Book</b>
2023	136	4
2022	109	4
2021	158	6
2020	115	2
2019	103	2

# VIMS/School of Marine Science: Grant Summary

- Grant Effectiveness—fewer applications and higher grant dollars
- In the academic year 2023/24, 52 research-active faculty supporting 92 graduate students
- Grant Submission/Success rate 52% (2019-2023)
- Research Awards—highest at the university (\$35.8 Million)
- Grants also support staff dollars—fueling research engine

# Way Forward: Internal actions related to external measures

- US News Rankings: Two KPI working groups looking at the new bibliometric measures and research grant trends to provide recommendations for improvement
- Carnegie R1 preparation: Analysis of doctoral pipeline, retention, and graduation for academic deans and program directors.

# Way Forward: Institutional Identity

- How do we explain/understand the type of R1 we are in light of our strengths?
  - Recognition for high-quality undergraduate teaching and mentored research
  - Overall scholarship and research in programs with and without a Ph.D. program and areas without high grant awards
  - Strong graduate programs with active external funding



# Way Forward: Growing the Research Profile of W&M

Complete implementation of Faculty Success in all schools and use as an ongoing tool

Define research expectations in all new TTE hires to include defined research expectation

Identify areas for additional infrastructure to support research endeavors

Strengthen the doctoral pipeline

Use of seed funds to nurture new research (e.g., Provost Interdisciplinary Grants, ARII)

Questions?

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# APPENDIX:

Example School  
Snapshots: Research,  
Scholarship, and Creative  
Endeavors

# School of Education

Definition of Research Active:  
Research active in the School of Education  
(2006 guidelines under review)

- Active publishing in peer-reviewed journals
- Presenting at professional conferences
- Continued engagement of work in progress.

Research metrics:

- 1-2 refereed publications each year
- 2 refereed conference presentations
- Evidence of work in progress

# School of Education: Research Activity

Year	Book, Chapter in Scholarly Book-New & Revised	Book, Scholarly-New & Revised	Journal Article, Academic Journal	Journal Article, Professional Journal
2023	25	8	77	7
2022	16	1	60	6
2021	22	0	68	2
2020	19	5	32	3
2019	12	3	36	4

# School of Business

## Definition of Research Active:

- Meaningful research activity over the last two calendar years.
- Published at least two peer-reviewed journal articles during the most recent five years.

## Research metrics:

- Research activity is broadly defined to recognize work in progress.
- Expected SJR\* publication minimum total
- Authoring one or more scholarly books (based on primary evidence) and meeting Sense Rated criteria

\* SCImago Journal Rank (SJR) >1  
above average citation potential

# School of Business: Research Activity

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Year	Peer-Reviewed Journal Article	Book Chapter	Book	Editor-Reviewed Journal Articles
2023	43	6	1	2
2022	40	1	1	0
2021	51	5	1	0
2020	41	2	1	3
2019	29	5	1	1

39 TTE Faculty