

# CHORUS FORUM

Real World Impact of Faculty Publications

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#### **Evaluation Framework**



#### Academic performance evaluation

Input	Teaching	Research and education		Outcomes and Impact
Resources	Education	Research & Education Processes (Throughput)	Knowledge created (Output)	Outcomes and Impact
100001300	<del></del>	Frocesses (Tiroughput)		
People, Funding, Equipment	Teaching and Learning Indicators	Culture, Collaborations	Quantity and Quality Indicators	Societal and Economic Impact

**Quantitative and Qualitative** 



#### **Evaluation Framework**

#### Academic performance evaluation

Input	Teaching	Research and education		Outcomes and Impact
Resources	2 Education	Research & Education Processes (Throughput)	Knowledge created (Output)	Outcomes and Impact
Human Capital: staff (researchers, Pis, teachers, support staff, etc.)	Teaching basic indicators: number of students, doctorates, bachelors	3.A Research culture: Is the research produced in an inclusive and diverse environment: ECR nurturing, collaboration, Gender, Race and ethnicity	Volume of publications as well as quality of publications	Societal impact: Impact on Local/National/Global society
Funding: Block funds, Grants, Industry funds, Donations, IP income, etc.	2.B Reputation: Qualitative indicators related to the quality of teaching (courses, student experience)	3.B seproducibility: Is this research reproducible: shared, availability of datasets, SW, methods and protocols, review citations	Traditional Research Output augmentation (local big data platform)	5.B  Economic impact: Impact on Local/National/Global economy
Equipment	2.C Learning environment	3.0 Sustainability of research practices: Carbon neutrality, team based effort	Other Traditional Research Output augmentation (preprint, datasets)	Impact on students, education system and priorities, alumni
	2.D Student outcomes and learning gains	3.D Interdisciplinarity: MI (Multidisciplinary index) II (Interdisciplinary Index)	4.D Non Publication Research Output augmentation (creative work, events, live performances, etc.)	
		3.E Knowledge exchange: Research in collaboration with Industry, mobility to and from Industry, etc.		

#### A Global Platform for Societal Impact: United Nations Sustainable Development Goals (SDGs)



















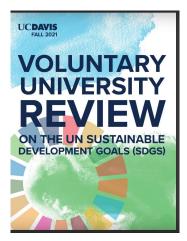


















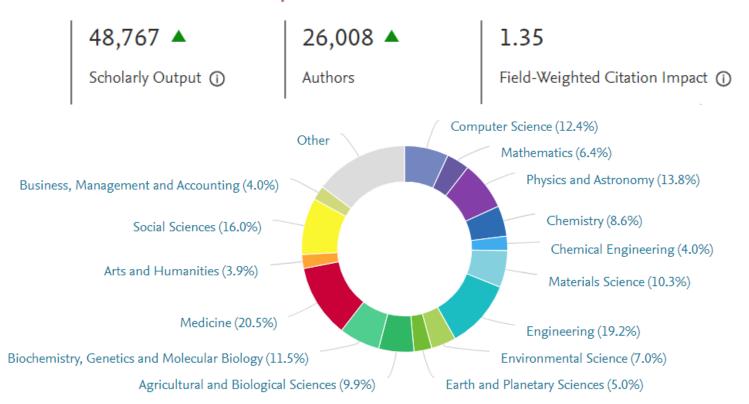




#### **HBCU Research Overview, 2013-2022**



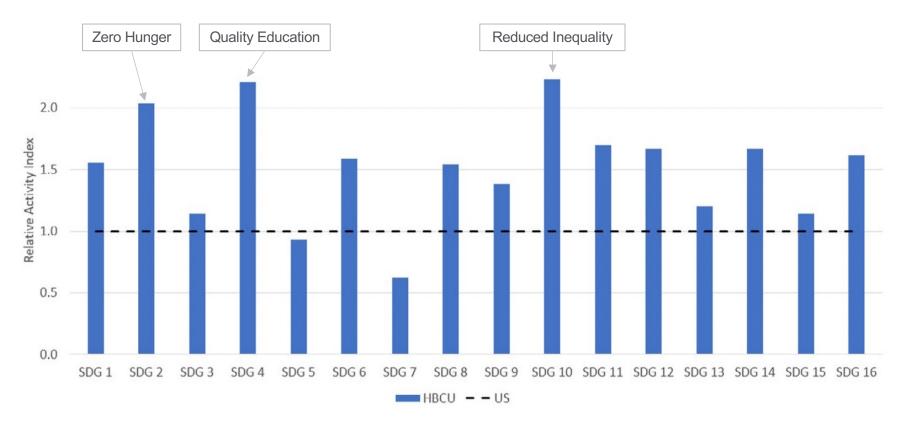
#### Overall research performance



Source: SciVal

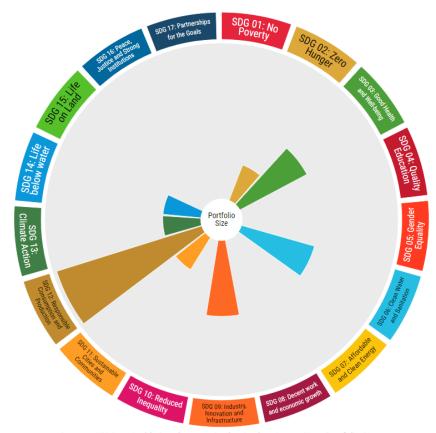
# **Relative Activity Index of HBCU SDG Contributions**





## **CUNY Linkage of Patents to UN SDGs**





Sectors: UN Sustainable Development Goals - Goals Sector Size: Portfolio Size

### **Examples of Policy Bodies Citing University of Glasgow Research**



Policy Bodies	Policies
Guidelines in PubMed Central	1231
World Health Organization	833
Publications Office of the European Union	429
The UK Government	385
NICE	338
UK Parliament Select Committee Publications	253
Analysis & Policy Observatory	214
OECD	186
IZA Institute of Labor Economics	179
Ifo Institute	166



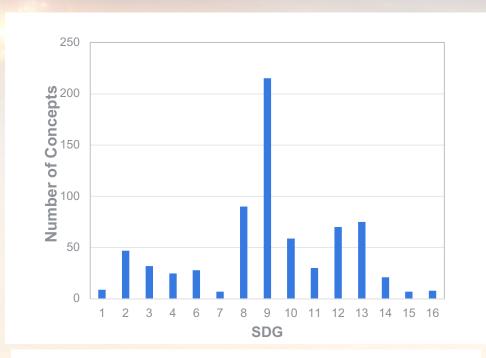
## CHIPS and Science Act of 2022: 10 Key Technology Areas

- Artificial Intelligence
- High Performance Computing
- Quantum Technology
- Advanced Manufacturing
- Disaster Preventions
- Advanced Communications
- Cybersecurity
- Biotech
- Advanced Energy Efficiency
- Material Science

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#### NSF: Technology, Innovation and Partnerships (TIP) Directorate

TIP's New Signature Program: Regional Innovation Engines ("Engines") to advance translational and use-inspired research



"ENGINES" - SUBMITTED PROJECT CONCEPTS MAPPED TO SDGs

Titles, keywords, and brief

Concept Outlines of publicly submitted project ideas were used to link 442 of 679 projects (about 2/3) to one or more SDGs.



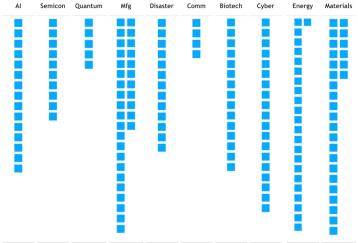
#### **Interactive Map of the Engines Development Awards Portfolio**







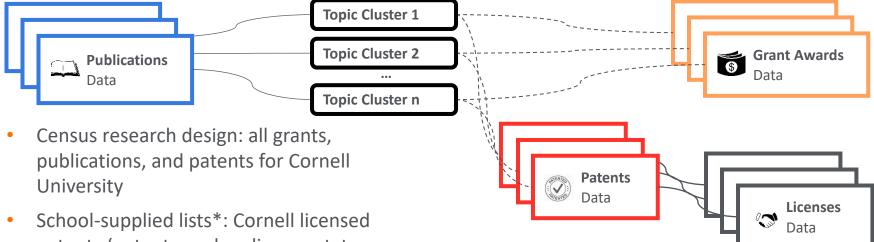
- The NSF Engines program supports projects across all key technology and challenge areas as outlined in the CHIPS and Science Act 2022, including artificial intelligence, high-performance computing or semiconductors, quantum information technology, robotics, technology for disaster prevention, communications technology, bioengineering, data storage, energy, and materials.
- (i) Hover over the name of a key technology area or a blue square to see more award details.



### **Commercialization Pipelines of Cornell R&D**



For Cornell University, what are the paths for research areas to commercialization success?



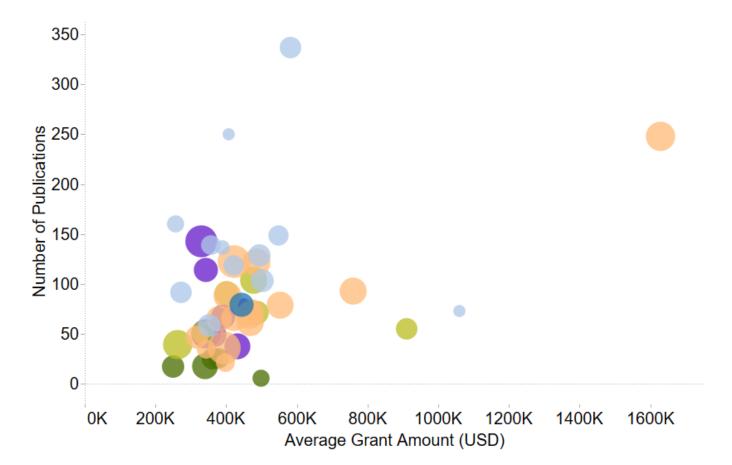
- patents (patent number, license status, licensee small business status, licensee startup status)
- Research topic proxy: STM model for topic-modelling

 Data covers 11,812 grants, 62,674 publications, 1,693 patent families, and 1,185 licenses

<sup>\*</sup> Ethics approval was obtained from the Cornell Institutional Review Board before proceeding with data collection

# Methodological Value for Ex-ante Analysis





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#### **Questions and Additional Information**

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