Cancer Engineering: *NIH Support*

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Bioengineering at NIH

NIBIB and BME Growth

2000: *Creation of NIBIB*

Public Law 106–580
106th Congress

An Act

Dec. 29, 2000
[H.R. 1795]

To amend the Public Health Service Act to establish the National Institute of Biomedical Imaging and Bioengineering.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National Institute of Biomedical Imaging and Bioengineering Establishment Act.
42 USC 201 note.
42 USC 285r note.

SECTION 1. SHORT TITLE.

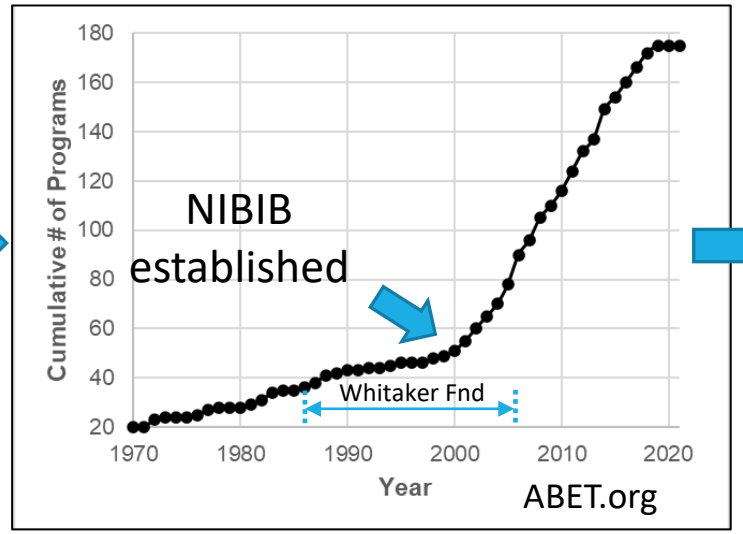
This Act may be cited as the "National Institute of Biomedical Imaging and Bioengineering Establishment Act".

SEC. 2. FINDINGS.

The Congress makes the following findings:

(1) Basic research in imaging, bioengineering, computer science, informatics, and related fields is critical to improving health care but is fundamentally different from the research in molecular biology on which the current national research institutes at the National Institutes of Health ("NIH") are based. To ensure the development of new techniques and technologies for the 21st century, these disciplines therefore require an identity and research home at the NIH that is independent of the existing institute structure.

- 175+ accredited BME-related programs
- > 200 graduate programs



- **Human Health top priority of Engineering**
- **Medicine-Engineering partnerships: *Physicianeers***

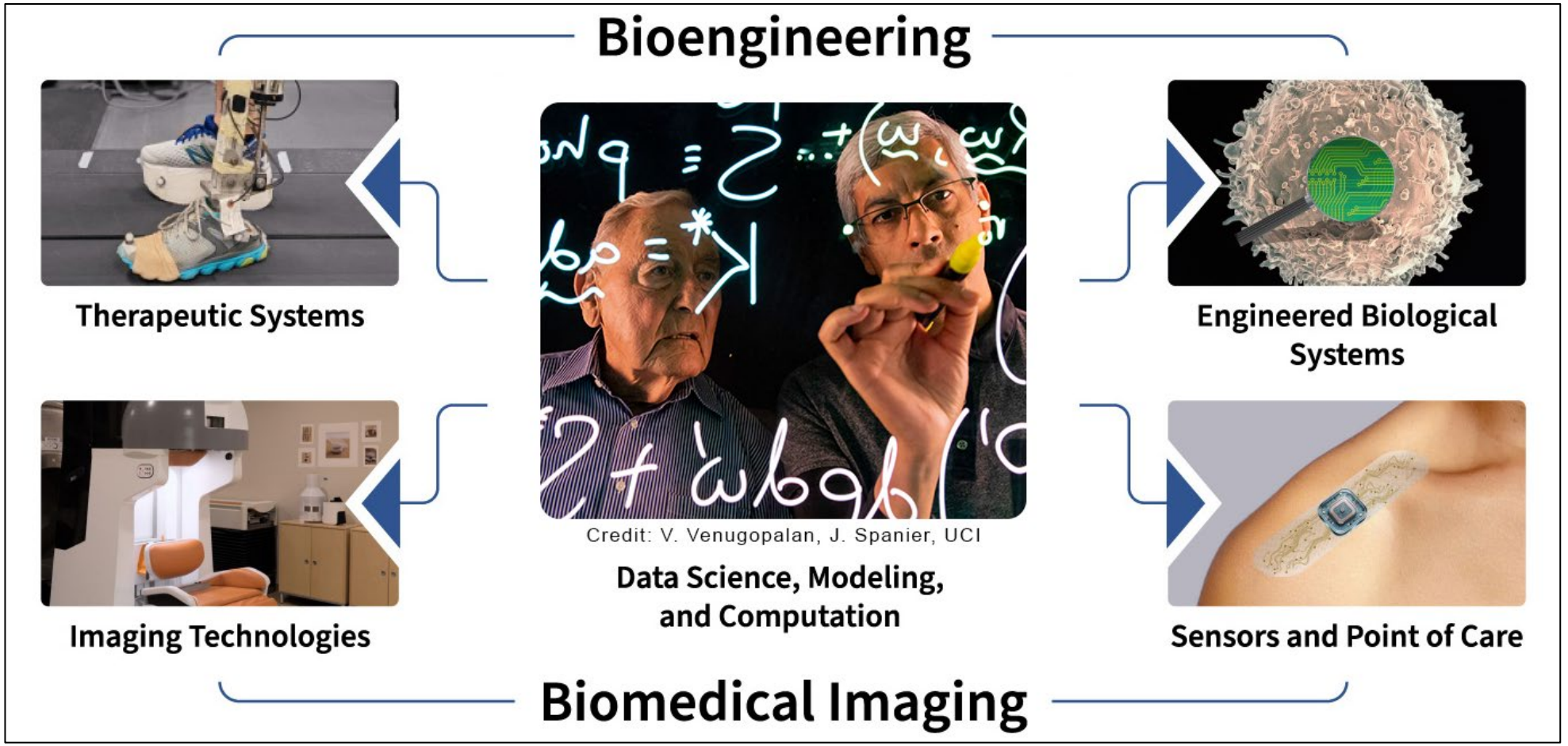
-BME Centers SOM/SOE
-University of Illinois Urbana-Champaign
-Texas A&M University

- ***Drive Innovation, Entrepreneurship***

https://blog.collegevine.com/us-colleges-with-biomedical-engineering-major/

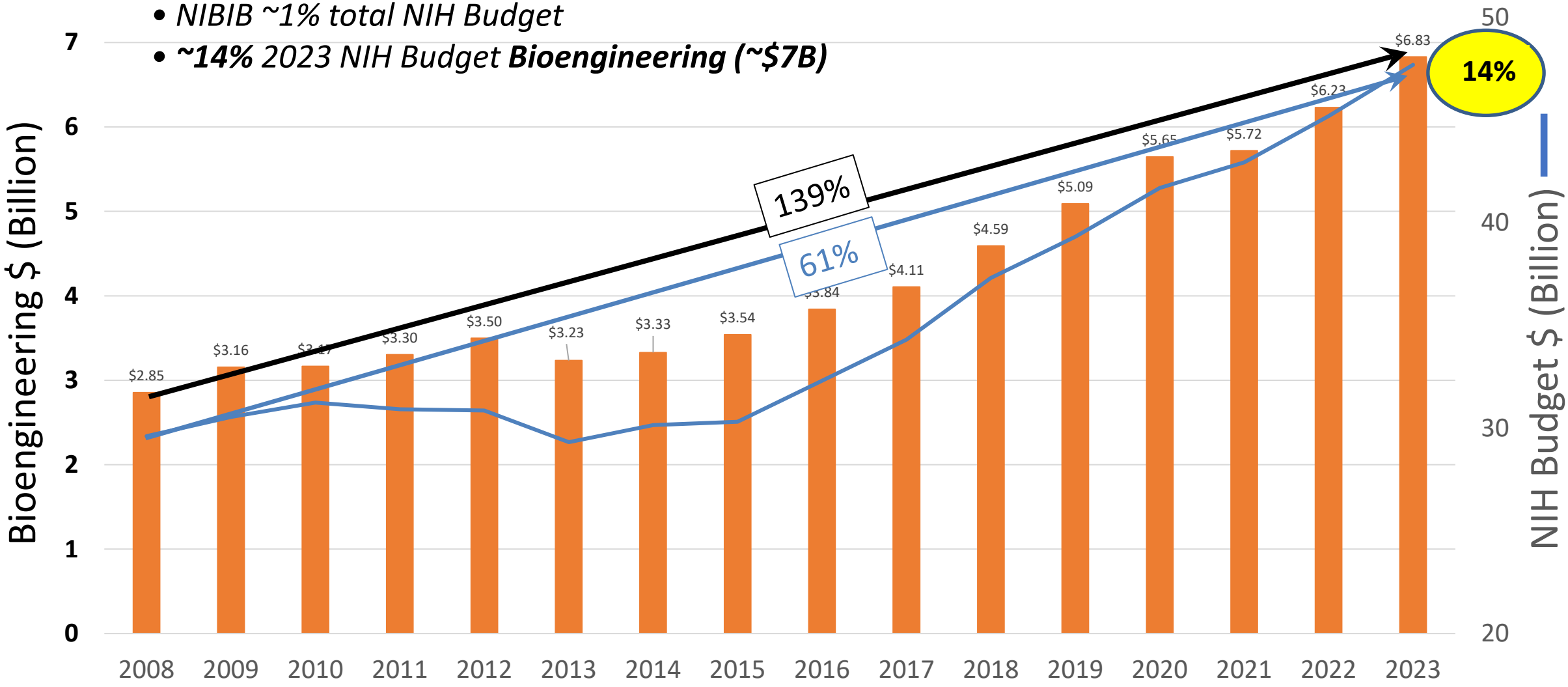
NIBIB Mission: *Technology & Innovation*

NIBIB: *No Disease Focus, Bio-hypothesis Not Needed, ~900 grants/yr*



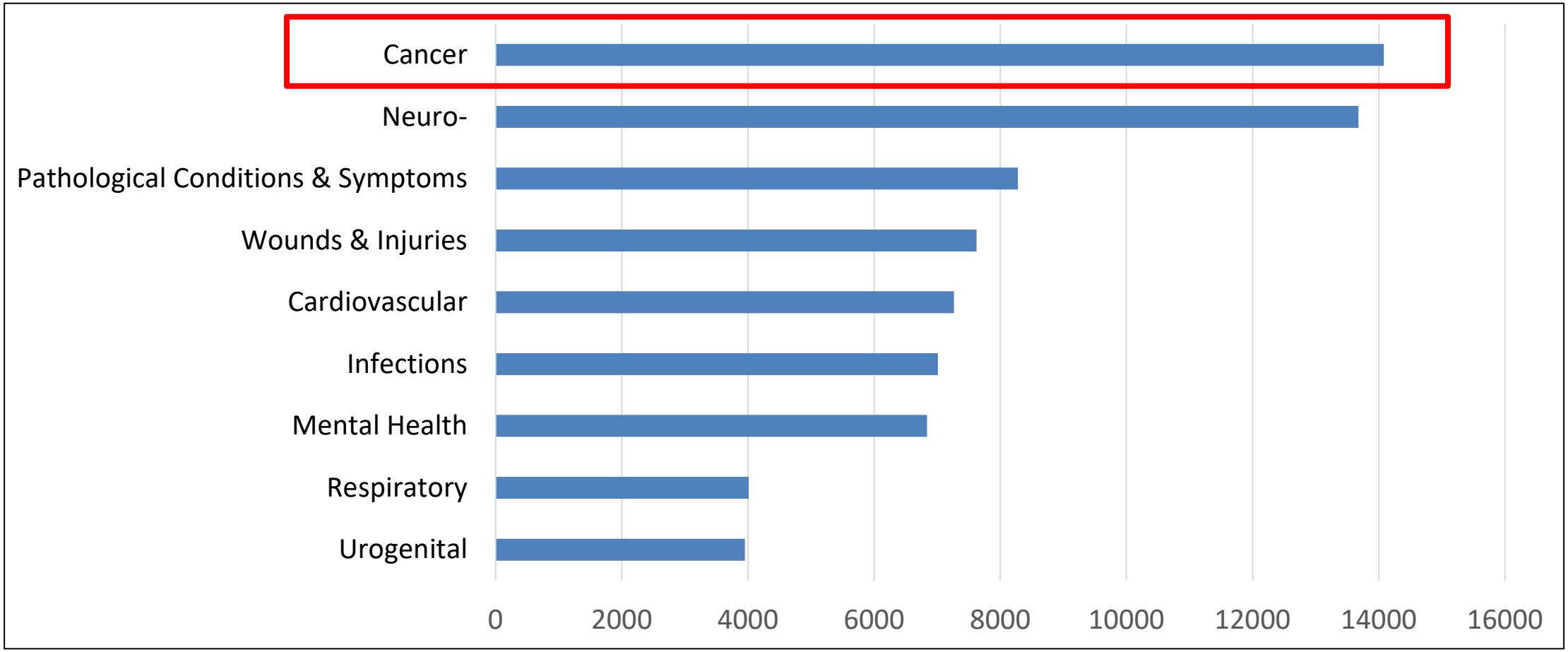
Bioengineering Impact at NIH

- *NIBIB ~1% total NIH Budget*
- ***~14%** 2023 NIH Budget **Bioengineering (~$7B)***

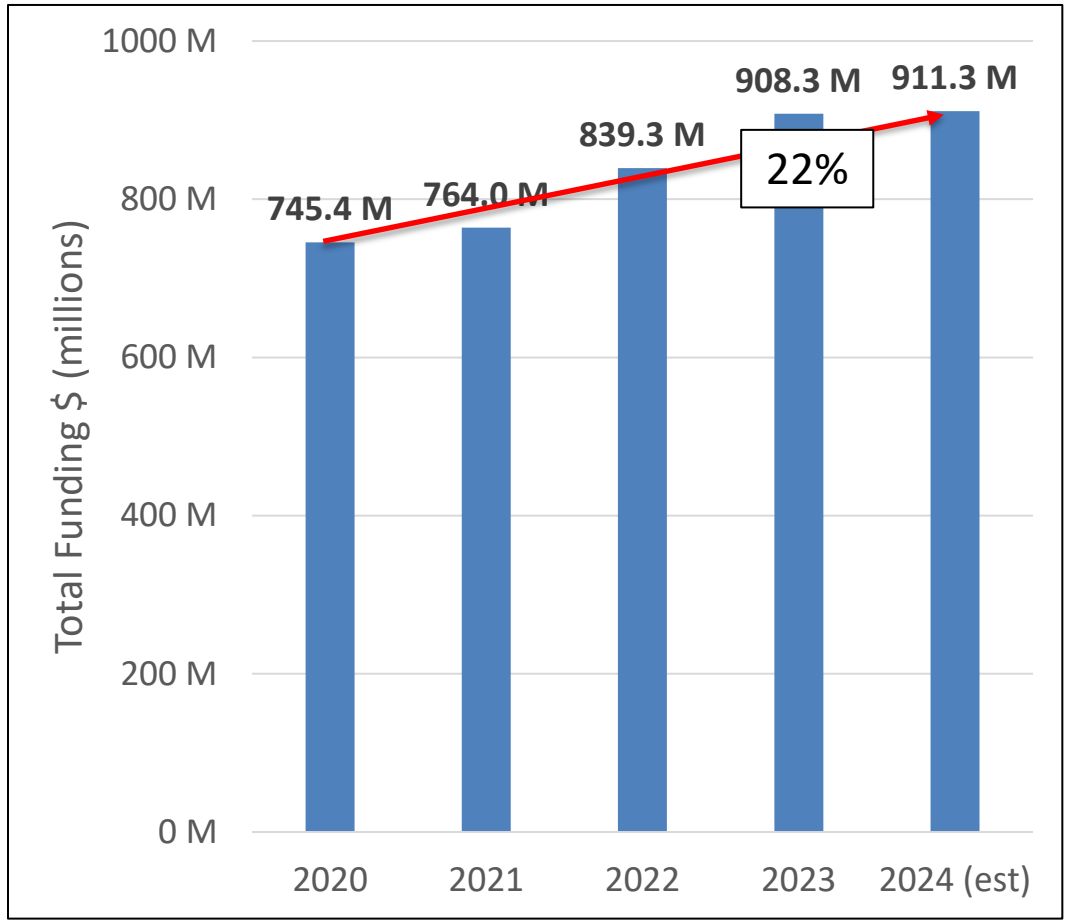


Bioengineering Impact at NIH

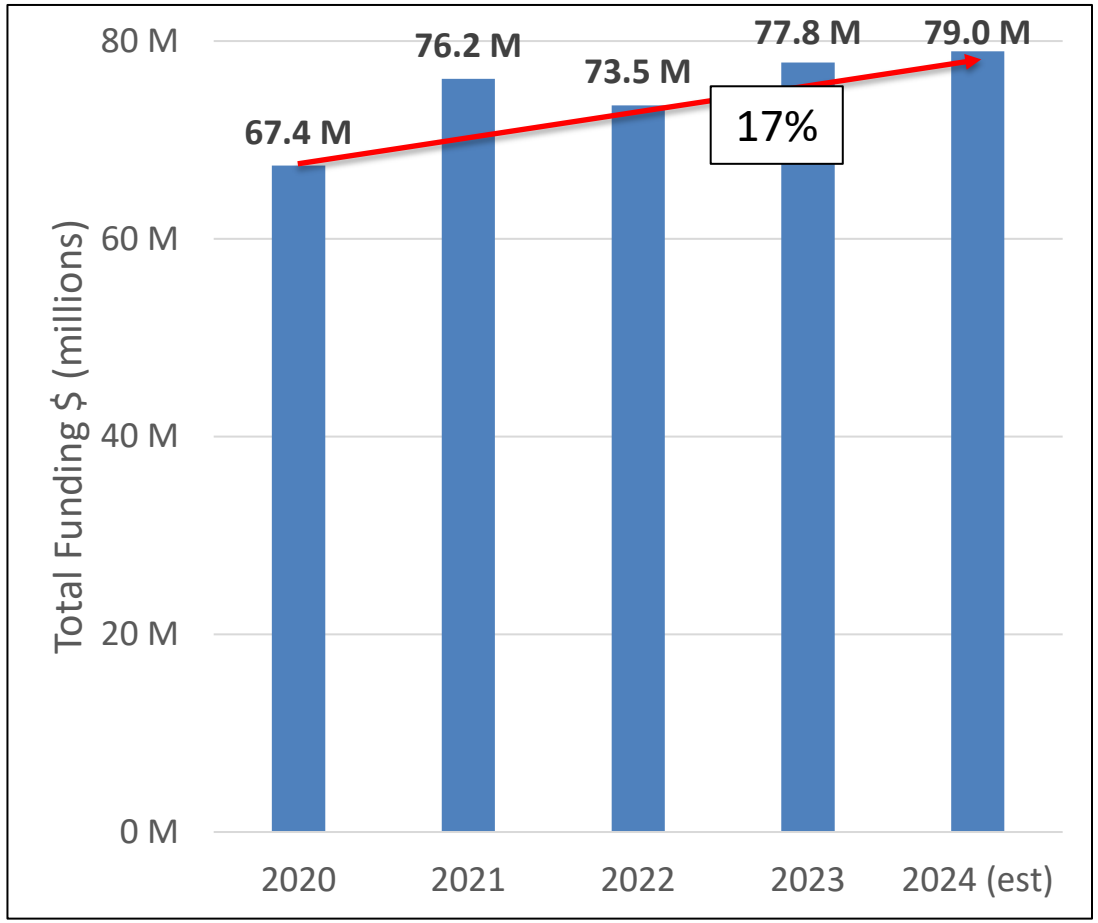
Bioengineering grants FY2020-2024



Cancer Engineering at NIH



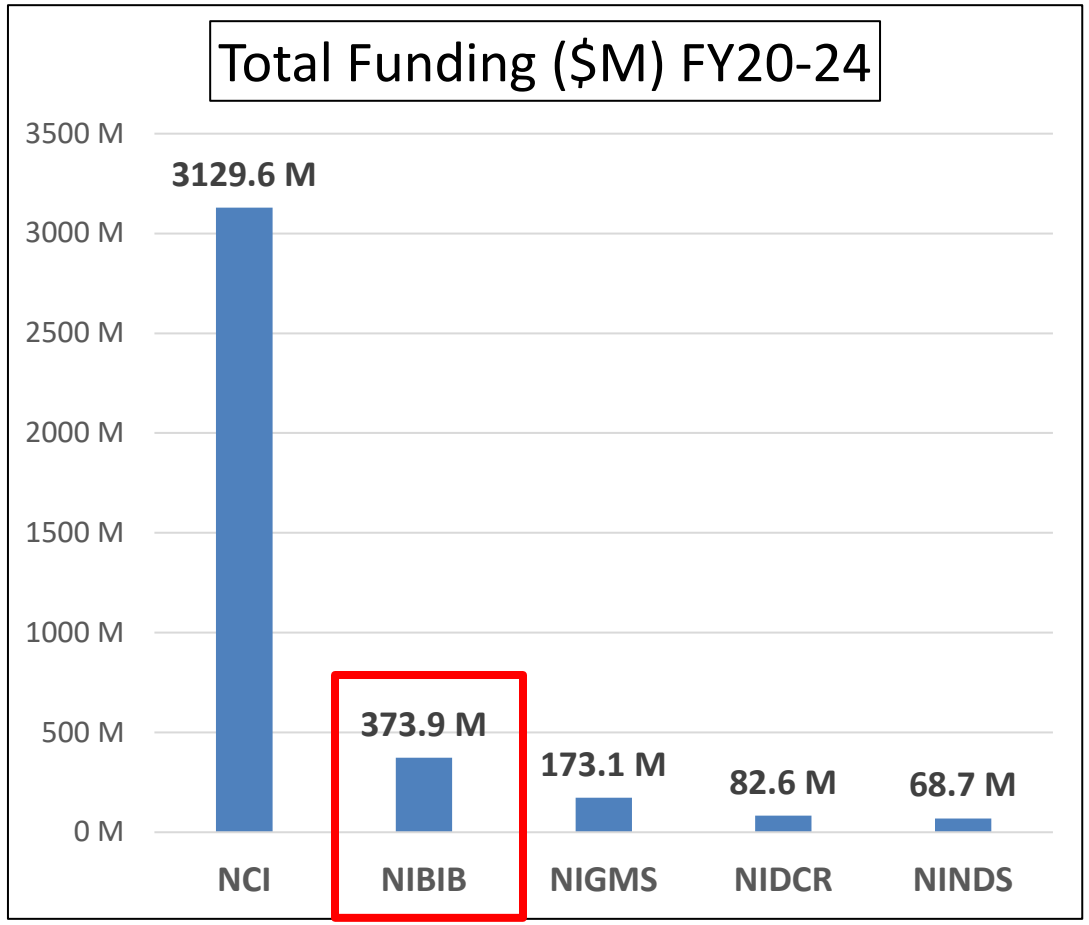
NIH

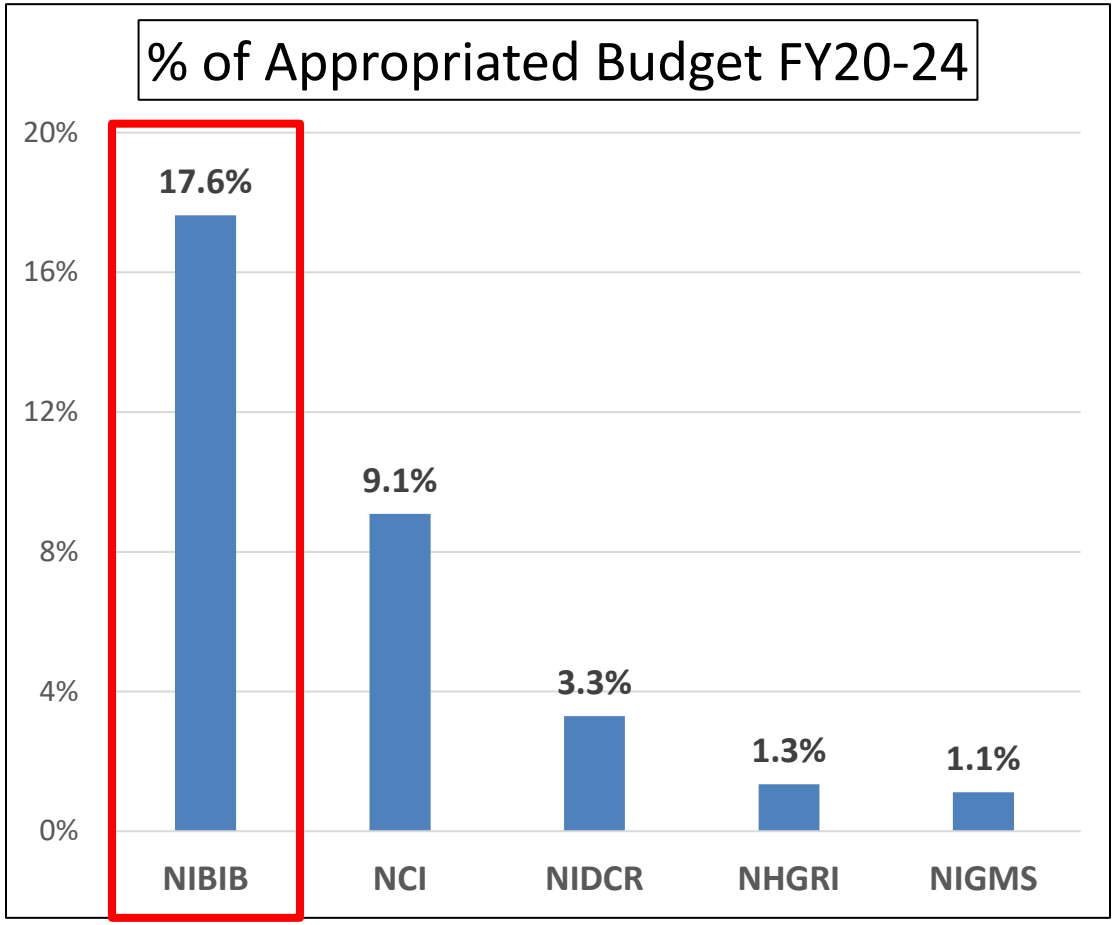


NIBIB

Cancer Engineering at NIH

Top 5 Funding Institutes





Summary

NIBIB: *Established by Engineering + Medicine partnership*

- Impact: Significant NIH-wide investment in bioengineering, tech development, devices
- Cancer Engineering #1 application focus across NIH; ~18% of NIBIB budget, ~9% NCI budget

Future: *New Drivers of Engineering + Medicine partnerships*

- Bioeconomy/Biomanufacturing, CHIPS Science, National AI Research Resource, Quantum Tech

- Opportunity: Dx led precision medicine → personalize therapies, empower individuals, improve patient outcomes

- Challenges: How to standardize, validate, & integrate new approaches (AI, devices, etc) into healthcare (EHR, CMS, etc.)