Panel 2: Perspectives on Conventional Innovation and Commercialization Metrics

An overview of metrics used in the evaluation of SBIR/STTR at NIH

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NIH

"To seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability."

It's the National Institutes of Health

Institute/Center Name	Abbreviation	Origin Date
National Cancer Institute	NCI	1937
National Institute of Mental Health	NIMH	1946
Center for Scientific Review	CSR	1946
National Institute of Allergy and Infectious Diseases	NIAID	1948
National Heart, Lung, and Blood Institute	NHLBI	1948
National Institute of Dental and Craniofacial Research	NIDCR	1948
National Institute of Diabetes and Digestive and Kidney Diseases	NIDDK	1948
National Institute of Neurological Disorders and Stroke	NINDS	1950
Warren Grant Magnuson Clinical Center	CC	1953
Eunice Kennedy Shriver National Institute of Child Health and Human Development	NICHD	1962
National Institute of General Medical Sciences	NIGMS	1962
National Center for Research Resources	NCRR	1962
Center for Information Technology	CIT	1964
National Library of Medicine	NLM	1968
National Eye Institute	NEI	1968
John E. Fogarty International Center	FIC	1968
National Institute of Environmental Health Sciences	NIEHS	1969
National Institute on Aging	NIA	1974
National Institute for Arthritis and Musculoskeletal Diseases	NIAMS	1986
National Institute of Nursing Research	NINR	1986
National Institute on Deafness and Other Communication Disorders	NIDCD	1988
National Human Genome Research Institute	NHGRI	1989
National Institute on Alcoholism and Alcohol Abuse	NIAAA	1992
National Institute on Drug Abuse	NIDA	1992
National Center for Complementary and Integrative Health	NCCIH	1992
National Institute on Minority Health and Health Disparities	NIMHD	1993
National Institute of Biomedical Imaging and Bioengineering	NIBIB	2000
National Center for Advancing Translational Sciences	NCATS	2011

Evaluation challenges

- Challenge 1: Additionality

- Challenge 2: What are the right outcomes conceptually? What can we measure reliably?

- Challenge 3: Linking firms (funded and unfunded) to the outcomes

A suite of outcome measures

TABLE 5-3 Firm-year Outcome Summary Statistics for Fiscal Years 2000–2018, NIH SBIR/STTR Applicants, Following First Application Decision

Outcome	Decision on Firm's First Application	Number of Observations	Percent with Positive Nonzero Outcomes	Summary Statistics for Nonzero Outcomes		
				Median	Mean	Standard Deviation
VC Funding	Unfunded	136,737	2	$3,500,000	$11,290,008	$28,981,228
	Funded	24,811	4	$5,000,000	$13,679,346	$22,453,088
Publication	Unfunded	136,737	11	0.58	1.55	4.95
	Funded	24,811	26	0.75	1.39	2.4
Trademark	Unfunded	136,737	4	1	2.11	2
	Funded	24,811	6	1	2.02	1.77
Patent	Unfunded	136,737	4	1	2.31	4.3
	Funded	24,811	9	1	2.35	3.25
Clinical Trial	Unfunded	136,737	2	1	1.67	1.52
	Funded	24,811	3	1	1.52	1.1
510(k)	Unfunded	136,737	1	1	1.52	1.37
	Funded	24,811	1	1	1.45	0.99
Device PMA	Unfunded	136,737	<1	1	1	0
	Funded	24,811	<1	1	1	0
Drug Approval	Unfunded	136,737	<1	1	1	0
	Funded	24,811	<1	1	1	0

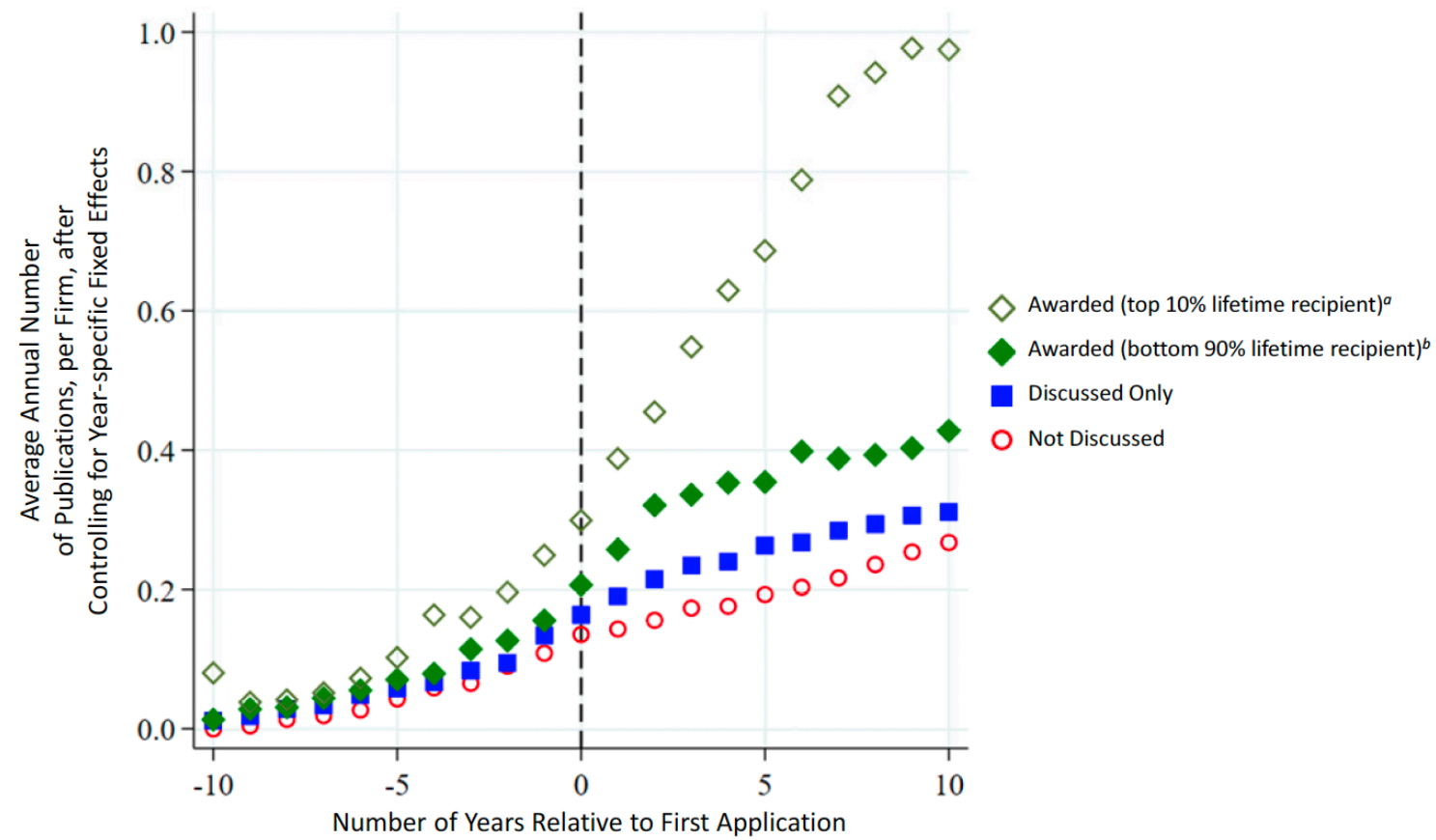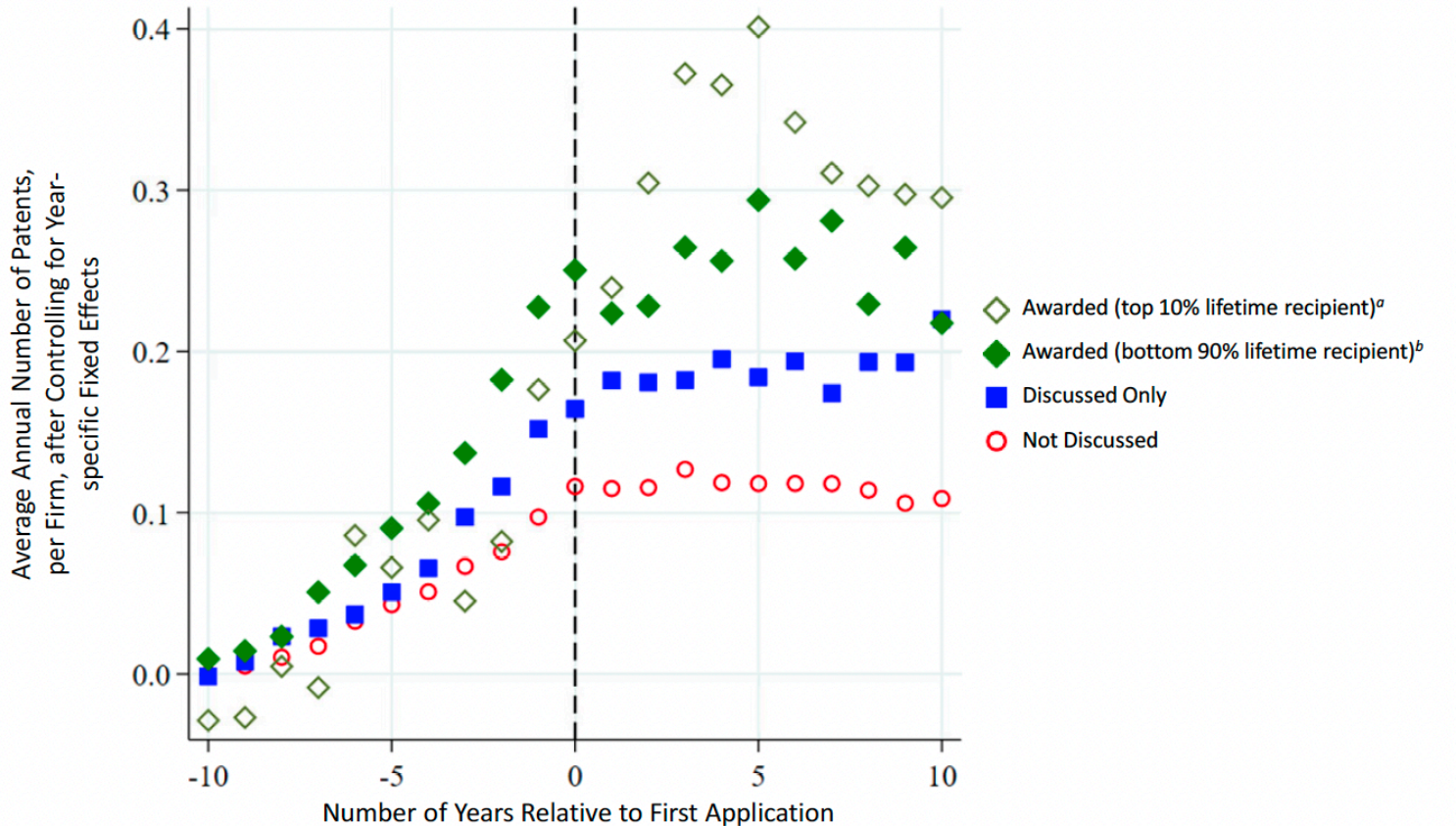# Publications, patents, clinical studies for funded/unfunded firms

FIGURE 5-5 Publications: Trends in aggregated outcome index for NIH SBIR/STTR applicants, by first application decision outcome.
SOURCE: Committee calculations based on fiscal year 2000–2018 NIH SBIR/STTR application data and PubMed data.
[a] Firms that fall in the top 10 percent of support from the programs from 1995 to 2019.
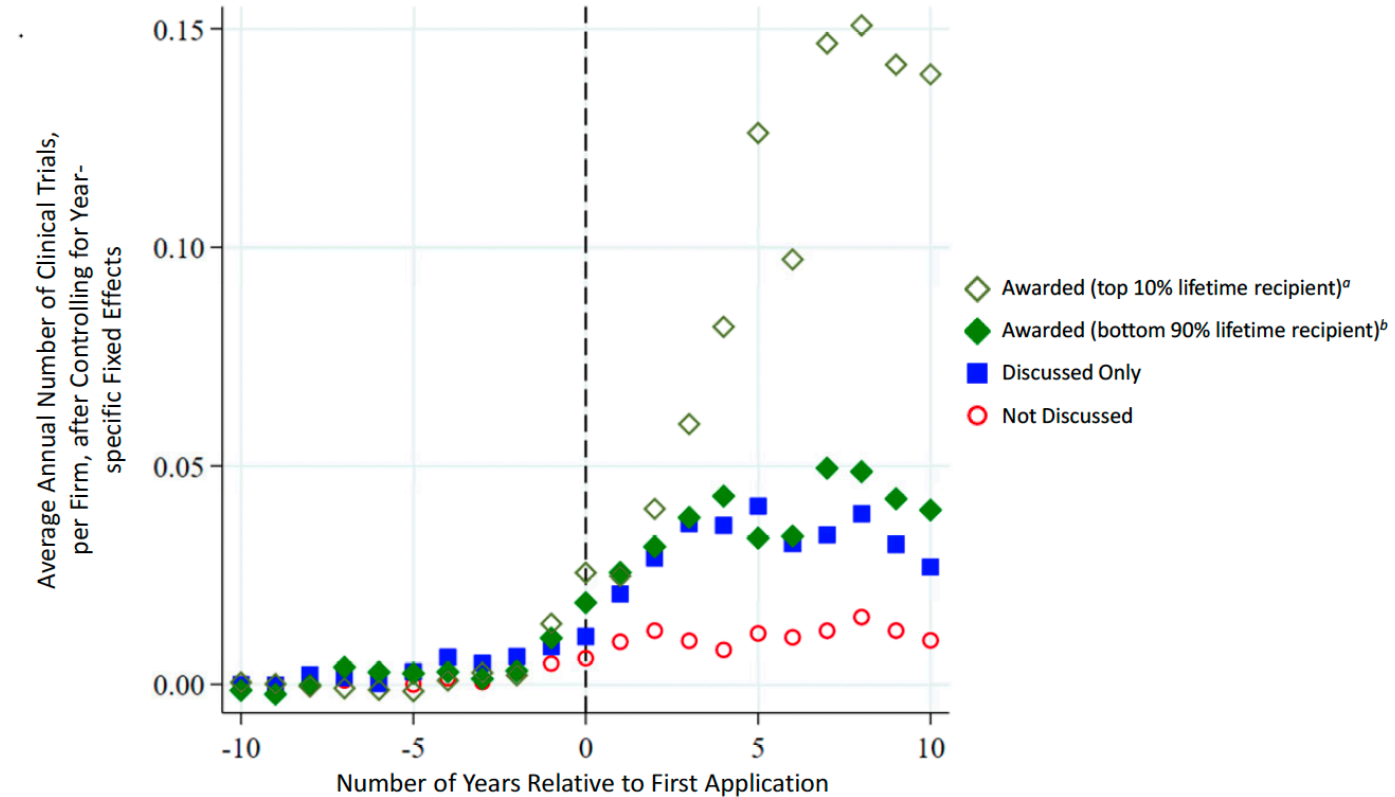[b] Firms that fall in the bottom 90 percent of support from the programs from 1995 to 2019.

FIGURE 5-7 Patents: Trends in aggregated outcome index for NIH SBIR/STTR applicants, by first application decision outcome.
SOURCE: Committee calculations based on fiscal year 2000–2018 NIH SBIR/STTR application data and U.S. Patent and Trademark Office PatentsView database.
[a] Firms that fall in the top 10 percent of support from the programs from 1995 to 2019.
[b] Firms that fall in the bottom 90 percent of support from the programs from 1995 to 2019.

FIGURE 5-8 Clinical trials: Trends in aggregated outcome index for NIH SBIR/STTR applicants, by first application decision outcome.
SOURCE: Committee calculations based on fiscal year 2000–2018 NIH SBIR/STTR application data and data on clinical studies from ClinicalTrials.gov.
[a] Firms that fall in the top 10 percent of support from the programs from 1995 to 2019.
[b] Firms that fall in the bottom 90 percent of support from the programs from 1995 to 2019.

Award-level data

ExPORTER

ExPORTER is a key component of the NIH "open government" initiatives to provide more transparency into NIH activities, and to improve the quality and usability of data collected. ExPORTER provides bulk administrative data found in **RePORTER** to the public for detailed analyses or to load into their own data systems. Generally, files for downloading are provided in CSV formats. The **ExPORTER FAQs** page includes the data dictionary for each file, the data refresh details, and other pertinent information. **CRISP** was the predecessor system to RePORTER, and legacy files drawn from this system are provided from FY 1970 to FY 2009.

Note: The release of the consolidated Annual RePORTER project file is scheduled annually by the end of January. This timeframe allows for the integration of the most recent grant information, contracts, intramural projects, and interagency agreements. Subsequently, the Annual RePORTER project files will undergo updates upon the release of the President's budget for the fiscal year, incorporating the NIH Spending Categories data (RCDC). Following the announcement, it may take up to three weeks for the updated files to be made available for public access.

The ExPORTER FAQs page includes the data dictionary for each file, the data refresh details, and other pertinent information.

🔍 **View ExPORTER FAQs**

| Projects | Abstracts | Publications | Patents | Clinical Studies | Link Tables |

File Name	Fiscal Year	Download	Size	Last Updated Date
FY 2022 RePORTER Project Data	2022	⬇	~66MB	09/14/2023
FY 2021 RePORTER Project Data	2021	⬇	~64MB	09/14/2023
FY 2020 RePORTER Project Data	2020	⬇	~63MB	09/14/2023
FY 2019 RePORTER Project Data	2019	⬇	~59MB	09/14/2023
FY 2018 RePORTER Project Data	2018	⬇	~65MB	11/18/2020
FY 2017 RePORTER Project Data	2017	⬇	~59MB	11/18/2020
FY 2016 RePORTER Project Data	2016	⬇	~57MB	11/18/2020
FY 2015 RePORTER Project Data	2015	⬇	~54MB	10/19/2018
FY 2014 RePORTER Project Data	2014	⬇	~54MB	04/12/2018

Patents: the problem of underreporting

- Comparing RePORTER to "government interest" statements (available frm USPTO) only 30 percent of SBIR/STTR patents reported back to agency

  - Comparison for NIH R01 grants: 60 percent

- Correlates of non-reporting

  - Later patents

  - Volume of SBIR grants/contracts

- Implications: (1) Award level data useful in direct links to outcomes for funded firms (2) But, under-reporting; (3) For patents, USPTO government interest data a useful supplement/alternative