Who Funds University Research?

Grants reported to US colleges and universities in 13.9 million IRS Form 990 grant records, tax years 2020–2024, compared with federal and foreign funding data

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Prepared for university research offices

Abstract

We extract the grants that US private foundations and grantmaking public charities itemized, in the e-filed XML of Forms 990 (Schedule I) and 990-PF, as paid to US colleges and universities, tax years 2020–2024, from the complete IRS e-file series (70 archives, 4.9 million returns). These forms report the grants of private foundations and public charities, which can include money that originated with government; federal and foreign funding are taken from separate public sources (NSF's HERD survey, NIH and NSF award data, and Section 117 foreign gift disclosures) and are compared with, never added to, the 990 figures. Recipients are resolved to IPEDS institutions; the resolution has been checked so far only on preliminary samples labelled by an AI model. Funders are typed so that transfers from university foundations, hospitals, athletic conferences, and government-funded intermediaries are separated from external philanthropy. Grant purposes are classified by a rule-based classifier; every purpose text was also read by three language models, and a probability sample of texts by two people, and no reading is treated as the truth. External philanthropy to universities totalled $103B over five years ($20.7B a year) and grew 36% from 2020 to 2024. Grants whose stated purpose names research were $13.0B under the headline classification ($2.6B a year); across the machine and human readings the point estimates assign $11–15B to a stated research purpose over the five years and $9–21B to text that does not settle the question, a spread that describes the reading and is not a bound on research expenditure. The headline series grew 31% (6.9% a year) against 40% for federal R&D spending. The comparison depends on how a few very large gifts are classified: counting research buildings as research gives 40%, and counting only grants whose purpose is research alone gives 44%, the tested machine readings of the texts give 24%–31% under the same capital exclusion, and alternative definitions 15%–53%, so the ordering against federal R&D is definition-dependent. Research money is highly concentrated: the ten largest funders paid 30% and the ten largest recipients took 33%. Health and science charities supply 34% of research dollars while giving only 5% of all external grants; donor-advised funds give 27% of external dollars but almost none of it is identifiable as research. At the institution level, private research grants and HERD nonprofit-funded R&D are moderately related when both are expressed as shares of R&D (Spearman $\rho = 0.42$; $\rho = 0.80$ for dollar amounts), a descriptive association, and across HERD's ten broad fields the nonprofit share of R&D is higher where the federal share is lower ($\rho = -0.79$). The federal and foreign data are used to map institutional exposure to federal funding, and peer comparisons identify, for every R1 university, the private funders that support its peers with no grant to it observed in these data; in a backtest these leads converted to new grants no more often than a list of the most widely active funders. The author, founder of Ascendr, PBC, designed the classifier and was one of the two human readers (see Disclosures, p. 38).

What this report is for: five decisions it supports

Use this report to investigate historical funding relationships and to shortlist funders for verification. It does not establish current opportunities, the research share of mixed grants, or expected application success. The grants are those reported on IRS returns for tax years 2020–2024; "research" is a classification of each grant's stated purpose, and readings of the same texts differ (Section 3.4). Version 2026.10 of 10 October 2026, data build 10 October 2026; data at `https://ascendr.ai/resources/funds/`. Author: George Koomullil, Ascendr, PBC, a company that serves research offices; competing interests on p. 38.

1. **Shortlist historical funders.** Use the directories (Appendices B–E) to find funders active at comparable institutions and in relevant fields, then verify their current programmes, eligibility and application route. *Limitation:* a listed relationship is historical; in a backtest, peer-based leads converted no more often than the most widely active funders (12.1% against 13.2%), so the lists narrow the field and do not predict success.
2. **Check the recipient unit before reading an amount.** At public universities 26% of research dollars are addressed to a foundation, medical school or other affiliate; benchmark by family, not legal name. *Limitation:* matches were checked only on samples labelled by an AI model, and one grant can move a campus total; treat institution figures as provisional and check them against the institution's own records.
3. **Read purpose labels as evidence in a filing, not as allocations.** Of $226B reported to universities, $103B is retained as external philanthropy under the funder rules and $13.0B carries a stated research purpose under the headline rule; other readings of the same texts, on the same domain, put it at $11–15B. *Limitation:* mixed-purpose grants are counted whole and generic text does not prove the absence of research support, so actual research expenditure cannot be identified from these records.
4. **Interpret approvals correctly.** The future-payment tables list grants approved during the tax year and unpaid at its end, as Form 990-PF requires; approvals from earlier years still unpaid are not listed. *Limitation:* this is historical award information, not a stock of outstanding commitments and not money available to new applicants.
5. **Use federal comparisons to guide investigation, not replacement planning.** Research grants of $2.96B in 2024 compare with $64.7B of federal R&D; the headline series grew 31% from 2020 to 2024 against 40% for federal R&D, an ordering that depends on the definition. *Limitation:* the exposure map is a follow-up screen; differences in source, timing and reporting unit prevent any measure of replacement capacity or institutional resilience.

How to use this report

The working material for research development and pre-award staff is in the appendices and on the data site. Appendix B lists the leading research funders in each field; Appendix C the in-state funders of every state's universities; Appendix D the funders that reach many institutions outside R1; and Appendix E the peer-based leads for every R1 university, including the 42 designated in 2025. Section 7 says what the evidence supports in practice and Section 8 what it does not. Every table is searchable and downloadable at `https://ascendr.ai/resources/funds/` (CC BY 4.0), and Appendix A defines every term and code. A figure for a single institution is a provisional rule-derived total: check it against the institution's own records before quoting it.

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1 Introduction

University research offices increasingly need to know who, besides the federal government, pays for research. Federal support remains dominant ($64.7B of the $117.7B universities spent on R&D in FY2024; National Center for Science and Engineering Statistics 2026), but it became markedly less predictable in 2025–2026 (Section 4.8), and research development teams are being asked to diversify. The federal share of basic research at universities and nonprofit institutes has been falling for decades, from 76% in 1965 to 51% in 2023, while philanthropic and university sources rose from 14% to 39% (Science Philanthropy Alliance 2025). Philanthropy is the most accessible alternative, yet the evidence base that offices use is thin: commercial databases are costly, recipient-side giving reports mix research with scholarships and buildings, and public universities, as governmental units, do not file Form 990 at all.

The IRS Form 990 e-file series is a free, grant-level, funder-reported source of the grants that private foundations and grantmaking public charities list on their returns; an individual funder's award database covers only itself. Every private foundation lists the grants it paid during the year on Form 990-PF, and every grantmaking public charity lists, on Schedule I, each domestic organization that received more than $5,000 from it in aggregate during the year (Internal Revenue Service 2024a; Internal Revenue Service 2024b). Since the Taxpayer First Act made electronic filing mandatory for tax years beginning after 1 July 2019 (U.S. Congress 2019), the XML covers essentially the whole population of filers.

This study turns that series into an analysis-ready database of grants to US higher education and asks nine questions: how large and fast-growing private university funding is; who provides it; for which fields; which institutions receive it and how; how persistent and local funder relationships are; what funders approved in a year but had not yet paid; how private funding relates to federal funding and exposure; how large foreign funding is; and which funders an institution is missing. Section 2 describes the data and its completeness, Section 3 the methods and their validation, Section 4 the results, Section 5 what the data miss, Section 6 how the figures compare with national benchmarks, and Section 7 the implications for research offices. The appendices are reference material: a glossary (Appendix A), funder directories by field, by state, and for institutions outside R1 (Appendices B–D), and the leading prospects for every R1 university under the 2021 and 2025 classifications (Appendix E). Readers interested in a particular institution will find the largest recipients in Table 11, the federal exposure of R1 universities in Figure 19 and Table 14, changes in NIH awards in Table 13, and grants approved for future payment in Table 12. Throughout, amounts are grants reported in the funder's tax year to US institutions (reported as paid on Form 990-PF; reported under the filer's accounting method on Schedule I), and a grant counts as research when its stated purpose names research, unless the research purpose is a building or facility (research capital, reported separately; Appendix A); gifts from individuals, corporate contracts, and giving through limited liability companies are outside the data.

2 Data

2.1 IRS Form 990 e-file series

We downloaded all 70 IRS Form 990-series XML archives for posting years 2019–2026 (Internal Revenue Service 2026b), about 4.9 million returns including non-grantmakers (the sum over archives; the overlapping 2019–2020 archives are de-duplicated by object ID before parsing). Three problems, two in the public distribution and one in parsing, are worth recording because they would silently bias any analysis. First, the IRS download page links only one archive for posting year 2022, which holds

Table 1: Completeness of the downloaded IRS e-file archives by posting year

IRS posting year	XML returns in zips	Rows in IRS index	Reconciliation
2019	475,578	416,656	zips exceed index
2020	541,077	399,078	zips exceed index
2021	589,904	589,904	matches
2022	656,503	656,503	matches
2023	705,154	705,156	2 returns missing
2024	728,719	728,719	matches
2025	748,906	748,906	matches
2026	436,239	436,239	matches

Posting years 2019–2020 contain more returns than their index files because older archives overlap; duplicates are removed by object ID.

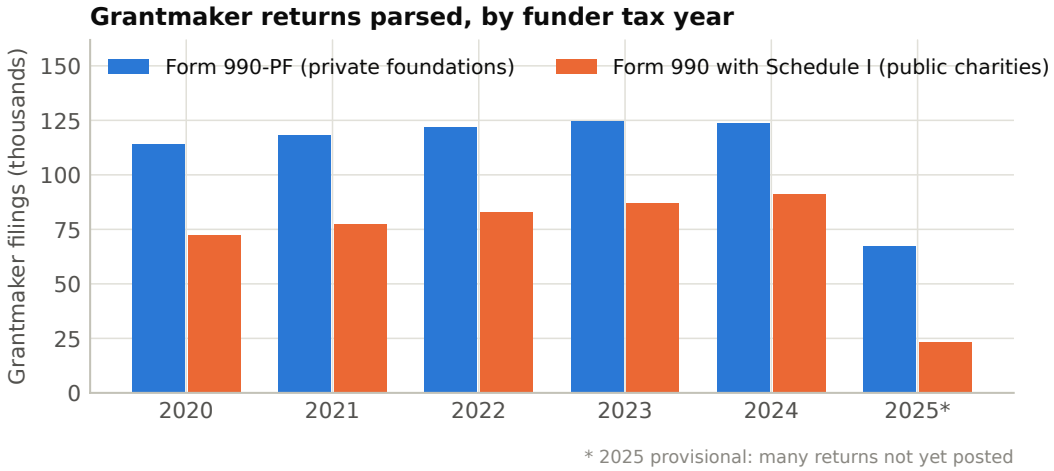


Figure 1: Grantmaker returns by the funder's tax year. Tax year 2025 is incomplete because returns are filed up to 10.5 months after year end and posted with a further lag.

433,529 returns against 656,503 in the IRS index file; a second archive (`2022_TEOS_XML_02A.zip`) exists on the server but is not linked. Without it, tax year 2021 appears to have about a third fewer grantmaker filings than adjacent years. Second, six archives use Deflate64 compression, which common XML toolchains cannot read; they were re-packed without loss. Third, some private foundations record the recipient organization's name in the field meant for an individual's name; a parser that treats that field as a grant to a person drops about 985,000 grant rows (all tax years). We keep such rows when the recipient's foundation status or name identifies an organization, which also brings the count of large filings with no itemized list into line with Candid's (Section 6). Table 1 shows that after these fixes every posting year from 2021 onward reconciles to the IRS index (posting year 2023 lacks two returns).

A parser extracted, for every return that reports grants, the filer, tax period, amendment status, stated total of grants paid, and each grant row: recipient name, address, EIN (Schedule I only), foundation status (990-PF only), purpose, and cash and non-cash amounts. Grants approved for future payment on Form 990-PF (Part XIV line 3b: approvals made during the year and unpaid at its end; the instructions exclude prior-year approvals still unpaid) are kept in a separate status and never added to paid grants. Grants to individuals are counted but not stored. When a funder filed more than once for a tax period, only the latest (usually amended) return is retained. The result is 13.9 million grant rows from 1.01 million retained grantmaker returns for tax years 2020–2024.

Table 2: Grantmaker filings and grant-list completeness by tax year and form

Tax year	Form	Filings parsed	No grants	Complete	Partial	Missing	Itemized ($B)	Stated paid ($B)
2020	990 Sch. I	72,444	24,394	82%	9%	8%	145.3	156.0
2020	990-PF	113,776	23,184	90%	5%	5%	74.0	97.1
2021	990 Sch. I	77,200	26,691	81%	9%	9%	165.1	177.9
2021	990-PF	118,286	25,557	90%	5%	5%	84.8	108.5
2022	990 Sch. I	82,561	28,978	81%	9%	9%	166.5	180.7
2022	990-PF	121,830	27,280	90%	4%	6%	88.4	118.0
2023	990 Sch. I	86,752	30,741	81%	9%	10%	186.3	200.1
2023	990-PF	124,518	28,876	90%	4%	6%	94.7	125.5
2024	990 Sch. I	90,858	32,726	81%	9%	9%	207.3	221.0
2024	990-PF	123,602	28,526	91%	4%	5%	100.1	128.7
2025*	990 Sch. I	22,996	9,518	77%	9%	13%	12.2	13.3
2025*	990-PF	67,310	14,788	93%	3%	4%	25.0	30.4

* 2025 is provisional. No grants: returns that report no grants paid. Complete, partial, and missing are shares of the returns that report grants. Complete: itemized grants plus grants to individuals reconcile to the stated total. Stated paid covers all recipients, including individuals and foreign grantees.

Table 2 reports how complete the grant lists are. About a quarter of parsed grantmaker returns report no grants paid in the year. Of the 0.73 million returns for 2020–2024 that do report grants, 87% have itemized grants that reconcile to the stated total, and 7% have no itemized grants, usually because the list was placed in an attachment that is not in the XML. "Partial" filings include legitimate gaps as well as missing lists: Schedule I omits recipients below the $5,000 threshold, and grants to foreign organizations are reported on Schedule F rather than Schedule I (Internal Revenue Service 2024b). By dollars, itemized grants cover 87% of stated grants, and the shortfall is concentrated in a few large filers. Missing lists make the totals understate private funding, while matching and classification errors can move them in either direction; Section 5 and Table 35 give both.

2.2 Reference, federal, and foreign data

Forms 990 and 990-PF do not report federal awards to universities: a filer's government grants appear only as one aggregate revenue line, and public universities do not file at all. Federal and foreign funding are therefore taken from the agency and survey sources below. Institutions are identified by IPEDS UnitID using the HD2024 directory (National Center for Education Statistics 2025), which also provides control, state, EIN, and Carnegie classification (Indiana University Center for Postsecondary Research 2021). The IRS Exempt Organizations Business Master File supplies NTEE codes and EINs of university foundations and affiliates (Internal Revenue Service 2026a). Federal and benchmark data, all keyed to UnitID through crosswalks whose top 300 organizations by dollars in each source were checked individually during development (an AI-assisted review, not an independent audit), are:

- **HERD** microdata FY2020–FY2024 (National Center for Science and Engineering Statistics 2025b; National Center for Science and Engineering Statistics 2025c): R&D expenditures by institution, source of funds, and field. Our totals reproduce NSF 26-304 Table 1 exactly ($117.7B total and $64.7B federal in FY2024).
- **NIH RePORTER** FY2020–FY2026 (National Institutes of Health 2026b): extramural awards to organizations NIH classifies as higher education, counting each multi-project award once. FY2026 is taken from the RePORTER API on 26 September 2026.

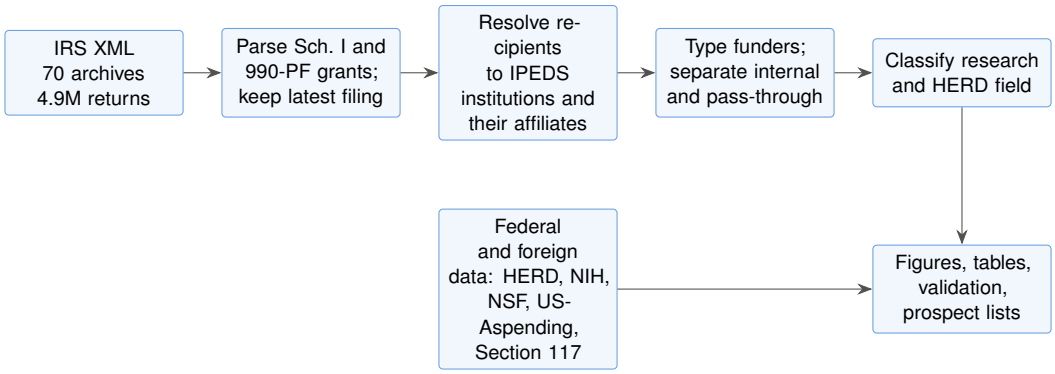


Figure 2: Processing pipeline. Every grant row keeps the IRS object ID of its source return, so any number can be traced to a filing.

- **NSF awards** 2008–2026 (U.S. National Science Foundation 2026b): dollars obligated to each institution in each fiscal year, including continuing-grant increments on older awards.
- **USAspending** FY2020–FY2026 (U.S. Department of the Treasury, Bureau of the Fiscal Service 2026): prime assistance and contract transactions to higher-education recipients (used for cross-checks).
- **Section 117** (U.S. Department of Education 2026): the Department of Education's cumulative export of foreign gifts and contracts through 31 August 2026 (142,515 records). The export files were retrieved from dated web-archive captures of the portal.

Measures are not additive. Form 990-PF amounts are grants paid during the funder's tax year; Schedule I amounts follow the filer's accounting method and can include multi-year grants recognized when made, at present value (Internal Revenue Service 2024b); HERD measures R&D spent in the institution's fiscal year; NIH and NSF measure dollars awarded or obligated. Within the 990 data, therefore, private-foundation and public-charity amounts are not strictly the same measure; growth is reported for each (Table 3), and "grants paid" in this report means grants reported as paid on either form. We compare the federal, foreign and 990 measures side by side and never add them. Within the 990 data the headline totals do add 990-PF and Schedule I amounts; they are therefore reported grant amounts on mixed accounting bases, not a cash-flow or expenditure series, and the form-specific series in Table 3 are the primary measure of change.

Data availability. The full data behind every figure and table that shows only part of its data (all funders, all institutions, every R1, all prospect leads, NIH awards, commitments, and Section 117 records) are published at `https://ascendr.ai/resources/funds/` as ten CSV files with a data dictionary and a searchable page under the Creative Commons Attribution 4.0 International license (CC BY 4.0; released version 2026.10, October 2026). Figure and table captions give the file number.

3 Methods

3.1 Recipient resolution

Recipient names on 990 filings are free text ("UNIV OF WISCONSIN MADISON FBO ...", "REGENTS OF THE UNIVERSITY OF CALIFORNIA", "KU ENDOWMENT"). Resolution proceeds in two layers. The first layer matches normalized names, reported EINs, and state against IPEDS names and aliases and against IRS master-file records of higher-education organizations

and their affiliates, assigning tiers: **A**, a reported EIN that maps to one institution; **B**, an exact normalized name or curated alias in the same state; **C**, a high-confidence fuzzy or structural match; **D**, ambiguous; **U**, unresolved. The second layer adds rules that the audit showed were necessary:

1. *Rejections* of organizations that match on words such as "college" or share a state EIN but are not universities (K–12 schools, college-access nonprofits, state agencies, public broadcasters).
2. *EIN plausibility*: an EIN match is kept only if the recipient name has a higher-education word, shares a distinctive word with the institution (a shared city or state name does not count), or contains its acronym; otherwise it goes to review. A reported EIN is overridden when the name exactly identifies a different institution or matches a curated alias in the same state.
3. *Non-academic parents*: an EIN can belong to a body that owns a school but is not one (Mayo Clinic owns the Mayo Clinic College of Medicine and Science; the RAND Corporation its graduate school; the City of New York shares an EIN with CUNY colleges; the Art Institute of Chicago is a museum with a school). A recipient whose name identifies the parent rather than the school is not a university grant, unless the EIN holder is itself a university (a university-owned medical centre stays an affiliate). Hospitals, health systems and clinics are never universities, whatever EIN or affiliate link brought them in.
4. *Affiliates*: foundations, endowment associations, research foundations, medical schools, and practice plans are matched through their core name and flagged as affiliates.
5. *Systems*: names that identify a multi-campus system rather than a campus ("University of Nebraska", "Regents of the University of California") are assigned to a campus only on evidence: a campus word in the recipient name, or a filed city that belongs to exactly one campus of the system (allowing for spelling variants and medical-campus cities such as Aurora or Hershey). Otherwise the grant stays at system level ("campus not identified"). Such grants count in national totals but are not ranked with campuses, and for prospect lists they count as a relationship with every campus of the system. They amount to $232M of research grants (1.8%) and $1,174M of external grants across 50 systems.
6. *Curated aliases* (333) for short names and system names, applied only within the institution's state (so "CMU" in Michigan is not Carnegie Mellon).
7. *Separate categories* for hospitals that carry a university word ("University of Miami Hospital", "Tufts Medical Center", "Johns Hopkins Health System"), and for foreign universities and their US "friends of" conduits. Academic medical centres and health foundations that carry the university's name without a hospital word ("NYU Langone Health", "UNC Health Foundation") are counted as affiliates; Table 35 shows the research total without them.

Totals use tiers A–C only. Tier D and unresolved rows are excluded and quantified in the sensitivity analysis.

3.2 Funder typology

Every funder EIN is typed with ordered rules using the form, the IRS master file (NTEE and foundation codes), and indicators extracted from its own returns: Schedule A public-charity status (hospital, school, college-support organization, medical research organization), Schedule D donor-advised fund activity, and the share of revenue from government grants. The types are:

- *Internal or non-philanthropic*, excluded from external philanthropy:

  - university foundations and affiliates, including any public charity paying ≥90% of its grants to one institution;
  - hospitals and health systems;
  - athletic conferences and the NCAA;
  - government-funded intermediaries: public charities with at least 25% of revenue from government grants (50% for disease charities, NTEE G), and operators of federal research facilities, whose grants to universities are largely federal pass-through, for example AURA's Hubble grants.

- *External*, counted as philanthropy:
  - private foundations (all 990-PF filers);
  - national donor-advised fund sponsors and other DAF-dominant sponsors;
  - community foundations;
  - medical research organizations;
  - health and science charities (NTEE G, H, U);
  - other public charities.

Rows whose purpose text names a subaward or federal award are also excluded from philanthropy. Because the IRS master file's NTEE codes are sometimes wrong or missing (the Breast Cancer Research Foundation carries a disaster-preparedness code), the types of the 200 largest research funders were checked individually (AI-assisted, documented in `funder_type_overrides.csv`); 18 health-research charities were moved from "other public charity" to "health and science charity".

3.3 Research and field classification

Purpose text on 990 filings is short and often generic ("GENERAL SUPPORT", "EDUCATION"). A rule-based classifier assigns each grant to one of six layers:

- *explicit research*: research, study, trial, evaluation, laboratory, investigator, scientific objects, research instruments, or research verbs ("to study", "to assess", "examining");
- *probable*: fellowships, science, endowed chairs, doctoral training, centers and institutes, or a specific science and engineering topic;
- *research capital*: explicit-research purposes that fund a building, construction, renovation, or facilities ("build research building", "research, scholarship and facilities"); reported separately and not counted as research, because HERD excludes construction; this rule takes precedence over the mixed-purpose flag;
- *excluded*: scholarships, athletics, construction and other capital gifts, events;
- *none*: generic text;
- *funder profile*: generic text from a research-dominant funder. The audit rejected this layer (below).

Text that describes the recipient or a non-cash gift rather than the grant ("a private research university", "method used to determine the fair market value") is removed before the rules are applied. The HERD broad field is estimated from purpose keywords. When the purpose names no field, the funder's dominant field is used if it has at least ten classified grants and at least 70% of its

classified research dollars fall in one field. Grants from disease and medical-research charities (NTEE major groups G and H) whose purposes name no field are assigned to life sciences. By dollars, 13% of classified research grants received their field this way. Our headline measure of research is the explicit layer; the explicit plus probable layers give a broader measure. Neither is a bound on research dollars, since research described only in generic terms falls outside both (Section 3.4).

3.4 Reliability of the research labels

No reading of a 990 purpose text is authoritative. The IRS prescribes no vocabulary for the field, and a text such as "HIV" or "scholarships, faculty support and facilities" does not say whether the money funds research. We therefore do not calibrate the classifier against a single reference. Every purpose text is read four ways by machine, a probability sample of texts is read by two people, and we report how far the readings agree and the range of totals they imply. Appendix F gives the procedure and the tables.

Machine readings. Besides the rules, three language models (Claude Sonnet 5.5, Gemini 2.5 Flash and GPT-5-mini) labelled all 121,070 unique purpose texts of external grants as research, not research or unclear under a written codebook, without seeing the classifier's output. Over grants paid in 2020–2024, excluding research-capital rows as the headline does, the readings put research at $13.0B (the explicit layer), $11.9B where all three models agree, $13.6B where two of them do, and $12.5–15.0B for single models (Table 28). The models label 88–93% of the explicit layer's dollars research and at most 2% not research, and find $1.0–2.9B of research outside the explicit and research-capital layers. The dollars they call unclear are $16.9–21.5B for the single models ($13.8B where all three agree), against $8.7B in the rules' probable layer.

Human readings. From six strata defined by the models' votes we drew 651 texts with probability proportional to dollars, taking the texts of the 100 largest research grants and the 30 largest commitments with certainty. Two readers labelled them blind to every machine label under the same codebook: reader 1 (the author, who also designed the classifier and the pipeline) the whole sample, reader 2 (independent of the study) a subset of 149 texts; reader 1 also re-read 150 texts blind to the first reading. Weighted to the population, on the common domain of Table 28 (research-capital rows excluded, as in the headline), reader 1's labels put research at $11.3B (10.3–12.3) and unclear at $10.0B (8.2–11.9); with the research-capital rows included the research figure is $11.9B, reader 1 labelling 71% of that layer's dollars research; they confirm 72% of the explicit layer's dollars as research, call 16% unclear and 11% not research, and find $2.2B of research outside the research layers (Tables 28 and 33).

Agreement. The readings agree in proportion to how alike the readers are (Table 29). The three models give the same label to 91–93% of dollars in pairwise comparisons; the rules and a model to 81–82%; reader 1 and a model to 78–80%; reader 1 and reader 2 to 75% of their texts' dollars and 56% of the texts (Cohen's $\kappa = 0.24$; 81% on research against everything else); reader 1 with reader 1, on a blind second reading of 150 texts, to 75% of texts (113 of 150; 77% when the two recheck groups are weighted to their numbers in the sample) and 93% of their dollars. Of the 149 texts both readers read, 12 were research for both and 62 not research for both (Table 30); agreement on the research label alone is 45%. Where all three models said research, reader 1 agreed on 72% of the dollars (66–78%) and said not research on 15%; where all three said not research, reader 1 found no research in 161 sampled texts (Table 32). Disagreement concentrates in generic texts and in texts that name research beside other uses or that fund people and institutions.

What the readings measure. Three quantities must be kept apart: whether a text names research under a written rule; the reported amount of the grant rows that carry the label; and the amount spent on research, which the text cannot show, since a grant that names research beside scholarships is counted whole and general support can fund research. The readings measure the first two. On one domain (grants paid in 2020–2024 with a purpose text, research-capital rows excluded), the point estimates assign $11–15B of reported amounts to a stated research purpose depending on the reading (reader 1 $11.3B, the single models $12.5–15.0B, the classifier $13.0B; Table 28) and $9–21B to text labelled unclear, which is a codebook category, not the total whose use is unknown. This spread describes sensitivity to the interpretation of the purpose text with the definition held fixed; readings that comply imperfectly with the codebook (Appendix F) are part of it, so it is not a spread of equally valid measurements of one construct. It is not a confidence interval, and it bounds neither research expenditure nor the true total of research grants. The intervals attached to the sample estimates measure sampling error around one reader's labels only. A further $0.29B of external grants paid in 2020–2024 carry no purpose text and are outside every reading. We report the explicit layer as one reproducible operational classification, not as a calibrated estimate.

Recipient resolution. These figures have not been re-audited: they come from samples labelled by an AI model (Claude, Anthropic) that also helped write the matching rules, and are preliminary. On 120 matches the first audit found 88% exact precision. The errors came mostly from EINs that filers reported for the wrong organization. After the fixes in Section 3.1, a fresh audit of 90 matches (30 per tier) found 89% exact precision unweighted; weighting each tier by its share of external dollars gives 92% (95% CI 86%–97%) and 97% at the level of the institution family. EIN matches (tier A) were the weakest, at 77%.

4 Results

4.1 How much private money reaches universities?

Figure 3 decomposes all grants paid to matched US institutions. Of $226B paid in 2020–2024, external philanthropy was $103B. The largest single component of the remainder is transfers from universities' own foundations and affiliated organizations ($87B). These are largely donors' gifts being moved from a foundation to the university; the funder rules exclude them to define the retained series and reduce potential pass-through overlap; actual duplicate transactions and original sources are not identified. Hospitals and health systems paid a further $18B, largely to their affiliated medical schools; athletic conferences and the NCAA distributed $13B of media revenue; and government-funded intermediaries passed through $4.3B, of which $2.0B was explicitly for research.

External philanthropy grew from $17.4B in 2020 to $23.7B in 2024 (8.0% a year). Explicit research grants grew from $2.27B to $2.96B (6.9% a year), more slowly than external giving as a whole, against 40% for federal R&D spending over FY2020–FY2024. Resampling funders gives a 95% interval of 6%–54% for the four-year change; since the data are a census of filers, this is a robustness exercise over the set of funders, not a sampling interval. Research capital ($0.80B in 125 grants for research buildings, construction, and facilities) is reported separately and is not in these totals, because HERD excludes construction; counted as research, it would raise growth to 40%. Grants whose purpose names research together with scholarships, endowment, or general support ($1.11B) stay in the totals; without them growth is 44%. The two forms measure different things (Section 2), and they diverge (Table 3): private foundations' research grants, reported as paid on Form 990-PF (cash or property), rose only 15%, while public charities' research grants on Schedule I,

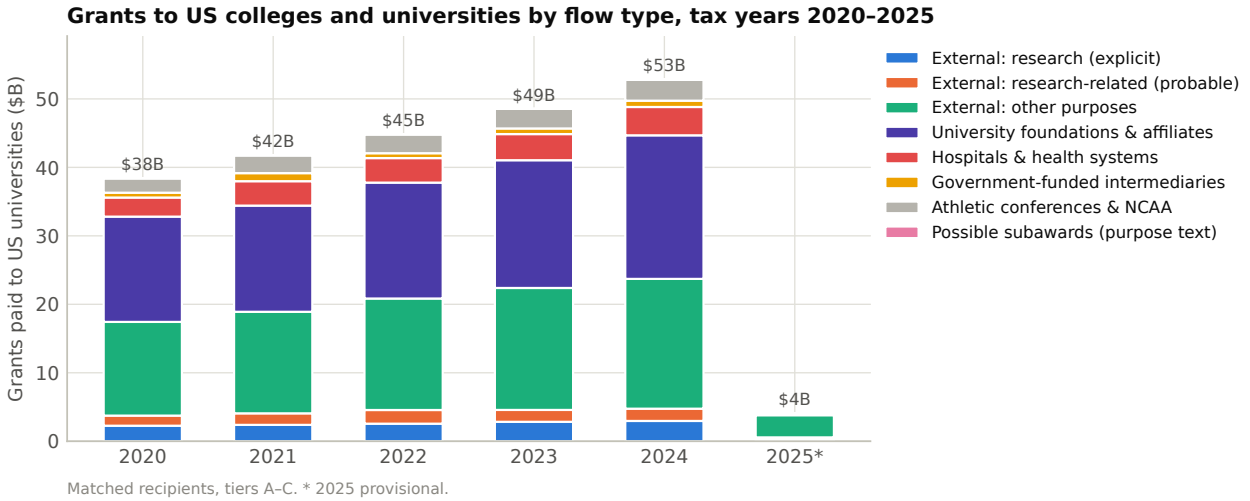


Figure 3: All grants paid to US colleges and universities by type of flow, tax years 2020–2025 (2025 provisional; matched recipients).

recorded under each filer's accounting method, rose 53%. Part of the Schedule I increase may reflect multi-year grants booked when made rather than growth in payments; the data cannot separate the two. Table 4 collects the growth rate under each definition: in current dollars, from 15% to 53%, against 40% for federal R&D; in constant dollars the headline rose 10% and federal R&D 18%. Under the headline classification, reported grant amounts carrying an explicit research purpose grew 31% in nominal terms between 2020 and 2024, against 40% for federal R&D expenditure. With the same capital exclusion, the tested model-based readings of the purpose texts yield 24%–31% (Table 6; its five-year totals are the Research column of Table 28, on the same domain). Alternative accounting and purpose definitions yield 15%–53%, so the ordering is definition-dependent. The agreement of the tested readings shows robustness to those readings within the capital exclusion, not to every plausible definition or to errors the readings share. The observed series require no assumption about labelling error; reading them as growth in underlying research funding does, because the dollar-weighted labelling error could have changed between 2020 and 2024, which the validation sample cannot test. Multiplying the observed 2024-to-2020 ratio by 1.072 (7.2%), the rise in the actual-to-labelled ratio that drifting labelling error would have to produce, would equalise the two series; that is a tipping point, not an estimated correction. The 2024 endpoint is also still filling in: returns continue to be posted two years or more after the tax year, and counting every year only from returns posted within the lag that 2024 has had (Table 5) gives 38%, so late filings and amendments may change the 2024 figure and the headline growth. Growth is not an artefact of filers entering the data: among the 19,601 funders that paid university grants in every year from 2020 to 2024, which account for 85% of external dollars, research grants rose 23% and all external grants 33%. Non-cash gifts are 1.5% of external dollars. Explicit research grants remain 13% of external dollars; including research-related support raises the share to 21%. A total of 5,916 funders paid 51,498 explicit research grants to 1,190 institutions over the period.

4.2 Who funds university research?

Private foundations are the core of both general and research philanthropy (Figure 4; Table 7). The contrast between the two panels is the main result. Donor-advised fund sponsors pay 27% of external dollars, a share that rose from 26% in 2020 to 29% in 2024, but only 0.2% of their grants carry a research purpose. Their purposes are generic by construction, since the sponsor rather than the

Table 3: Research and external grants to universities by form and accounting basis

Tax year	Research, 990-PF ($B)	Research, Sch. I ($B)	External, 990-PF ($B)	External, Sch. I ($B)
2020	1.34	0.93	9.2	8.2
2021	1.29	1.10	10.7	8.2
2022	1.45	1.12	11.1	9.8
2023	1.54	1.29	12.2	10.1
2024	1.54	1.43	12.1	11.6
Change 2020–2024	15%	53%	31%	42%

990-PF: private foundations, grants reported as paid during the year (cash or property). Schedule I: public charities (including donor-advised fund sponsors and health charities), grants reported under the filer's accounting method, which can record a multi-year grant in the year it is made.

Table 4: Growth of explicit research grants to universities under alternative definitions

Measure	Change 2020–2024
Headline: explicit research, research capital excluded	31%
Lag-matched: returns posted within the same lag as 2024 (August of year+2)	38%
Funders that gave in every year (stable panel)	23%
Excluding the largest funder	31%
Excluding each year's ten largest grants	41%
Research-only purposes (mixed-purpose grants excluded)	44%
Research capital included	40%
Private foundations only (Form 990-PF, reported as paid)	15%
Public charities only (Schedule I)	53%
Headline in constant 2017 dollars (GDP price index)	10%
Federal R&D, HERD FY2020–FY2024	40%
Federal R&D in constant 2017 dollars	18%

990 amounts by the funder's tax year (70% of research dollars from filers whose year ends in December, so tax year 2024 runs about six months after HERD FY2024, which for most institutions ends in June). Constant dollars use the annual BEA GDP implicit price deflator, 2017=100 (NIPA Table 1.1.9 line 1, FRED series A191RD3A086NBEA, vintage 9 April 2026 (U.S. Bureau of Economic Analysis 2026)): a 990 amount for tax year t is divided by the index for calendar year t over 100; HERD fiscal year t is divided by the mean of the indexes for $t-1$ and t over 100, an approximation to a July–June year, since the series is annual (the factor of 100 cancels in growth ratios). The index values used (2019–2024: 103.979, 105.377, 110.186, 118.023, 122.390, 125.428) are in the released prices file. Current dollars unless stated.

Table 5: Posting lag: explicit research grants counted from returns posted within the lag available to tax year 2024

Tax year	Share posted within the 2024 lag	Research, lag-matched ($B)	Research, all returns ($B)
2020	94.6%	2.14	2.27
2021	95.5%	2.28	2.39
2022	98.3%	2.52	2.56
2023	98.3%	2.79	2.84
2024	100.0%	2.96	2.96

Explicit research grants by the funder's tax year, counted from returns posted to the IRS e-file archives by August of the second year after the tax year (the lag available to tax year 2024 at the 26–27 September 2026 download). Earlier years show how much arrives later.

Table 6: Growth of research grants, 2020 to 2024, under each reading of the purpose text

Reading	2020 $B	2021	2022	2023	2024	Five years	2020 to 2024
Rules (classifier, explicit layer)	2.27	2.39	2.56	2.84	2.96	13.02	31%
Claude Sonnet 5.5	2.22	2.31	2.47	2.69	2.79	12.49	26%
Gemini 2.5 Flash	2.40	2.55	2.74	3.02	2.97	13.68	24%
GPT-5-mini	2.61	2.69	2.92	3.33	3.41	14.96	31%
Two of the three models	2.41	2.52	2.70	3.02	3.01	13.65	25%
All three models	2.14	2.22	2.39	2.54	2.66	11.94	24%

External grants paid to US universities, tax years 2020–2024, by the year's reported amounts; rows classified as research capital are excluded from every reading, as in the headline. Model readings apply the full-population labels; the rules row is the classifier's explicit layer over the same rows (grant rows without a purpose text are outside it). Current dollars; the 2024 totals may change with late filings and amendments. The five-year totals are the Research column of Table 28, on the same domain.

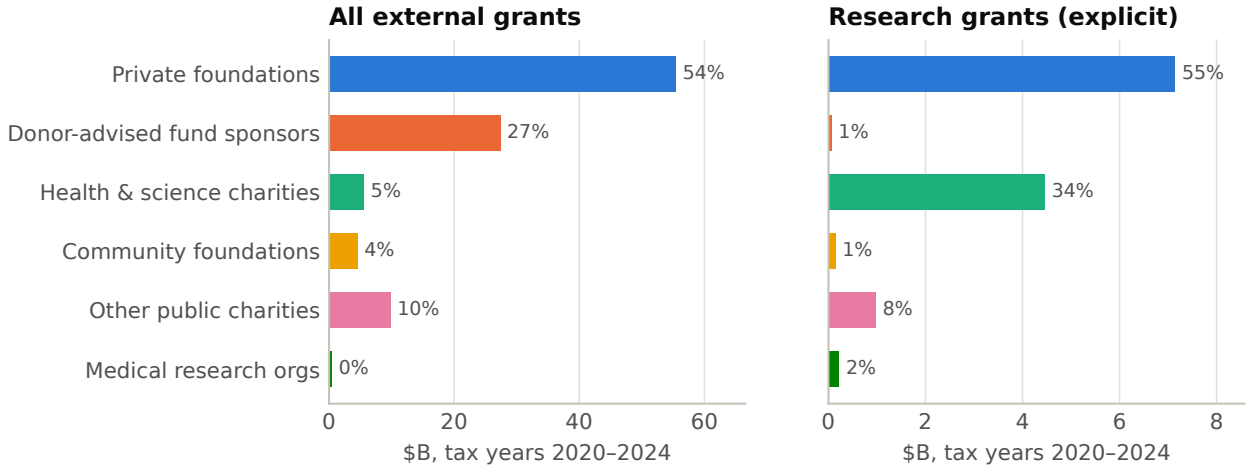


Figure 4: External grants and explicit research grants to US universities by funder type, tax years 2020–2024. Labels give each type's share.

Table 7: Funder types: external and research grants to US universities, tax years 2020–2024

Funder type	Funders	External ($B)	Share	Research ($B)	Share	Research / external	Median research grant
Private foundations	44,302	55.4	54%	7.15	55%	13%	$87K
Donor-advised fund sponsors	180	27.4	27%	0.07	1%	0%	$60K
Health & science charities	1,033	5.6	5%	4.46	34%	80%	$100K
Community foundations	938	4.6	4%	0.15	1%	3%	$40K
Other public charities	8,188	9.8	10%	0.98	8%	10%	$37K
Medical research orgs	44	0.5	0%	0.22	2%	48%	$406K
Total	54,685	103.3	100%	13.02	100%	13%	$75K

donor writes the purpose line. Health and science charities, such as the American Heart Association, American Cancer Society, Cystic Fibrosis Foundation, and Michael J. Fox Foundation, pay only 5% of external dollars but 34% of research dollars, and 80% of their reported university-grant amounts carry a research label under the headline classification, against 13% for private foundations.

Figure 5 and Table 8 list the largest funders. The Gates Foundation leads with $0.77B, followed by the American Heart Association and American Cancer Society. The funders differ sharply in reach. The American Heart Association funded more than 200 institutions; the Sergey Brin and Blavatnik family foundations concentrated large gifts on a handful. For offices, reach, the number of

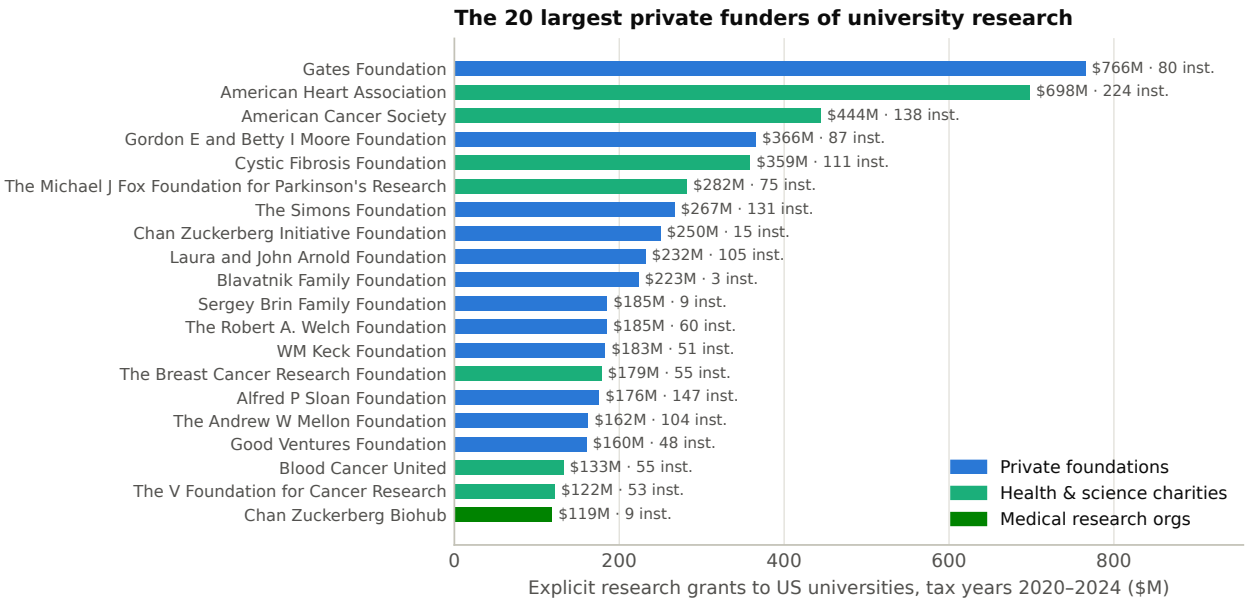


Figure 5: The 20 largest funders of explicit research grants to US universities, tax years 2020–2024, with the number of institutions each funded. Full data: ascendr.ai/resources/funds, file 01.

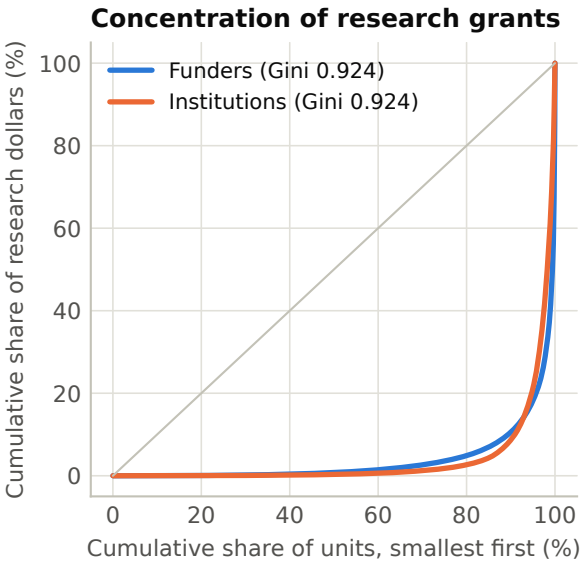


Figure 6: Lorenz curves of explicit research grants across funders and institutions, 2020–2024. Full data: ascendr.ai/resources/funds, file 01. Institutions: file 04.

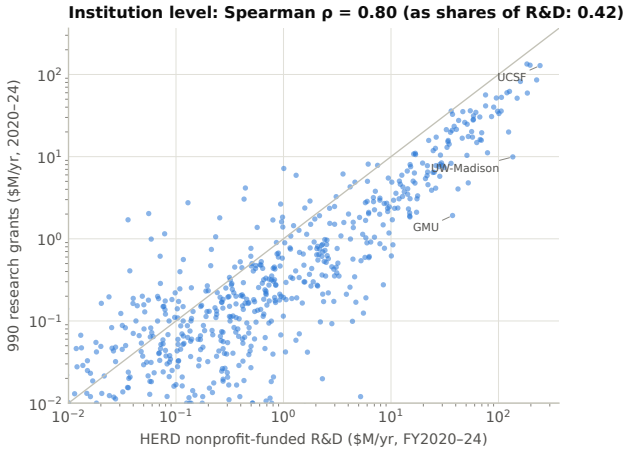


Figure 7: Institution-level 990 research grants against HERD nonprofit-funded R&D (log scales; diagonal = equality). HERD counts the university's R&D expenditures from nonprofit sources; the 990 series counts funder payments whose stated purpose names research. Full data: ascendr.ai/resources/funds, file 04.

institutions a funder supports, is a first screen for whether a new application is plausible; the data do not compare reach and size as predictors.

Research money is extremely concentrated on both sides of the market (Figure 6). The Gini coefficient (Gini 1912) is 0.924 across the 5,916 funders and 0.924 across the 1,190 recipient institutions; the two coincide to three decimals and differ only in the fifth. The top 10 funders paid 30% and the top 50 56%; the top 10 institutions received 33% and the top 30 59%.

Table 8: The 25 largest private funders of university research, tax years 2020–2024. Full data: ascendr.ai/resources/funds, file 01.

Funder	Type	St.	Assets ($B)	Research ($M)	Grants	Inst.	Median ($K)	Share of giving	Top field	Presel.
Gates Foundation	Private	WA	78.7	766	513	80	576	3%	Life sciences	–
American Heart Association	Health	TX	2.0	698	693	224	400	74%	Life sciences	n/a
American Cancer Society	Health	GA	1.7	444	414	138	792	53%	Life sciences	n/a
Gordon E and Betty I Moore Foundation	Private	CA	11.5	366	753	87	315	20%	Physical sciences	Yes
Cystic Fibrosis Foundation	Health	MD	5.0	359	1,101	111	168	40%	Life sciences	n/a
The Michael J Fox Foundation for Parkinson's Research	Health	NY	0.6	282	230	75	358	42%	Life sciences	n/a
The Simons Foundation	Private	NY	4.5	267	1,837	131	132	18%	Life sciences	Yes
Chan Zuckerberg Initiative Foundation	Private	CA	7.5	250	26	15	2,300	20%	Computer sciences	Yes
Laura and John Arnold Foundation	Private	TX	4.8	232	943	105	125	25%	Social sciences	Yes
Blavatnik Family Foundation	Private	NY	0.1	223	14	3	2,000	69%	Life sciences	Yes
Sergey Brin Family Foundation	Private	CA	4.3	185	36	9	2,119	9%	Life sciences	Yes
The Robert A. Welch Foundation	Private	TX	0.9	185	300	60	52	99%	Physical sciences	–
WM Keck Foundation	Private	CA	1.7	183	104	51	1,200	54%	Life sciences	–
The Breast Cancer Research Foundation	Health	NY	0.2	179	242	55	450	70%	Life sciences	n/a
Alfred P Sloan Foundation	Private	NY	2.2	176	1,224	147	75	40%	Computer sciences	–
The Andrew W Mellon Foundation	Private	NY	7.9	162	213	104	500	7%	Non-S&E fields	–
Good Ventures Foundation	Private	CA	10.1	160	215	48	476	11%	Life sciences	Yes
Blood Cancer United	Health	DC	0.5	133	207	55	316	60%	Life sciences	n/a
The V Foundation for Cancer Research	Health	NC	0.1	122	162	53	600	65%	Life sciences	n/a
Chan Zuckerberg Biohub	Medical	CA	1.5	119	23	9	4,100	80%	Life sciences	n/a
DR Miriam & Sheldon G Adelson Medical Research Foundation	Private	MA	–	108	85	20	699	55%	Life sciences	Yes
Breakthrough T1D	Health	NY	0.5	106	111	62	512	35%	Life sciences	n/a
The Leona M and Harry B Helmsley Charitable Trust	Private	NY	7.1	98	200	38	332	5%	Life sciences	Yes
National Multiple Sclerosis Society	Health	NY	0.2	80	231	65	221	67%	Life sciences	n/a
Prostate Cancer Foundation	Health	CA	0.1	79	81	31	500	66%	Life sciences	n/a

Research = explicit research grants paid to US universities (tiers A–C), tax years 2020–2024. Funders filing under several EINs are combined (Blavatnik Family Foundation: EINs 81-2444350 and 85-1345780). Assets: fair market value (990-PF) or total assets (990), latest filing. Share of giving: research grants to universities as a share of all grants the funder paid to any recipient. Presel.: Yes = the return states the foundation gives only to preselected organizations; – = not stated; n/a = Form 990 filer (question not asked).

4.3 What fields does private money support?

Life sciences receive 80% of explicit research dollars whose field could be estimated (Figure 8, Table 9); 20% of research dollars could not be assigned a field. Growth was fastest in Geosciences (17% a year, from a small base) and Computer sciences (13%), while Psychology (-3%) and Mathematics (-7%) declined. Field assignments come from keywords and funder profiles and have not yet been validated against labelled data, so field shares and growth rates are indicative; growth in the smaller fields rests on few funders. Figure 9 shows how each funder type splits its research dollars. Health charities and medical research organizations are almost entirely life sciences; private foundations are the only type whose research dollars spread across many fields.

4.4 Private money and federal dependence by field

HERD shows the mirror image of federal support (Figure 10, Table 10). Across fields, the federal share of R&D and the nonprofit share are strongly inversely related (Spearman $\rho = -0.79$ across 10 fields, p=0.006); the two are components of one funding composition, so part of the inverse relation is arithmetic, and the ten-field association is descriptive. The other components are institutional funds, state and local government, business and other sources; in geosciences, for example, institutional funds carry 19% of R&D and the four together 30%. The federal government funds 66% of physical sciences R&D and 63% of engineering, but only 33% of social sciences, where nonprofits fund 15%. Nationally, nonprofits funded $6.7B (5.7%) of university R&D in FY2024. Identifiable 990 research

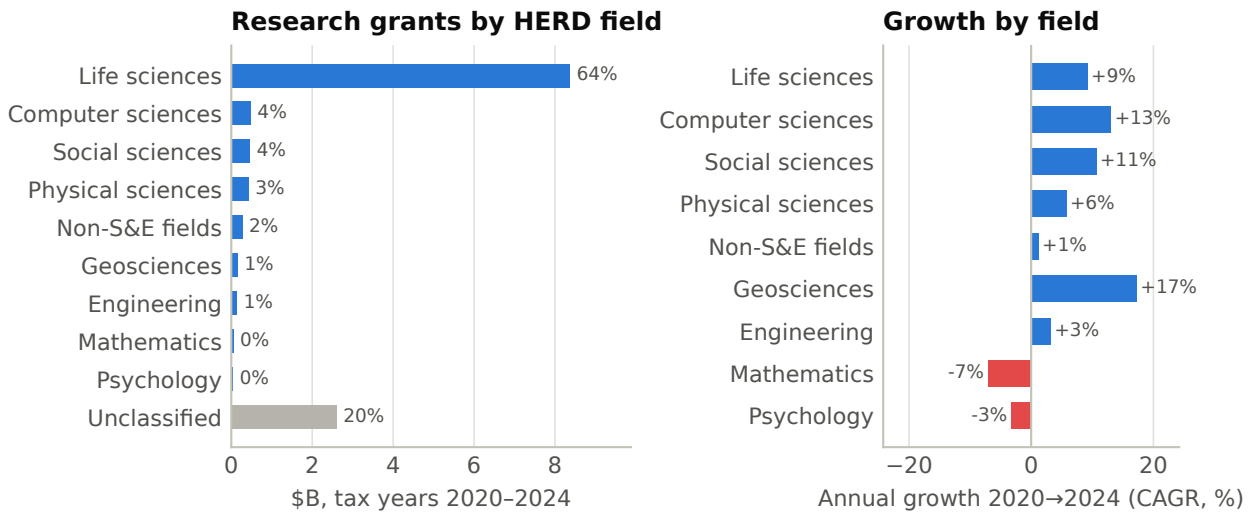


Figure 8: Explicit research grants by estimated HERD field, 2020–2024 totals and compound annual growth. Left-panel shares are of all research dollars, including those whose field could not be estimated; the text and Table 9 use shares of classified dollars. Full data: ascendr.ai/resources/funds, file 02.

Table 9: Research grants by HERD field and the three largest funders in each. Full data: ascendr.ai/resources/funds, file 02.

Field	$M	Share	CAGR	Funders	Three largest funders
Life sciences	8,368	80%	+9.2%	3,079	Gates Foundation; American Heart Association; American Cancer Society
Computer sciences	484	5%	+13.1%	222	Chan Zuckerberg Initiative Foundation; Alfred P Sloan Foundation; Good Ventures Foundation
Social sciences	460	4%	+10.7%	299	Laura and John Arnold Foundation; Kinder Foundation; Alfred P Sloan Foundation
Physical sciences	433	4%	+5.8%	54	The Robert A. Welch Foundation; Gordon E and Betty I Moore Foundation; The Simons Foundation
Non-S&E fields	276	3%	+1.2%	466	The Andrew W Mellon Foundation; John Templeton Foundation; The Chicago Community Trust
Geosciences	156	2%	+17.3%	147	Chan Zuckerberg Initiative Foundation; Grantham Foundation for the Protection of the Environment; Gordon E and Betty I Moore Foundation
Engineering	144	1%	+3.2%	127	Gordon E and Betty I Moore Foundation; Alfred P Sloan Foundation; Gong Family Foundation
Mathematics	52	1%	-7.1%	25	The Simons Foundation; The Heising-Simons Foundation; Alfred P Sloan Foundation
Psychology	44	0%	-3.3%	73	Pritzker Family Foundation; The Simons Foundation; Valhalla Foundation

Explicit research grants, tax years 2020–2024; shares exclude grants whose field could not be estimated. Field estimated from purpose text, else from the funder's dominant field.

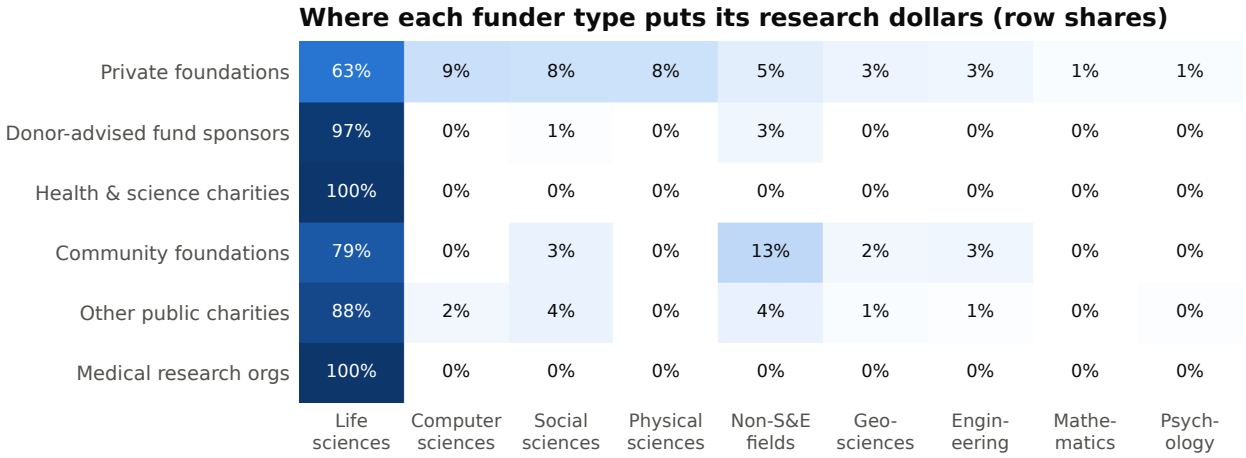
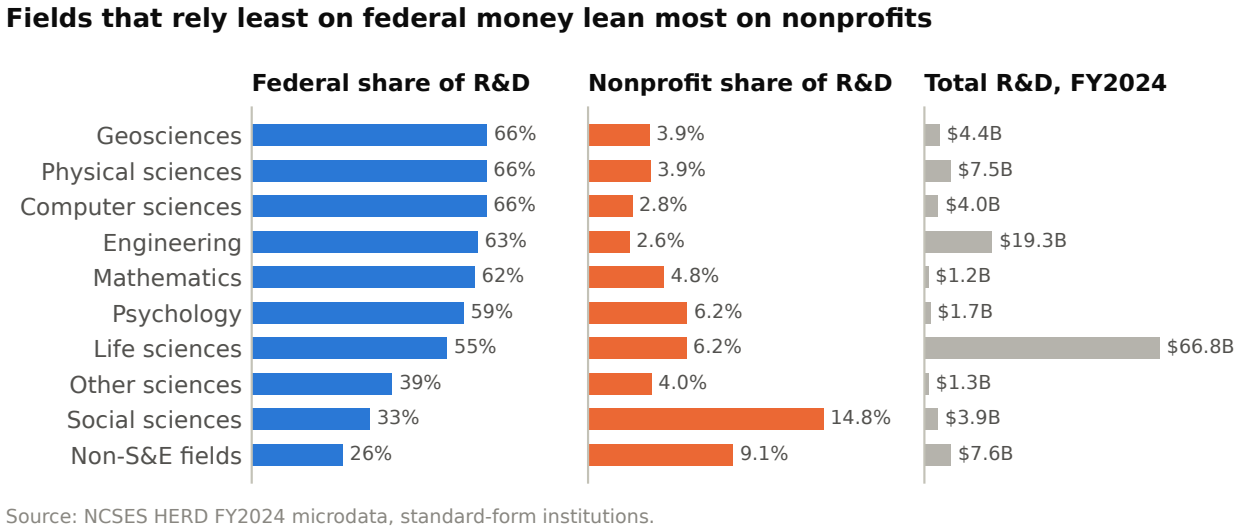


Figure 9: Distribution of each funder type's classified research dollars across HERD fields (row shares).



Source: NCSES HERD FY2024 microdata, standard-form institutions.

Figure 10: Federal and nonprofit shares of university R&D by HERD field, FY2024.

grants, however, are small relative to R&D in every field (at most 2.5% a year, in Life sciences) and are not systematically larger where federal shares are lower ($\rho = -0.17$ across the nine fields the keyword crosswalk assigns, p=0.67); HERD's nonprofit category also includes sources that file no 990 grant list, such as hospitals and foreign nonprofits. Nothing here shows that philanthropy compensates for federal funding or that a shift of fields would attract replacement money; a research office can target the handful of funders active in a field (Table 9), not expect replacement.

4.5 Which institutions receive private research money?

Harvard University received the most explicit research grants ($0.67B), followed by Stanford University, UCSF, and University of Washington-Seattle Campus (Figure 11; Table 11). Rankings at the top depend on how a few very large gifts are read. The Bloomberg Family Foundation's grants to Johns Hopkins ($538M, "to support research, scholarship and facilities") name facilities and are counted as research capital, so Johns Hopkins ranks 5th; counting research capital as research would put Johns Hopkins University first. Excluding grants whose purpose also names scholarships, endowment, or general support lowers the national research total by 8.5% (Table 35) and would put University of California-San Francisco first.

Table 10: Federal dependence and private research grants by field

Field	R&D FY2024 ($B)	Federal share	Nonprofit share	990 research ($M/yr)	990 research / R&D
Geosciences	4.4	66%	4%	31	0.7%
Physical sciences	7.5	66%	4%	87	1.2%
Computer sciences	4.0	66%	3%	97	2.4%
Engineering	19.3	63%	3%	29	0.1%
Mathematics	1.2	62%	5%	10	0.9%
Psychology	1.7	59%	6%	9	0.5%
Life sciences	66.8	55%	6%	1,674	2.5%
Other sciences	1.3	39%	4%	–	–
Social sciences	3.9	33%	15%	92	2.4%
Non-S&E fields	7.6	26%	9%	55	0.7%

HERD: R&D expenditures (standard-form institutions), all ten broad fields. 990 research: explicit research grants paid, annual average 2020–2024, classified fields only; the keyword crosswalk assigns nine of the ten fields, so 'Other sciences' (sciences, n.e.c.) has no 990 column. Measures are not additive.

The ranking follows research scale: across 684 institutions, 990 research grants and HERD nonprofit-funded R&D have a Spearman correlation of 0.80 (95% bootstrap CI 0.76–0.84; Figure 7). Much of this is size, since 990 research grants correlate 0.78 with total R&D alone. Measured as shares of each institution's R&D, the correlation is 0.42 (CI 0.35–0.49), and controlling for total R&D it is 0.39 (CI 0.31–0.47): institutions whose R&D relies more on nonprofits do receive more identifiable private research grants. The association is descriptive; dividing both measures by total R&D introduces a shared denominator, so the size-adjusted correlations are indicative, and none of them shows that the two series measure the same thing.

In aggregate, identifiable 990 research grants equal about 41% of HERD nonprofit R&D (36% at the median institution). This ratio is not a coverage or recall rate: the two measures count different things, what the institution spent and what the funder reported paying, and the gap has several sources that the figure cannot separate or size.

HERD counts what the university spent on research from any nonprofit source, so it includes grants whose 990 purpose text is generic or names a centre rather than research (the unsettled dollars of Section 3.4). It includes funders outside the itemized 990 data: foreign nonprofits, nonprofit hospitals, support delivered as employment rather than grants, grant lists filed only as attachments (Section 5), and philanthropies organised as LLCs where their gifts reach the university through a nonprofit vehicle (a for-profit sponsor is reported under business, a company's foundation under nonprofit).

In the federal and USAspending panels, 8 system-level payees (the SUNY and CUNY research foundations, the University of California Office of the President, the University of Hawaii and University of Puerto Rico systems), carrying $0.4B over FY2020–FY2026, are assigned to the system's research flagship, whereas the 990 data keep system-addressed grants at system level ($232M of research); institution-level comparisons across the two should allow for that difference. HERD asks institutions to report pass-through funds by their original source, so a foundation grant that reached a university as a subaward from another institution is nonprofit R&D there but is attributed to the first recipient in the 990 data; it also directs funds that arrive through the institution's own 501(c)(3) foundation to their original source, so a donor's gift designated for research is reported under other sources and an unrestricted gift under institutional funds, not under nonprofit organizations (National Center for Science and Engineering Statistics 2025a).

HERD excludes construction but includes equipment bought from research accounts, whereas the research-capital layer here excludes both buildings and equipment grants whose text names no

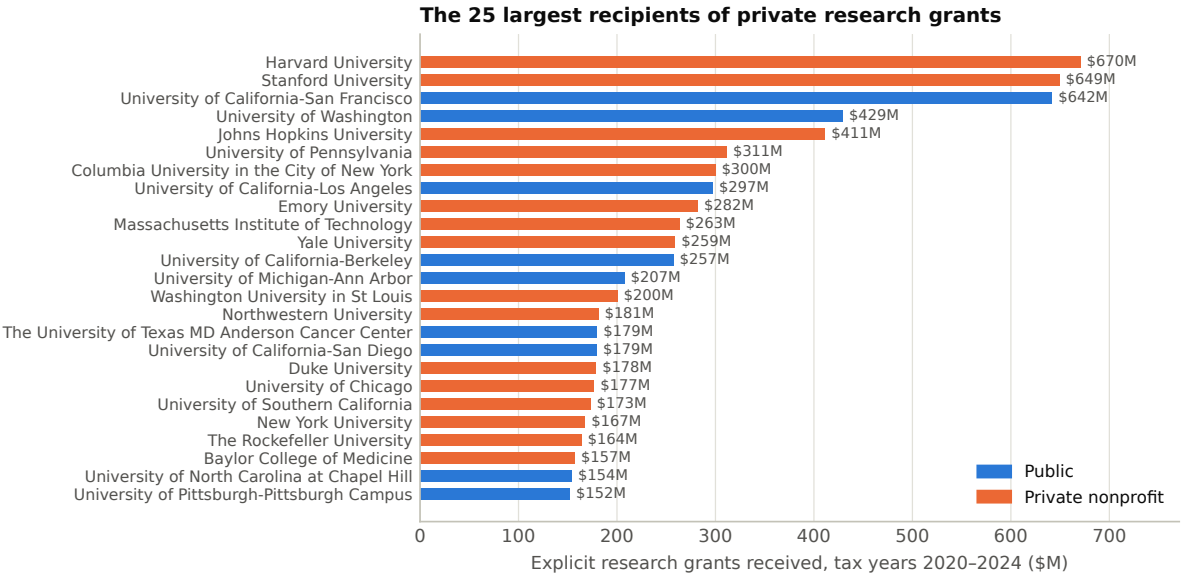


Figure 11: The 25 largest recipients of explicit research grants, tax years 2020–2024. Full data: ascendr.ai/resources/funds, file 04.

research use. And a payment recorded in the funder's tax year is spent over later fiscal years, with recovered indirect costs, so the two series differ in timing even for the same grant. A smaller flow runs the other way: a grant whose purpose says research but that the university spends on a chair, a prize or a programme appears in the 990 series and not in HERD.

Outliers are informative. Some research-intensive universities, such as the University of Maryland, College Park, and the University of Wisconsin–Madison, have ratios below 15%. Part of what HERD records for them may arrive through channels this report treats as internal, such as a university's own research foundation, which HERD reports by original source rather than as nonprofit funds, or through grants whose purpose text is generic; the data cannot say which, and ratios above one at other institutions point to the same unreconciled differences rather than to a fault in either series.

R1 universities receive 75% of research grants, close to their 82% share of federal R&D, but only 63% of all external philanthropy; baccalaureate colleges receive 9% of external grants but 1% of research grants (Figure 12). Public and private institutions split research grants almost evenly (public 48%), whereas public institutions perform 62% of federally funded R&D. The route differs by control (Figure 13). At public universities, 26% of research dollars is addressed to an affiliated foundation, medical school, or research foundation rather than to the university, against 5% at private universities; for all external grants to public institutions, affiliates receive more than half.

4.6 How funders behave

Breadth. 63% of research funders supported only one university in five years, but funders that supported more than 10 institutions provide 68% of research dollars (Figure 14). Only 125 funders supported more than 25 universities. They are the natural prospects for an institution without a prior relationship.

Persistence. In 2024, 77% of research dollars (62% of funder–institution pairs) went to pairs that were also active in 2022 or 2023. Private research funding is persistent: once a relationship is observed, payments recur. Repeated payments can be instalments of one award as well as renewed decisions; the data do not distinguish them, so the pattern is persistence, not a measured renewal

Table 11: The 30 largest recipients of private research grants, tax years 2020–2024. Full data: ascendr.ai/resources/funds, file 04.

Institution	Ctrl.	Carn.	Research ($M)	Funders	Via affil.	All external ($M)	HERD R&D ($M/yr)	990 res. / HERD nonprofit
Harvard University	Priv.	R1	670	257	6%	3,256	1,346	73%
Stanford University	Priv.	R1	649	480	2%	3,881	1,409	66%
University of California-San Francisco	Pub.	Med.	642	394	41%	2,480	1,868	53%
University of Washington-Seattle Campus	Pub.	R1	429	258	69%	1,414	1,586	38%
Johns Hopkins University	Priv.	R1	411	464	10%	5,946	3,529	51%
University of Pennsylvania	Priv.	R1	311	368	3%	1,480	1,825	49%
Columbia University in the City of New York	Priv.	R1	300	382	9%	1,657	1,231	50%
University of California-Los Angeles	Pub.	R1	297	373	19%	1,254	1,600	32%
Emory University	Priv.	R1	282	224	2%	1,009	992	74%
Massachusetts Institute of Technology	Priv.	R1	263	149	0%	1,552	998	49%
Yale University	Priv.	R1	259	335	8%	1,456	1,259	54%
University of California-Berkeley	Pub.	R1	257	187	18%	1,632	974	35%
University of Michigan-Ann Arbor	Pub.	R1	207	325	40%	1,134	1,824	55%
Washington University in St Louis	Priv.	R1	200	264	0%	615	1,074	44%
Northwestern University	Priv.	R1	181	223	3%	724	1,032	66%
The University of Texas MD Anderson Cancer Center	Pub.	Spec.	179	305	1%	373	1,195	99%
University of California-San Diego	Pub.	R1	179	233	11%	671	1,590	34%
Duke University	Priv.	R1	178	304	11%	1,410	1,383	36%
University of Chicago	Priv.	R1	177	248	3%	1,103	571	76%
University of Southern California	Priv.	R1	173	210	4%	778	1,071	56%
New York University	Priv.	R1	167	292	22%	1,172	1,249	33%
The Rockefeller University	Priv.	Med.	164	74	0%	490	353	88%
Baylor College of Medicine	Priv.	Med.	157	207	0%	388	792	54%
University of North Carolina at Chapel Hill	Pub.	R1	154	236	1%	586	1,375	36%
University of Pittsburgh-Pittsburgh Campus	Pub.	R1	152	247	0%	478	1,279	45%
University of Texas Southwestern Medical Center	Pub.	Med.	142	195	0%	417	723	49%
Icahn School of Medicine at Mount Sinai	Priv.	Med.	139	211	0%	453	890	48%
University of Minnesota-Twin Cities	Pub.	R1	138	245	32%	691	1,209	65%
The University of Texas at Austin	Pub.	R1	131	177	7%	980	920	54%
Weill Medical College of Cornell University	Priv.	Med.	125	181	0%	275	–	–

Research and external: grants paid, tax years 2020–2024 (five-year totals). Via affil.: share of research dollars addressed to a foundation, medical school, or other affiliate. HERD: FY2020–2024 annual average. Last column compares annual 990 research grants with HERD nonprofit-funded R&D (different measures; a ratio, not a coverage rate).

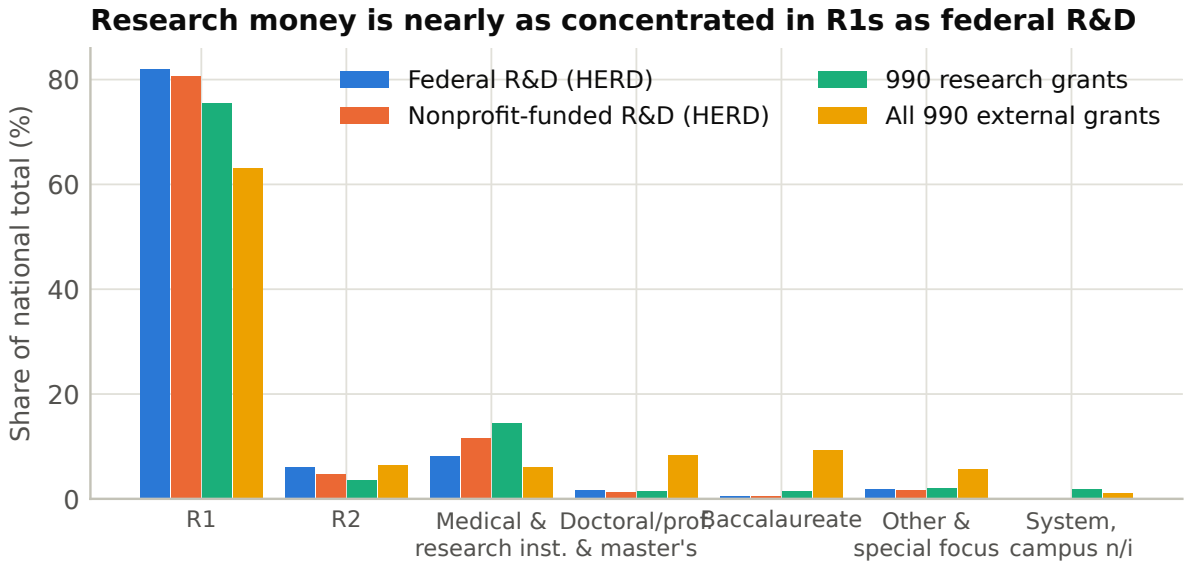


Figure 12: Shares of federal R&D, nonprofit R&D, 990 research grants, and all 990 external grants by Carnegie group.

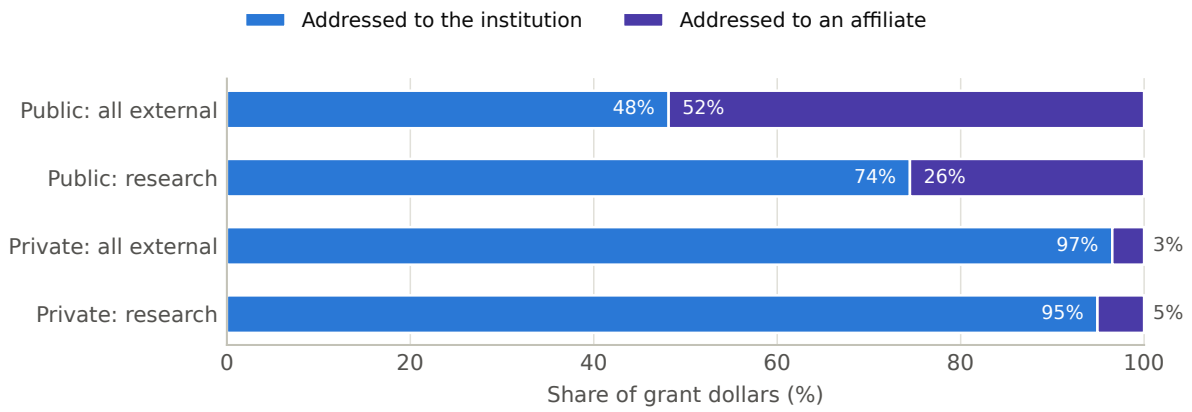


Figure 13: Share of grant dollars addressed to the institution itself versus an affiliate, by control, 2020–2024.

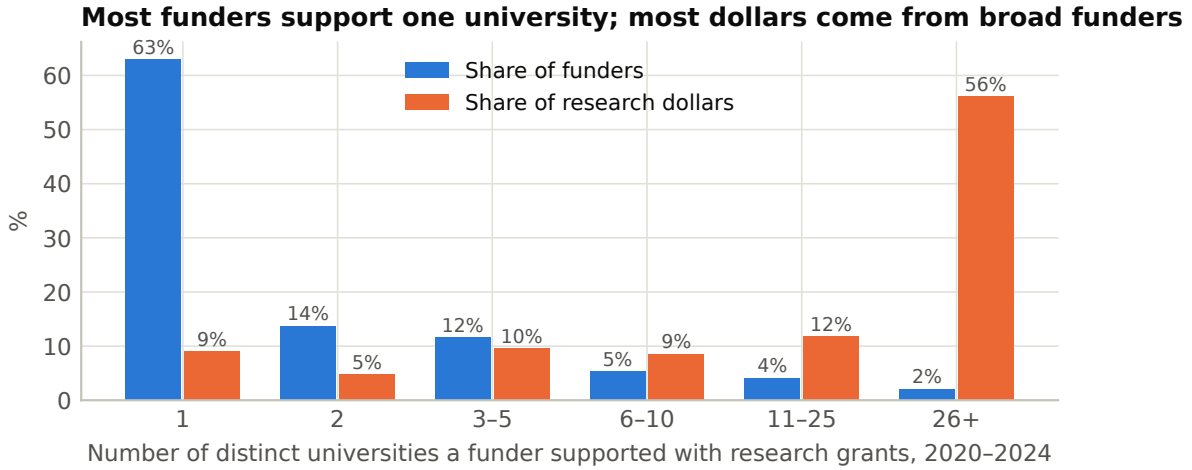


Figure 14: Number of universities each funder supported with research grants, 2020–2024: share of funders and of dollars. Full data: ascendr.ai/resources/funds, file 01.

mechanism.

Grant size. The median explicit research grant is $75K ($87K for private foundations, $100K for health charities; Figure 15). Grants of $1M or more are 4.7% of research grants but 49% of research dollars.

Home bias. Private foundations direct 39% of their research dollars to universities in their own state. Among the smallest quarter of foundations the figure is 49%, against the 6% expected if they gave in proportion to each state's share of national research receipts (Figure 16). Even the largest foundations keep 38% in-state. Home-state foundations are therefore a natural first prospect list.

4.7 The pipeline of committed funds

Form 990-PF also lists, on Part XIV line 3b, the grants a foundation approved during the tax year and had not paid by its end. The instructions exclude approvals made in an earlier year that are still unpaid (Internal Revenue Service 2024a), so the list is a cohort of the year's new approvals with an unpaid balance, not the stock of everything outstanding; the stock cannot be built from these returns, because the aggregate grants-payable balance is not allocated to recipients. In tax

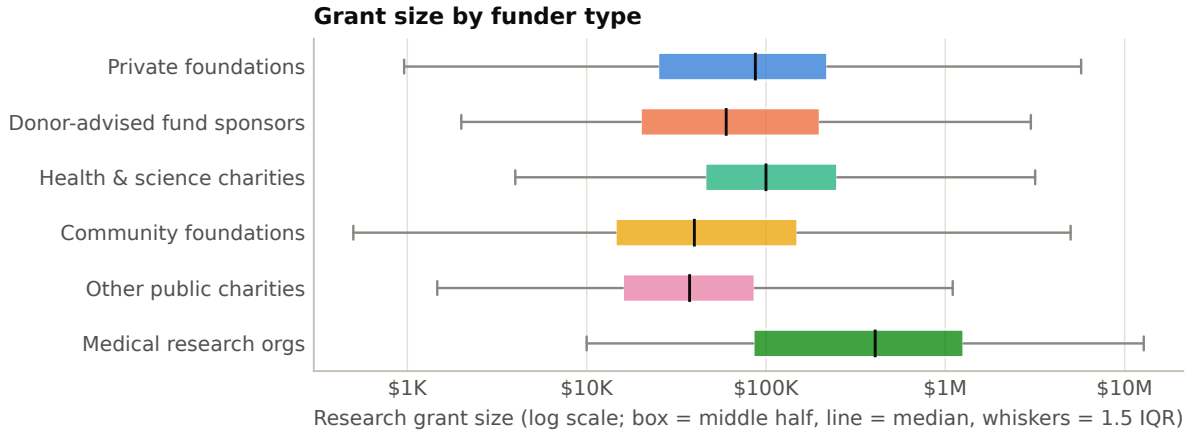


Figure 15: Distribution of explicit research grant sizes by funder type, 2020–2024.

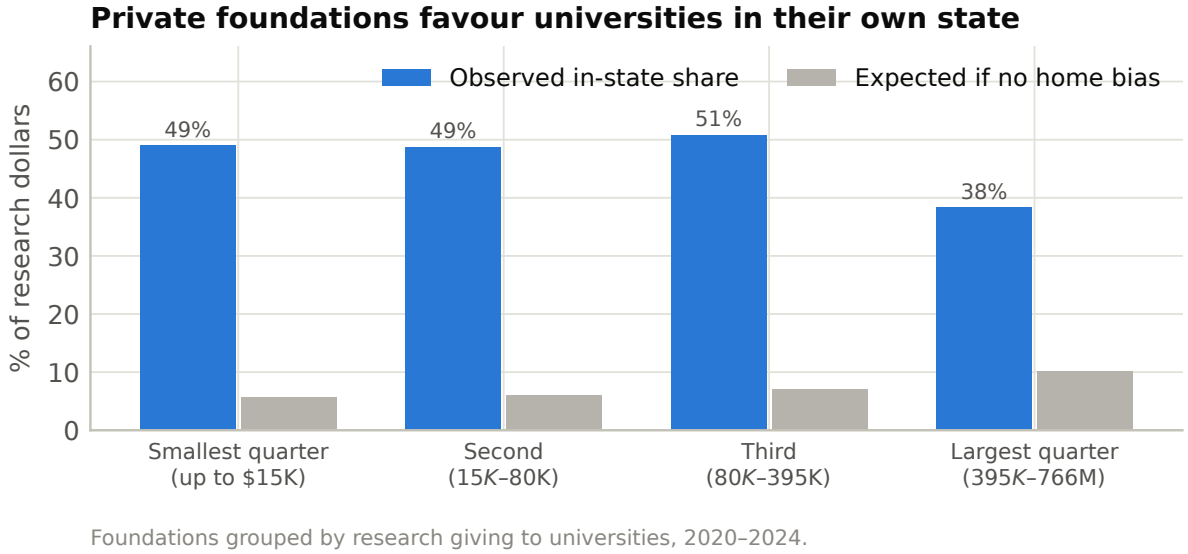


Figure 16: In-state share of private foundations' research grants to universities, by foundation size, against the no-home-bias expectation. The expectation is the share of all research grants nationally that go to universities in the foundation's own state, averaged over the foundations in the group weighted by their giving; it is well above one fiftieth because research receipts and foundations are both concentrated in a few states. Full data: ascendr.ai/resources/funds, file 03.

year 2024 private foundations reported $3.6B of such approvals to US universities, equal to 30% of a year's private-foundation grants to universities, of which $0.57B were explicit research (Figure 17; Table 12). 86% of the funder–institution pairs with an approval listed in year t received a payment in $t+1$, against 66% of pairs that were paid in t without one; a later payment between the pair is not necessarily payment of that approval, which the data cannot link. These are historical award records, subject to the filer's compliance with the instruction; they are not available funds and not a complete pipeline, and they say nothing about what a new applicant could obtain.

4.8 Federal funding trends and institutional exposure

Policy context. Each statement in this paragraph was checked against the cited source. Federal research funding became markedly less predictable in 2025–2026. As of 10 April 2026, HHS had terminated 1,392 NIH awards carrying $539 million in unliquidated obligations, many of which

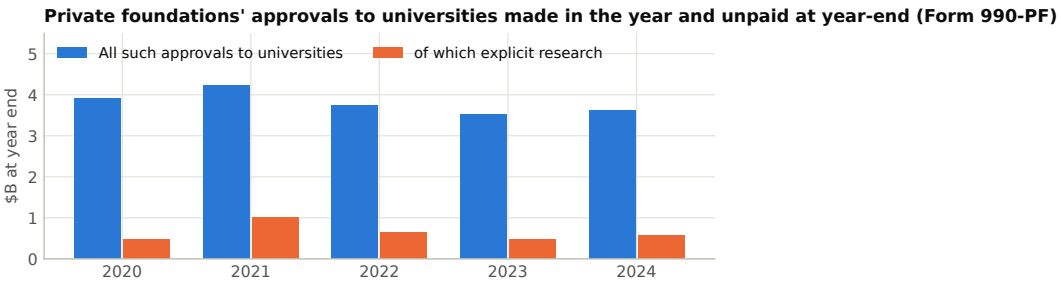


Figure 17: Private foundations' grants to US universities approved during the tax year and unpaid at its end (Form 990-PF, Part XIV line 3b), by tax year. Approvals from earlier years still unpaid are not listed. Full data: ascendr.ai/resources/funds, file 07.

Table 12: Largest private-foundation approvals to universities made in tax year 2024 and unpaid at the filer's year-end, as listed on Form 990-PF (prior-year approvals still unpaid are not listed). Full data: ascendr.ai/resources/funds, file 07.

Institution	Committed ($M)	of which research	Funders	Largest commitment from	$M
Boston College	159	3	22	The Patrick F Cadigan Family Foundation	125.0
The University of Texas at Austin	119	17	39	The Mulva Family Foundation	27.0
Northeastern University	119	1	15	Harold Alfond Foundation	100.0
CUNY LaGuardia Community College	111	0	4	Steven & Alexandra Cohen Foundation	109.1
Stanford University	105	50	53	Charles R Schwab Foundation for Financial Freedom	29.0
University of Chicago	76	65	37	AbbVie Foundation	60.0
University of Nebraska-Lincoln	74	0	9	Peter Kiewit Foundation	50.0
University of Notre Dame	66	0	18	J Christopher and Anne N Reyes Foundation	20.8
New York University	64	11	48	Leon Levy Foundation	33.1
University of Michigan-Ann Arbor	60	4	32	The Susan Thompson Buffett Foundation	34.6
University of Colorado Denver/Anschutz Medical Campus	55	6	13	Gates Family Foundation	40.0
Massachusetts Institute of Technology	54	11	34	Biswas Family Foundation	12.0
Arizona State University (Tempe)	50	18	31	The Robert D and Patricia E Kern Family Foundation	15.4
University of Southern California	50	13	38	Argyros Family Foundation	10.5
University of Virginia-Main Campus	49	1	18	John L Nau III Foundation	41.2

Grants approved in tax year 2024 and unpaid at the filer's year-end, as listed on Form 990-PF Part XIV line 3b; approvals from earlier years still unpaid are not listed, so this is a cohort of new approvals, not the stock of outstanding commitments. Reported apart from paid grants and never added to them.

were later reinstated; from November 2025, NIH institutes were told to move away from paylines and to weigh peer-review scores against NIH's priorities, strategic plans, and budgets (Sekar 2026). NIH's 2025 policy capping indirect-cost rates at 15% was permanently enjoined and vacated by a district court, a decision upheld on appeal in January 2026 (Sekar 2026; U.S. Court of Appeals for the First Circuit 2026); Congress has barred similar caps at NSF and DOE for FY2026 through an appropriations rider and, conditionally, at DOD through the FY2026 authorization act (Gallo and Harris 2026). The FY2027 budget request, a proposal rather than an appropriation, sought $41.2 billion for NIH, 13% below the FY2026 enacted level, and $3.96 billion for NSF, down from $8.75 billion, and proposed eliminating NSF's Social, Behavioral, and Economic Sciences (SBE) directorate (as summarised by FABBS and the Computing Research Association; Federation of Associations in Behavioral & Brain Sciences 2026c; Mosley 2026). NSF cancelled SBE review

panels in April 2026, according to internal communications reported by FABBS (Federation of Associations in Behavioral & Brain Sciences 2026b), and its August 2026 funding opportunities for foundational research covered every directorate except SBE, STEM Education, and Technology, Innovation and Partnerships (U.S. National Science Foundation 2026a; Federation of Associations in Behavioral & Brain Sciences 2026a). This matters for research offices because the social sciences are where nonprofit sources fund the largest share of R&D (Section 4.4). Congress has so far enacted continuing appropriations at FY2026 rates through 11 December 2026, and the same law bars, through that date, any final rule from the May 2026 proposal to revise the Uniform Guidance (U.S. Congress 2026). None of these changes is visible in the 990 data yet, which run through tax year 2024.

Figure 18 indexes federal and private research funding to 2020:

- **HERD.** Federal R&D spending rose 40% to FY2024.
- **NIH.** Awards to universities rose from $24.3B in FY2020 to $26.7B in FY2024 and held at $26.8B in FY2025. Comparing fiscal years at the same date (award notices through 26 September), FY2026 dollars were $26.3B against $26.2B in FY2024 (+0.3%), while the number of awards fell from 51,134 to 44,822 (12%), so the same money is spread over fewer, larger awards. FY2026 is provisional: the RePORTER snapshot of 26 September 2026 may still lack recently issued awards. The Congressional Research Service notes that NIH's FY2025 shift to funding more multiyear awards fully up front likely contributed to the fall in the number of awards (Sekar 2026). Agency-wide, competing research project grant (RPG) awards fell from 10,265 in FY2024 to 8,161 in FY2025 (−20.5%) while applications rose from 55,418 to 62,592 (+12.9%), so the RPG success rate fell from 19% to 13% (National Institutes of Health 2026a): roughly one application in eight was funded.
- **NSF.** Obligations to universities ranged between $6.6B and $7.1B a year from FY2021 to FY2025, but new awards to universities in the award database fell from 10,571 in FY2024 to 8,427 in FY2025 (20%; all recipients in the same database, 11,687 to 9,249, 21%), in line with the agency's reported fall from 10,591 to 8,377 competitive awards, while competitive proposals rose from 40,454 to 43,532, so the funding rate fell from 26% to 19% (U.S. National Science Foundation 2025). Obligations held up in FY2025 because they include continuing increments on older awards. NSF's award files do not date obligations within a year, so FY2026 is compared at an equal cutoff using USAspending transactions: obligations to universities through 31 August were $4.6B in FY2026 against $6.0B in FY2025 (24% lower; the earlier cutoff allows for reporting lags). FY2026 remains provisional.
- **Private research grants.** Under the headline definition these grew 31% through 2024 against 40% for federal R&D spending (24%–31% under the tested machine readings of the texts with the same capital exclusion, Table 6; 15%–53% across accounting and purpose definitions, Table 4, so the ordering is definition-dependent), and faster than NIH and NSF awards.

The institutional picture is heterogeneous. Among the 66 universities with at least $100M of NIH awards in FY2024, the median change to FY2026, both measured through 26 September, is +2.2%, but 8 lost more than 10% (Table 13). Harvard's decline is the largest in absolute terms.

Figure 19 places the 146 R1 universities by federal dependence (HERD federal share of R&D; median 51%) and private research intensity (990 research grants per $100 of R&D; median $1.3). The two are positively, not negatively, related (Spearman $\rho = 0.24$, 95% CI 0.07–0.41, p=0.003): R1s that rely more on federal money tend to receive more private research money per dollar of R&D, not less. As a result the quadrants are uneven: 45 institutions have above-median values on both measures and 45 below-median values on both, against 28 in each of the other two. The median

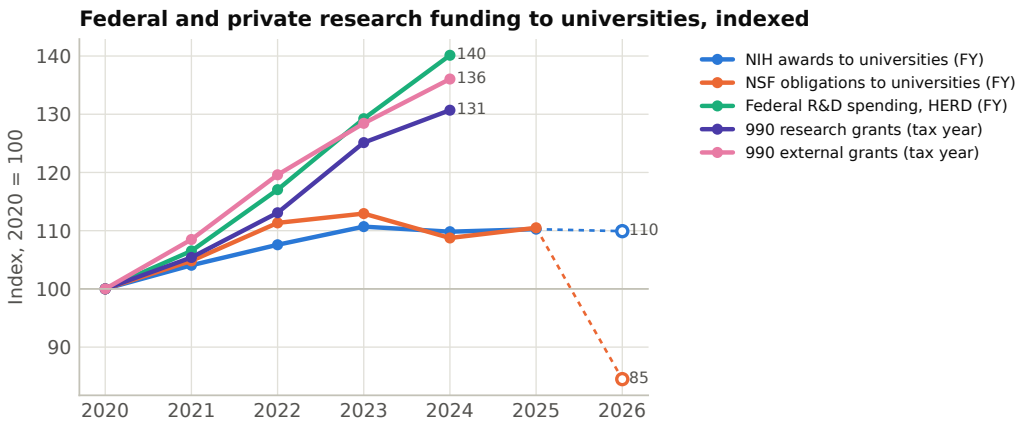


Figure 18: Federal and private research funding to universities, indexed to 2020 = 100. NIH by institution: Full data: ascendr.ai/resources/funds, file 06.

Table 13: Largest NIH declines, FY2024 to FY2026 (each year through 26 September; FY2026 provisional), and private research grants at the same institutions. Full data: ascendr.ai/resources/funds, file 06.

Institution	NIH FY24	FY25	FY26*	Change 24→26	990 research $M/yr	990 research / NIH change
The University of Texas Medical Branch at Galveston	126	88	93	-26%	2.3	7%
Harvard University	396	318	313	-21%	134.1	162%
University of California-Irvine	254	233	216	-15%	13.0	34%
The University of Texas at Austin	129	121	110	-14%	26.1	142%
University of Kentucky	149	142	129	-13%	5.0	26%
University of California-Berkeley	157	146	137	-13%	51.4	262%
The University of Texas Health Science Center at San Antonio	138	137	121	-12%	6.5	38%
University of California-San Diego	555	564	495	-11%	35.9	60%
University of Cincinnati-Main Campus	100	88	90	-10%	4.0	41%
University of Washington-Seattle Campus	557	511	503	-10%	85.8	157%
Columbia University in the City of New York	680	638	620	-9%	59.9	100%
University of California-Los Angeles	495	512	454	-8%	59.4	148%
University of Iowa	182	171	168	-8%	15.8	108%
Brown University	138	132	127	-8%	12.6	115%
Baylor College of Medicine	316	304	294	-7%	31.4	144%

NIH awards to the institution ($M), extramural, NIH institutes only, with award notice dates on or before 26 September of each fiscal year (FY2026 is provisional: the RePORTER snapshot of 26 September 2026 may still lack recent awards). 990 research / NIH change: annual 990 research grants (all fields) as a share of the FY2024→FY2026 NIH decline, a scale comparison only: the numerator is historical grants across all fields, not available funds. Institutions with at least $100M of NIH awards in FY2024 (equal-cutoff amount).

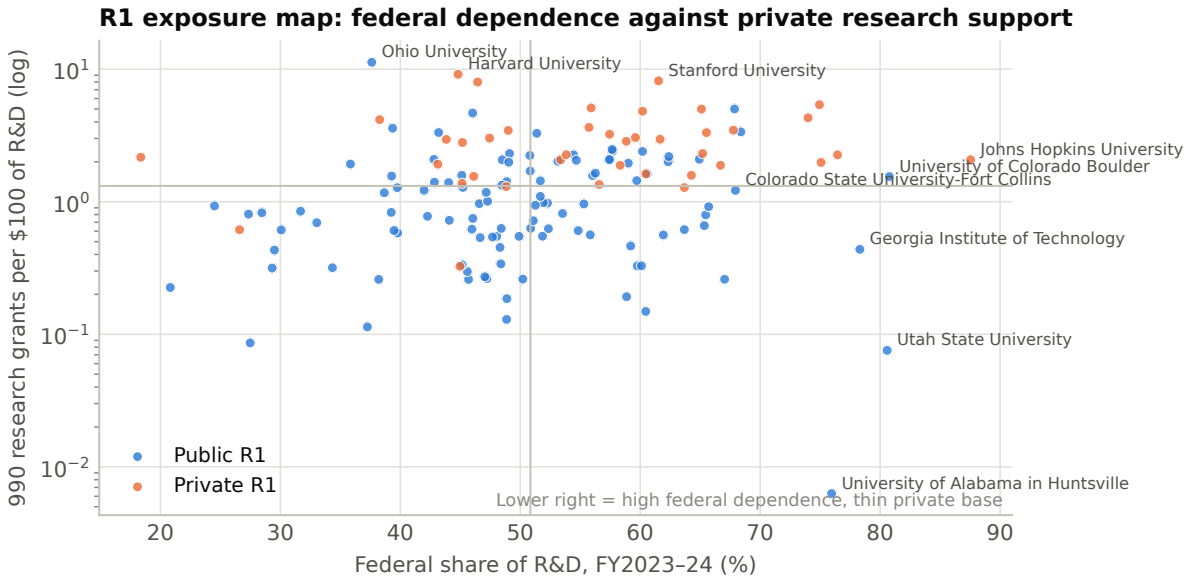


Figure 19: R1 exposure map: federal share of R&D against private research grants per $100 of R&D. Full data: ascendr.ai/resources/funds, file 05.

Table 14: R1 universities with high federal dependence and low private research support. Full data: ascendr.ai/resources/funds, file 05.

R1 institution	Ctrl.	R&D ($M/yr)	Federal share	990 research per $100 R&D	Research funders
Utah State University	Pub.	426	81%	0.08	19
Georgia Institute of Technology-Main Campus	Pub.	1,467	78%	0.44	67
University of Alabama in Huntsville	Pub.	159	76%	0.01	1
Colorado State University-Fort Collins	Pub.	482	68%	1.22	91
University of New Hampshire-Main Campus	Pub.	227	67%	0.26	13
Oregon State University	Pub.	355	66%	0.92	64
Colorado School of Mines	Pub.	107	65%	0.80	11
Pennsylvania State University-Main Campus	Pub.	1,255	65%	0.66	112
Northeastern University	Priv.	318	64%	1.28	61
University of New Mexico-Main Campus	Pub.	335	64%	0.62	53
Montana State University	Pub.	244	62%	0.56	27
University of Maryland-Baltimore County	Pub.	148	60%	0.15	7
University of Southern Mississippi	Pub.	84	60%	0.33	13
University of Maryland-College Park	Pub.	1,462	60%	0.33	73
The University of Montana	Pub.	139	59%	0.46	30

The 15 institutions with the highest federal share among the 28 in the lower-right quadrant of Figure 19 (federal share above the R1 median and private research intensity below it). HERD FY2023–2024 averages; 990 research grants: annual average, tax years 2020–2024.

split is a descriptive device, not a threshold. The 28 institutions in the lower-right quadrant, with above-median federal dependence and below-median private research support, are selected by that rule alone, above-median federal share and below-median private intensity, as a follow-up screen (Table 14). The rule does not measure exposure to federal volatility, which depends on field mix, agency and programme exposure, award timing, reserves and indirect-cost structure, none of which these data show; whether an institution has anything to gain depends on research fit, restrictions and capacity. Many are public technical and land-grant universities.

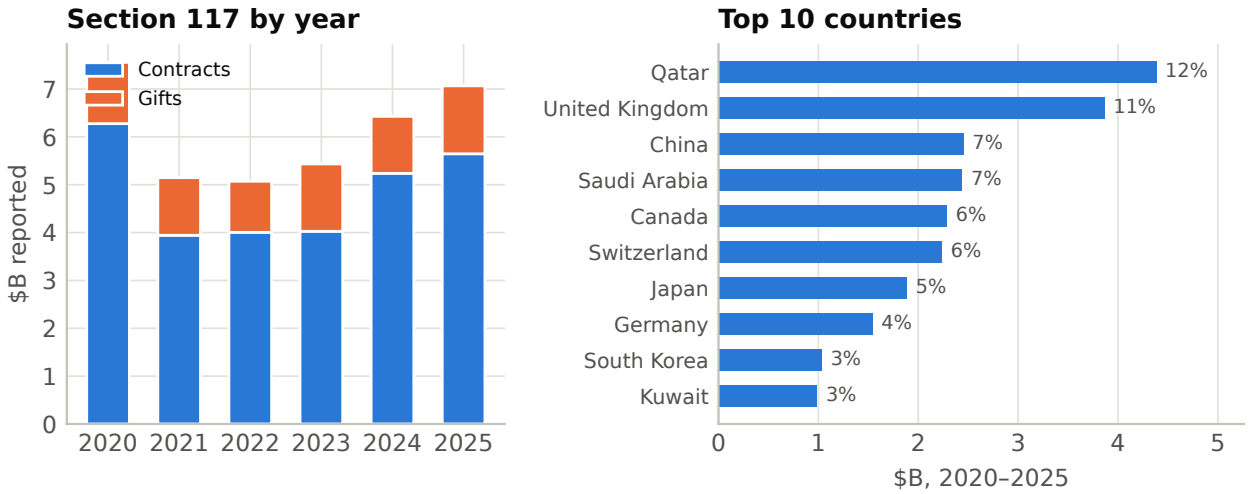


Figure 20: Foreign gifts and contracts reported under Section 117, by year and country of attribution, 2020–2025. Full data: ascendr.ai/resources/funds, file 09. By country: file 10.

4.9 Foreign funding

Section 117 reports $36.7B of foreign gifts and contracts dated 2020–2025, about $6.1B a year on average, equal in size to 30% of the annual average of domestic external philanthropy over 2020–2024 (Figure 20); because most of it is contracts, the comparison indicates scale, not equivalence. Contracts are 79% of the total. Qatar is the largest source (12%); the largest recipients (Table 15) include universities that operate campuses in Qatar. The United Kingdom follows; China accounts for 6.7%. The ten largest recipient institutions account for 37% of the total (Table 15). Section 117 covers gifts and contracts of $250,000 or more a year from a foreign source and does not say whether a transaction funds research, so these totals describe foreign financial ties, not foreign research support.

4.10 Prospecting: broad funders and white space

Table 17 lists the funders that supported the most R1 universities with research grants. 89 funders reached at least 25 R1s. For each R1 we define ten peers, the R1s nearest in FY2024 HERD R&D, and list funders that paid explicit research grants to at least three peers in 2020–2024 but with no grant of any kind to the institution observed in these data. Because missing grant lists and unresolved recipients can hide an existing relationship, a lead means "no grant observed", not "no relationship". For the 2021 R1s this produces 5,913 leads, a median of 22 per institution; Appendix E gives the four strongest for every R1, including the 42 institutions newly designated R1 in 2025. Table 18 shows the result for the University of Utah (rank 42 in HERD R&D), whose peers are: Boston University; University of Colorado Denver/Anschutz Medical Campus; University of Virginia-Main Campus; Rutgers University-New Brunswick; University of Cincinnati-Main Campus; University of Colorado Boulder; North Carolina State University at Raleigh; University of Alabama at Birmingham; University of Iowa; Indiana University-Bloomington.

Does the rule find new funders? Table 16 tests the rule out of sample. Leads were rebuilt from 2020–2022 data alone (peers from FY2022 HERD, and excluding any funder with a grant to the institution observed in 2020–2022, the first years of the data), and each lead was scored on whether it gave the institution any grant in 2023–2024. 12.1% of the 4,005 leads did so, 4.2 times the rate for funders drawn at random from all R1 research funders (2.9%), and the four strongest

Table 15: Largest recipients of foreign gifts and contracts compared with domestic external philanthropy. Full data: ascendr.ai/resources/funds, file 09.

Institution	Sec. 117 ($M)	Top countries	990 external ($M)	Ratio
Cornell University (incl. Weill Medical College of)	2,446	Qatar, Switzerland, United Kingdom	1,906	1.3
Carnegie Mellon University	1,910	Qatar, Canada, Portugal	1,025	1.9
Stanford University	1,860	Switzerland, United Kingdom, China	4,657	0.4
Harvard University	1,828	Switzerland, United Kingdom, China	3,907	0.5
Massachusetts Institute of Technology	1,375	Singapore, India, United Kingdom	1,863	0.7
Yale University	943	Guernsey, Hong Kong, China	1,747	0.5
University of California-San Francisco	940	Switzerland, Japan, United Kingdom	2,976	0.3
Johns Hopkins University	827	United Kingdom, Germany, Monaco	7,136	0.1
Columbia University in the City of New York	807	United Kingdom, China, Bermuda	1,989	0.4
Duke University	804	Ireland, United Kingdom, Germany	1,692	0.5
University of Chicago	790	Australia, Hong Kong, United Kingdom	1,324	0.6
New York University	712	China, United Arab Emirates, United Kingdom	1,406	0.5

Section 117: gifts and contracts dated 2020–2025 in the export through 31 August 2026, reported under the institution's OPEID. 990 external: domestic philanthropic grants paid 2020–2024 to every IPEDS unit under the same OPEID root (named in brackets), scaled to six years for comparability.

Table 16: Backtest of prospect lists: share of candidates that gave the institution a grant in the following two years

Candidate list (built from 2020–2022 data)	Candidates	Gave a grant in 2023–2024
White-space leads (all)	4,005	12.1%
White-space leads (four strongest per institution)	554	20.6%
Most widely active R1 research funders (same number per institution)	4,005	13.2%
Four most widely active R1 research funders per institution	554	22.7%
Random R1 research funders (same number per institution; mean of 5 draws)	4,005	2.9%

For each 2021 R1: peers are the ten R1s nearest in FY2022 HERD R&D; candidates exclude funders with any grant observed to the institution (or linked units) in 2020–2022 and single-state funders from other states. A hit is any external grant paid to the institution in 2023–2024.

leads per institution reached 20.6%. A simpler list, however, does as well: the funders that reach the most R1s, not yet funding the institution, converted at 13.2% (22.7% for the top four). Peer-based leads are therefore best read as a way to find funders already active at institutions of similar total R&D (peers are the ten R1s nearest in HERD R&D, not institutions with a similar field mix), alongside the broad funders in Table 17, not as a better predictor of new grants. The split by tax year is a retrospective reconstruction, not a test on the information available at the time: returns for 2020–2022 were posted over two years or more, the candidate network uses research-labelled grants while the outcome is any later external grant, and the outcome is an observed grant, not application success; the rates are not shown to be statistically equivalent.

Table 17: Funders supporting the most R1 universities with research grants, 2020–2024. Full data: ascendr.ai/resources/funds, file 01.

Funder	Type	R1s funded	Research to R1s ($M)	Median grant ($K)
American Heart Association	Health & science charities	125	500	452
Alfred P Sloan Foundation	Private foundations	102	157	75
The Simons Foundation	Private foundations	98	228	132
American Cancer Society	Health & science charities	88	290	792
Laura and John Arnold Foundation	Private foundations	77	198	122
Cystic Fibrosis Foundation	Health & science charities	75	299	171
Gordon E and Betty I Moore Foundation	Private foundations	71	303	313
Arnold and Mabel Beckman Foundation	Private foundations	69	55	90
The Spencer Foundation	Private foundations	69	17	50
Research Corporation for Science Advancement	Private foundations	66	8	55
The Andrew W Mellon Foundation	Private foundations	58	111	500
American Educational Research Association	Other public charities	58	3	18
The Michael J Fox Foundation for Parkinson's Research	Health & science charities	54	235	366
American Lung Association	Health & science charities	53	37	200
Crohn's & Colitis Foundation	Health & science charities	53	36	116
Muscular Dystrophy Association	Health & science charities	53	32	85
American Federation for Aging Research	Health & science charities	53	27	125
Institute for Humane Studies	Other public charities	53	2	17
Gates Foundation	Private foundations	52	687	614
The Robert Wood Johnson Foundation	Private foundations	52	40	143

Table 18: White space for the University of Utah: funders of at least three of its ten peers with no grant to it observed in these data. Full data: ascendr.ai/resources/funds, file 08.

Funder	Peers funded	Paid to peers ($M)	Main field	Last grant
Foundation for the National Institutes of Health	6 of 10	6.01	Life sciences	2024
BrightFocus Foundation	6 of 10	5.04	Life sciences	2024
American Federation for Aging Research	6 of 10	4.23	–	2024
Arthritis Foundation	5 of 10	4.89	Life sciences	2024
William T Grant Foundation	5 of 10	2.63	Social sciences	2024
Rainwater Charitable Foundation	5 of 10	0.58	Life sciences	2024
American Educational Research Association	5 of 10	0.28	–	2024
Institute for Humane Studies	5 of 10	0.11	–	2024
John Templeton Foundation	4 of 10	2.33	Life sciences	2024
International Rett Syndrome Foundation	4 of 10	1.03	Life sciences	2024
The Heising-Simons Foundation	4 of 10	0.89	Physical sciences	2024
Paralyzed Veterans of America Spinal Cord Research Foundation	4 of 10	0.80	–	2024
Institute for the Advancement of Food and Nutrition Sciences	4 of 10	0.27	–	2024
American Speech-Language-Hearing Foundation	4 of 10	0.20	Life sciences	2024
Saem Research Foundation	4 of 10	0.20	Life sciences	2023

Funders with explicit research grants to at least three of the ten peers (2020–2024) and no grant of any kind to the institution observed in these data. Appendix E gives the leading prospects for every R1.

5 How complete are the 990 data?

Section 3.4 concerns how the captured grants are read; this section estimates what the XML data miss, using three checks. The result is a scenario estimate built from stated totals, recovery rates and realisation rates, not a design-based confidence interval.

Unitemized grant lists. Across tax years 2020–2024, funders reported $131B more in grants paid than they itemized in the XML, including rows that only point to an attachment ("SEE GRANTS PAID ATTACHMENT"), which are not treated as itemized grants. About $54B of it (41%) is irrelevant to external university funding: $45B is drug-company patient assistance and in-kind product donation, and $8.7B is transfers inside university and hospital families. Applying each remaining funder's own share of itemized grants that go to US universities (or its funder type's base rate) gives an expected $8.5B of university grants and $0.81B of research grants missing over five years, 8.2% and 6.2% of our totals (Table 19).

Recovery from filing images. For the funders with the largest expected university gaps, we downloaded the IRS image copies of 359 returns from 109 funders and read 27,255 pages with optical character recognition. A parser then matched each grant line to a university with the same resolver used for the XML, and dropped lines already itemized in the XML. The parser guards against the main OCR failure modes: ZIP codes and street numbers read as amounts, names taken from adjacent lines, and commitments read as payments. On a sample of 60 recovered grants (labelled by the same AI model and drawn before the final two parser refinements, so it does not validate the final parser), precision was 90% (95% at the level of the institution family; 75% among the dollar-weighted part of the sample). Where the same filing also itemized some grants in the XML, the parser's output could be paired one to one with 64% of those 977 university grants (626 rows, matched on funder, tax year, institution and rounded amount; a count of grants, not of dollars), so recovery is incomplete, and its dollar recall was not measured. Recovery added 4,148 grants worth $200M to 645 institutions, of which $2M was explicit research: in the recovered records, most of the money was general and matching gifts, not research. National donor-advised fund sponsors (91,000 pages; almost no research) were not processed. The Wellcome Trust, whose 990-PF lists no grants, publishes its full award data: it awarded $163M to US universities in 2020–2024 (49 awards), out of $1,783M to all US recipients, most of it to Wellcome Leap, whose own onward grants are already in our data.

Table 19: Grants paid but not itemized in the XML, by recovery route, tax years 2020–2024

Group	Funders	Unitemized ($B)	Est. to univ. ($M)	Est. research ($M)
Targeted and read by OCR (any filing)	109	26.4	3,797	331
Wellcome Trust (published grants data)	1	8.1	1,009	125
National DAF sponsors (not OCR'd)	17	7.5	859	9
Not targeted (smaller expected gaps)	29,953	35.2	2,835	349
Excluded: internal flow	3,360	8.7	–	–
Excluded: patient assistance / in-kind	108	44.8	–	–
Total	33,548	130.8	8,499	813

Unitemized = stated grants paid minus itemized grants and grants to individuals, plus placeholder rows ("see attachment"), tax years 2020–2024. Estimates apply each funder's own share of itemized grants going to US universities (or its funder type's base rate).

Table 20: Completeness-adjusted totals

Component (tax years 2020–2024)	External to univ. ($M)	Explicit research ($M)
XML itemized grants (this report's baseline)	103,278	13,021
+ recovered from filing images (OCR; precision- to recall-adjusted)	150–312	1–3
+ Burroughs Wellcome Fund, documented gap (stated grants paid × scenario shares)	114–151	105–135
+ other unitemized grants (calibrated to unscaled estimate)	460–4,465	4–414
Completeness-adjusted total	104,002–108,206	13,132–13,573
Baseline as share of adjusted total	95.4%–99.3%	95.9%–99.2%
Memo: Wellcome Trust awards to US universities (award basis; not added)	163	163

Ranges run from the calibrated estimate (funder-level university and research shares scaled by the realisation rate observed where filings were read) to the unscaled funder-level estimate; unread filings of funders that were partly read stay in the unitemized estimate. Recovered grants run from the dollar-weighted OCR precision to the parser recall. The Burroughs Wellcome range applies 65–86% (university) and 60–77% (research) to its stated grants paid: the upper shares use the 2024 annual report's award-program proportions, the lower shares are analyst-selected allowances for non-US and non-university recipients, and applying them to grants paid assumes the award and payment mixes are comparable. Wellcome Trust awards are commitments at award date, a different measure from grants paid, and are not added.

Adjusted totals. Where filings were actually read, recovered university grants (scaled by the grant-count recall, which assumes dollar recall is the same) came to only 10% of the estimate: unitemized grants go mostly to foreign recipients, individuals, and non-university organisations, so funder-level shares overstate the university gap. The realisation rate (1% for research) gives the low end of the remaining gap and the unscaled funder-level estimate the high end. One gap is documented rather than estimated: the Burroughs Wellcome Fund's grant list is missing from both the XML and the images, and its annual reports show that most of its $176M of grants paid in 2020–2024 went to research awards made to institutions on behalf of individual scientists; applying scenario shares (the upper from the 2024 report's program mix, the lower an analyst-selected allowance for non-US and non-university recipients) gives $105–135M of university research, which is not scaled down. Table 20 combines these components. Under this missing-list scenario, the XML baseline used throughout this report captures an estimated 95.4%–99.3% of the external grants to universities and 95.9%–99.2% of the explicit research grants that filers report; the ranges run from the realisation rate to the unscaled estimate and are scenario ranges, not confidence intervals. They cover grant lists missing from the XML; late filings (Table 5), failed recipient matches and organisations outside the filing universe are separate gaps, treated elsewhere or not estimated. Wellcome Trust awards to US universities ($163M) are commitments at award date, a different measure from grants paid, and are shown only as a memo item.

Errors in both directions. Table 21 sets the undercount beside the errors that inflate the totals. For the national research total the two largest terms have opposite signs: research stated in texts outside the explicit layer (an understatement) and texts in the explicit layer that other readings label not research (an overstatement); a third term, texts whose purpose does not settle the question, belongs to neither side. Each is given as its range across the three model readings and the human reader (Section 3.4). Matching errors mostly move money between campuses of the same institution family, so they matter more for institution rankings than for national totals; the matching rows rest on the preliminary AI-labelled samples and are provisional; no independent human check of recipient resolution has been made.

Major funders. 75 major US funders of university research were checked individually against the filings (Table 22). Of these, 67 filed every year with itemized grant lists, and 4 had gaps. The

Table 21: Error budget for the explicit research total, tax years 2020–2024

Source of error	Effect on total	Basis
Grant lists missing from the XML	+0.8 to +4.2%	Table 20 (calibrated to unscaled)
Research stated outside the explicit layer	+7% to +22% across readings	Research found by the models and by reader 1 in the probable, funder-profile, generic and excluded layers (Table 28)
Explicit-layer dollars read as not research	-1% to -11% across readings	Model and reader labels on the explicit layer (Table 28)
Explicit-layer dollars whose purpose text does not settle the question	5–16% across readings, neither confirmed nor rejected	Model and reader labels on the explicit layer (Table 28)
Mixed-purpose grants (research with scholarships, endowment, or general support)	up to -8.5%	Share of research dollars in such grants (Table 35)
Recipient matched to the wrong institution family, or to a body that is not a university	-3% in the AI-labelled sample; illustrative, not a bound[a]	Family-level match precision (97%), AI-labelled sample
Recipient matched to the wrong campus within a family	-8% of matched dollars in the AI-labelled sample; none nationally[b]	Exact match precision (92%), AI-labelled sample
Ambiguous (tier D) matches left out	+0.7%	Table 35
Gifts from individuals, corporations, and LLCs	not estimated	Outside the 990 grant data by construction

[a]A wrong family moves dollars between universities; only a non-university body is a national false positive. [b]Not a bound for any one campus. Percentages are relative to the explicit research total ($13.0B). Each range is computed separately, so rows are not additive; the point estimates of the readings assign between $11B and $15B to a stated research purpose, a sensitivity spread rather than a bound (Section 3.4). Research capital ($0.80B) is excluded by definition and shown separately.

Michael J. Fox Foundation's 2022 list was recovered from the filing image; it confirmed that the unitemized money went mainly to non-university and foreign recipients. The 2020 lists of the Beckman Foundation and the Michael & Susan Dell Foundation were not recovered (no image available, or not among the recovery targets). The Burroughs Wellcome Fund lists its grants only as "see grants paid attachment", and the attachment is absent from the IRS image copies as well; its grants paid ($176M in 2020–2024, from its stated totals) are therefore estimated with scenario shares anchored on the program mix in its annual reports (Table 20) and included in the completeness range above; grant-level data would require the fund's own records. The Howard Hughes Medical Institute, one of the largest private supporters of biomedical research in the United States, barely appears in these data by construction: it is a medical research organization that employs its investigators at their host institutions (up to 2,627 employees), so of its $5.4B of expenses in 2020–2024 only $293M were grants, and $182M were grants to US universities, mostly for education programs. Support delivered through employment or operating programs, rather than grants, is outside any grant-based measure. The Chan Zuckerberg Initiative LLC and Arnold Ventures are limited liability companies that file no 990 by design, and Schmidt Sciences has not yet posted its first return. The review also informed two funder-type rules: The Duke Endowment is an independent foundation, not a Duke University affiliate, and the American Lung Association's research awards are philanthropy, not federal pass-through.

Table 22: Presence and completeness of major research funders in the 990 data

Status	Funders	Funders (first eight)
LLC name found in 990 data	1	Open Philanthropy (LLC)
LLC: files no 990	2	Chan Zuckerberg Initiative LLC; Arnold Ventures LLC
complete	67	Howard Hughes Medical Institute; Gates Foundation; Simons Foundation; Simons Foundation International; Gordon and Betty Moore Foundation; Alfred P. Sloan Foundation; W. M. Keck Foundation; David and Lucile Packard Foundation; ...
grant list gap	4	Burroughs Wellcome Fund; Arnold and Mabel Beckman Foundation; Michael & Susan Dell Foundation; Michael J. Fox Foundation
not yet in IRS data	1	Schmidt Sciences

Reference list of major US funders of university research; filings for tax years 2020–2024.

6 How these figures compare with national benchmarks

Research offices will want to know whether these numbers agree with the statistics they already use. Table 23 sets every figure that overlaps a published national statistic against its primary source. Where a figure could be recomputed from our own data, we recomputed it rather than copying it. All HERD figures agree exactly; the NSF and NIH comparisons agree in direction, though they use different populations or years. The private-giving comparisons agree in magnitude once differences in coverage and definitions are taken into account.

7 Implications for research offices

1. **Scale of the opportunity.** Identifiable private research grants are about $2.6B a year nationally; depending on who reads the purpose texts, the point estimates assign $2.3–3.0B a year to a stated research purpose and $1.7–4.3B a year to text that does not say, a spread that describes the reading and bounds neither research expenditure nor the true total; all of it is an order of magnitude below federal R&D. The observed grants are much smaller in aggregate than federal R&D; these data do not measure replacement capacity by field or institution.

2. **Where research money is concentrated.** 80% of health and science charities' reported university-grant amounts carry a research label under the headline classification. The 125 funders that supported more than 25 universities provide 56% of research dollars (Figure 14; Table 17 lists those reaching the most R1 universities), and Appendix B lists the leading funders in each field.

3. **The role of geography.** Smaller foundations keep 49% of their research dollars in their own state, which is a reason to investigate locally relevant funders; historical local concentration does not measure the chance that any of them will give. Appendix C lists, for every state, the in-state foundations and charities that already fund research at its universities.

4. **Recipient families, not legal names.** At public universities, 26% of research dollars, and 52% of all external grant dollars, arrive through foundations and affiliates under other names. Benchmarking and prospect research based on legal names alone understate private support substantially.

5. **Commitments as a leading indicator.** Tables of grants approved for future payment list approvals made in the tax year and unpaid at its end (Form 990-PF line 3b; prior-year approvals still unpaid are not listed), so they are historical award records, not a stock of outstanding commitments and not available funds; 86% of committed funder–institution pairs

Table 23: This report's figures against published national statistics

Measure	This report	Published source	Assessment
University R&D, FY2024	$117.7B total; $64.7B federal (from HERD microdata)	$117.7B; $64.7B federal (National Center for Science and Engineering Statistics 2026)	Agrees
Nonprofit-funded R&D, FY2024	$6.7B; +$16M on FY2023	$6.7B; "increased by $16 million" (National Center for Science and Engineering Statistics 2026)	Agrees
Concentration of R&D	Top 30 institutions 42%; 37 institutions with $1B+	42%; 37 institutions (National Center for Science and Engineering Statistics 2026)	Agrees; private research grants are more concentrated (top 30: 59%)
Federal share by detailed field	80% atmospheric, 77% aerospace, 73% electrical, 71% physics, 70% industrial engineering	Same fields and shares (National Center for Science and Engineering Statistics 2026)	Agrees
Nonprofit share by detailed field	20% political science, 19% economics, 16% law	Same fields and shares (National Center for Science and Engineering Statistics 2026)	Agrees
NSF awards, FY2024 to FY2025	New awards in the award database: to universities 10,571 to 8,427 (−20%); all recipients 11,687 to 9,249 (−21%)	Competitive awards, all recipients, 10,591 to 8,377 (−21%) (U.S. National Science Foundation 2025)	Same direction and size; the award database counts every award, the agency figure only competitive actions
NIH awards	Award records to universities −12% FY2024 to FY2026 at equal cutoffs (FY2026 provisional); dollars flat	Competing RPG awards −20.5% FY2024 to FY2025 (National Institutes of Health 2026a)	Same direction; different units and years
Donor-advised funds	33% of private-foundation plus DAF grants to universities (27% of all external grants)	30% of foundation plus DAF gifts received by 670 reporting institutions, FY2025 ($5.59B of $18.65B) (Cooke Smith et al. 2026)	Similar
Scale of private giving	$23.7B of external grants, tax year 2024	$78.8B national estimate of all voluntary support, FY2025 (Cooke Smith et al. 2026)	Consistent: CASE adds individuals, corporations, and gifts to affiliates
Missing grant lists	1,809 filings with $500K+ paid and no itemized list, 2020–2024	Candid: "over 2,000 cases" with no or partial XML grant data, FY2019–2024 (Aspen Institute Program on Philanthropy and Social Innovation and Nonprofit Open Data Collective 2025)	Similar; periods and definitions differ
Recent-year completeness	2024 filings at 99% (990-PF) and 105% (990) of 2023 levels	"comprehensive data for recent years takes 2–3 years to materialize" (Candid 2026)	Consistent; 2024 totals may still rise with late filings
IRS archives	Every posting year from 2021 reconciles to the index within two returns (Table 1)	IRS index files (Internal Revenue Service 2026b)	Agrees

received some payment the following year (against 66% for pairs paid without a commitment), though the data cannot link a payment to a particular commitment.

6. **Peer-based leads.** Appendix E lists funders active at each R1's peers, and Appendix D the funders that already reach many institutions outside R1. These lists are historical prospects for manual verification: they identify candidates, not program fit or an open application route; many funders support named investigators or give by invitation. In a backtest, peer-based leads converted to grants no more often than a list of the most widely active R1 funders (12.1% against 13.2%), so both lists are worth screening.

7. **Application openness.** 71% of private foundations that fund university research state on their returns that they give only to preselected organizations (59% of their research dollars).

The "Presel." column in the tables identifies them. Because a return describes past practice, current guidelines on the funder's website take precedence.

8. **Donor-advised funds.** DAF sponsors pay more than a quarter of external dollars but act as conduits; the effective decision-maker is the donor advising the fund, whom the 990 does not identify.
9. **Federal exposure.** Pairing HERD, NIH, and NSF data by field and institution with the 990 data screens institutions and fields for follow-up on federal changes and which private funders are active in the same fields.

8 Limitations

- **What this study does not establish.** It is a data-resource study. The research labels, the field labels and the recipient resolution are not validated here: the human readings measure disagreement between readers of the same texts, part of which is imperfect compliance with the codebook, and the recipient checks rest on AI-labelled samples. Every label is given per unique purpose text and applied to all grant rows carrying it (one generic text covers 45,082 rows and $13.9B), and whether the context shown beside a text changed any label was not tested. A separately versioned validation round under a revised codebook, with independent readers, blinded overlap sized for the quantities to be claimed, compliance checks, and an independent audit of recipient links, is planned as a follow-on study; until then the descriptive results are properties of the observed series under stated rules.
- **Undercount.** The 990 data miss gifts from individuals, corporate-sponsored research, support that operating organizations deliver through employment rather than grants (the Howard Hughes Medical Institute's investigators), LLC philanthropy (for example, the Chan Zuckerberg Initiative LLC; LLC giving that passes through a donor-advised fund appears under the sponsor's name), and grant lists filed only as attachments (itemized grants cover 87% of stated grants; Section 5 estimates the university share of this gap). Donor-advised funds hide the original donor.
- **Public universities do not file**, so receipts are seen only from the funder side. Their foundations' own receipts, which include individual gifts, are not grant-level.
- **The purpose field has no standard, so research support is a range.** The IRS asks for each grant's purpose but prescribes no vocabulary or research category, and filers write anything from a project title to "general support". How much is labelled research therefore depends on who reads the texts: on one domain (grants paid in 2020–2024, research-capital rows excluded), $13.0B by the classifier, $12.5–15.0B by the three language models, $11.3B (10.3–12.3) by a human reader. Between $9B and $21B is labelled unclear by one reading or another and counted as neither research nor not research; "not research" means no explicit research purpose under the codebook and includes general support, which can fund research. The research figures should be read as reported grant amounts whose text names research, between about $11B and $15B depending on the reading, not as a total of research funding and not as a bound on it.
- **No reading is a reference, and readers disagree.** The three models give the same label to 91–93% of dollars in pairwise comparisons, a human reader and a model to 78–80%, two human readers to 56% of sampled texts (81% on research against everything else), and the same reader to 75% of texts on a second reading. Agreement is high where the text plainly

names something other than research and low where it is short, generic or mixed, which is where the disputed dollars sit. The confidence intervals cover sampling error around one reader's labels only, and the label of any single grant should not be relied on. Reader 1 is the author, who also designed the classifier and the pipeline and made the repeat reading; blinding to the model labels does not blind the author to the study's aims. Some of reader 1's labels depart from the codebook as written (Appendix F), so the two-reader agreement mixes ambiguity in the filings with instruction compliance.

- **Grants are labelled whole.** A grant that names research together with other uses is counted in full or not at all, and grants that fund people or the institution (fellowships, chairs, faculty support, scholarships, endowments) are not counted as research unless the text says so, although part of that money reaches research. These are the texts on which readers differed most, and the split of research dollars by purpose type is not validated.
- **Growth as a statement about funding assumes labelling error drifted little.** The validation sample is too small to measure classification error by year. The observed series need no such assumption, but reading their growth as growth in underlying research funding does: if the ratio of actual to labelled research-purpose dollars rose between 2020 and 2024 by a factor of 1.072 (7.2%; equivalently, if the ratio of labelled to actual research-purpose dollars fell to 0.933 of its 2020 value, a drop of 6.7%), the headline series would equal federal growth. Smaller drifts leave the ordering intact, and the sample cannot test for a change of that size. The tested machine readings of every text give 24%–31% under the same capital exclusion (Table 6); they share that exclusion and any error common to readings of the same texts.
- **Language-model readings are measurements, not ground truth.** The three models were used to read every text and to stratify the human sample. They agree with each other far more than with a human reader, so their errors are likely to be shared, and their agreement cannot stand in for a human reading.
- **Field labels are not validated.** Field is unknown for 20% of research dollars, and the assigned fields were not checked by any reader.
- **Matching error.** In the preliminary validation sample, which was labelled by an AI model and has not been repeated by a human reader, 89% of matches were exact (92% weighting match tiers by their dollars; 97% at the level of the institution family, also weighted). These are record-weighted and dollar-share-weighted precisions of an AI-labelled sample, not bounds on the dollar error of any total or campus; until an independent audit of a probability sample of matched and unmatched records is done, campus rankings and institution-level comparisons are provisional screening aids. Institution-level figures are more exposed than national totals to both matching and labelling error, because one large grant can move an institution's total; the texts of the 100 largest research grants were all read by both machines and reader 1. Such figures, especially for multi-campus systems, are provisional rule-derived totals and should be checked against the institution's own gift records before being quoted. Grants addressed to a system name ("University of Colorado Foundation", "Regents of the University of California") are assigned to a campus only when the recipient name or filed city identifies it; the rest ($232M of research) are reported at system level, for example the University of California Office of the President's grants for the Thirty Meter Telescope. City evidence can still misplace a grant when a system office shares a city with a campus. Institutions follow IPEDS units: Vanderbilt University Medical Center, independent of Vanderbilt University since 2016 but not an IPEDS unit, is credited to Vanderbilt as an affiliate, whereas Weill Cornell Medicine is

its own IPEDS unit and is reported separately from Cornell University.

- **Industry-sponsored charities.** Some funders counted as external philanthropy are industry or commodity organizations (for example, state soybean and pork producer associations funding agricultural research); their grants may also be regarded as industry funding.
- **Timing.** 990 amounts are recorded in the funder's tax year, as payments (990-PF) or under the filer's accounting method (Schedule I), and do not line up with universities' fiscal years or award dates. Tax year 2025 is incomplete, and FY2026 federal data are partial.
- **Classification of funders** into internal and external is an operational taxonomy, not a test of ownership or of the original source of money: a government-revenue threshold cannot identify the origin of every grant an intermediary makes, a foundation that gives almost only to one university is not thereby controlled by it, and a university-controlled foundation can escape the rules. The reduction from $226B to $103B is a result of these rules; it does not prove that the excluded dollars are not private support or that every retained dollar traces to a private donor. The rules misclassify some organizations at the margin. Table 35 shows that the headline research total moves little when tier-D matches are added (+0.7%) or DAF sponsors removed (-0.5%), but would rise by +15% if government-funded intermediaries were counted as philanthropy.

9 Conclusion

The IRS e-file series, once its gaps are repaired and its recipients resolved, gives research offices a free and auditable map of reported private research grants that captures, in a scenario restricted to grant lists missing from the XML, an estimated 95.4%–99.3% of the university grants 990 filers report (late filings, unresolved recipients and support outside the filing universe are separate gaps); individual and LLC giving are outside its scope. Reported private research grants grew 31% from 2020 to 2024 against 40% for federal R&D (an ordering that holds under the headline definition and the tested machine readings of the texts and depends on the accounting and purpose definition), are concentrated in a few hundred funders and a few dozen institutions, are dominated by life sciences, and are local and persistent. Paired with HERD, NIH, NSF, and Section 117 data, the same database shows where institutions are exposed to federal volatility and which private funders are already active at their peers. The code, crosswalks, and outputs are designed to be refreshed as each monthly IRS release arrives.

Acknowledgements

I thank the second reader, who prefers to remain anonymous, for independently reading the designated subset of grant-purpose texts. Their contribution provided a second human reading against which agreement and disagreement could be examined.

Disclosures

Funding. This study received no external grant funding. Ascendr, PBC supported the work. The author was responsible for the study design, analysis, interpretation, manuscript preparation and decision to submit.

Competing interests. George Koomullil is the founder and chief executive officer of Ascendr, PBC, which develops research expertise and grant intelligence products for universities and funders. Ascendr hosts the public resource described in this report and may benefit commercially from services related to the work. The author designed the research pipeline and classifier and served as reader 1 in the purpose-reading study. The report names no product.

Ethics and reader arrangements. The financial analysis used publicly available institutional filings and administrative records. The purpose-reading exercise involved the author, designated reader 1, and a second human reader, designated reader 2. Reader 1 assessed 651 sampled texts and subsequently re-read a designated subset of 150 texts; reader 2 assessed 149 texts. Both readers were blinded to the machine labels during their readings.

Use of AI. AI tools were used in software development, data processing, statistical implementation, purpose classification, and manuscript preparation. Three language models (Claude Sonnet 5.5, Gemini 2.5 Flash, GPT-5-mini; 4 October 2026) read every grant purpose text under the released codebook; their readings are reported as measurements beside the classifier's and the human readers', no reading is treated as ground truth, and the prompts and raw answers are released. The author evaluated the AI-assisted outputs, made the final methodological and editorial decisions, and accepts responsibility for the report and accompanying resource; that is a statement of accountability, not a claim that every generated line was checked by hand.

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A Glossary and definitions

Tax year
The funder's tax year, as filed. A grant paid in tax year 2024 may fall in a university's FY2024 or FY2025. Tax year 2025 is incomplete and is shown only as provisional.

Paid and committed grants
Paid grants are those the filer reported as paid during the year: on Form 990-PF, grants paid in cash or property; on Schedule I, amounts recorded under the filer's accounting method, which can book a multi-year grant when it is made. *Committed* grants ("approved for future payment", Form 990-PF Part XIV line 3b) are grants approved during the tax year and unpaid at its end; approvals from earlier years that are still unpaid are not listed, so the figure is a cohort of new approvals, not the stock of outstanding commitments. They are reported separately and never added to paid grants.

External philanthropy
Grants retained under the external-funder rules (Section 3.2), which treat as independent of the recipient: private foundations, donor-advised fund sponsors, community foundations, health and science charities, medical research organizations, and other public charities.

Internal and pass-through flows
Transfers from a university's own foundation or affiliates, from hospitals and health systems, from athletic conferences and the NCAA, and from government-funded intermediaries (organizations with 25% or more of revenue from government grants, or 50% or more for disease charities). They are counted in the flows figure and excluded from the retained series, which reduces potential pass-through overlap; actual duplicate transactions and original sources are not identified.

Explicit research grant
A grant whose stated purpose names research, a study, trial, evaluation, laboratory, investigator, scientific instrument, or a research activity ("to study", "to assess"). This is the report's headline measure, one reproducible classification of the stated purpose; other readings of the same texts give different totals (Section 3.4). Grants for research buildings, construction, and facilities are research capital, reported separately and not counted as research. Grants that name research together with scholarships, endowment, or general support are counted but flagged as mixed-purpose ($1.11B).

Research-related grant
An explicit research grant, or a grant for fellowships, science, endowed chairs, doctoral training, centres and institutes, or a named science topic. This broader measure includes many grants whose text does not name research (the readings in Appendix F, Table 33, label a minority of the added dollars research) and, like the explicit measure, misses research described in generic terms.

HERD field
One of the ten broad fields of the NCSES Higher Education Research and Development Survey. The keyword crosswalk (released as `field_crosswalk.csv`) assigns nine of them from the purpose text, else from the funder's dominant field; 'other sciences, n.e.c.' (about 1% of R&D) has no rule. The label is a keyword estimate and has not been validated.

Institution and recipient family
An institution is an IPEDS unit (UnitID). Its recipient family adds its foundations, research foundations, medical schools, and practice plans, so a grant to "KU Endowment" counts for the University of Kansas.

Match tiers
How a recipient was identified: A, by the recipient's EIN; B, by an exact name or curated alias in the same state; C, by a high-confidence approximate or structural name match. Totals use A–C; ambiguous (D) and unresolved names are excluded.

Funder type codes
PF private foundation; DAF donor-advised fund sponsor; CF community foundation; HSC health and science charity (NTEE G, H, U); MRO medical research organization; PC other public charity.

Presel.
Application openness of private foundations: "Yes" means the foundation's latest return states that it gives only to preselected organizations and does not accept unsolicited requests; "–" means the return does not say so (it may still fund by invitation); "n/a" means the funder files Form 990, which does not ask. Check the funder's current guidelines before applying.

Carnegie groups
2021 Basic Classification: R1 (very high research activity; 146 institutions), R2 (high research activity), Med. (special-focus medical schools and research institutions), and Spec. (all other groups). The analyses in the main text use the 2021 R1 list; Appendix E also covers the 42 institutions newly designated R1 in 2025 (187 R1s in 2025; the appendix lists 188 institutions, including one that was R1 only in 2021).

HERD windows
Institution tables use the FY2020–2024 annual average of HERD R&D, the R1 exposure analysis uses FY2023–2024, and field shares use FY2024.

CAGR
Compound annual growth rate between the first and last year shown.

Gini coefficient and Lorenz curve
Measures of concentration: a Gini of 0 means every funder (or institution) has the same amount, 1 means one has everything. The Lorenz curve plots the cumulative share of dollars against the cumulative share of funders or institutions.

Spearman ρ
Rank correlation from -1 to 1; values near 0 mean no consistent relation.

EIN, UnitID, NTEE
The IRS employer identification number; the IPEDS institution identifier; the National Taxonomy of Exempt Entities code the IRS assigns to each charity's field.

Federal dependence
Federal share of an institution's R&D in HERD (FY2023–2024 average).

Private research intensity
Explicit research grants per $100 of HERD R&D.

Peers and white space
An R1's peers are the ten R1s closest to it in FY2024 HERD R&D. A white-space lead is a funder that paid explicit research grants to at least three peers in 2020–2024 and with no grant of any kind to the institution observed in these data.

Section 117
Foreign gifts and contracts of $250,000 or more a year that institutions report to the Department of Education; not limited to research.

B Leading research funders by field

The largest funders of explicit research grants to US universities in each HERD broad field, tax years 2020–2024. Research, grants, institutions, and median are for grants classified to that field; a funder can appear in several fields. Type codes and the Presel. flag are defined in Appendix A. Full data: ascendr.ai/resources/funds, file 02.

Funder	Type	St.	Research ($M)	Grants	Inst.	Median ($K)	Presel.
Life sciences							
Gates Foundation	PF	WA	763.5	510	80	577	–
American Heart Association	HSC	TX	698.2	692	224	400	n/a
American Cancer Society	HSC	GA	444.5	414	138	792	n/a
Cystic Fibrosis Foundation	HSC	MD	358.7	1,101	111	168	n/a
The Michael J Fox Foundation for Parkinson's Research	HSC	NY	282.0	230	75	358	n/a
Sergey Brin Family Foundation	PF	CA	179.8	31	8	2,616	Yes
The Breast Cancer Research Foundation	HSC	NY	178.5	242	55	450	n/a
Blood Cancer United	HSC	DC	132.5	207	55	316	n/a
The V Foundation for Cancer Research	HSC	NC	122.0	162	53	600	n/a
The Simons Foundation	PF	NY	119.9	742	93	140	Yes
Chan Zuckerberg Biohub	MRO	CA	118.5	23	9	4,100	n/a
DR Miriam & Sheldon G Adelson Medical Research Foundation	PF	MA	108.3	85	20	699	Yes
Social sciences							
Laura and John Arnold Foundation	PF	TX	83.4	197	60	158	Yes
Kinder Foundation	PF	TX	37.6	5	1	11,817	Yes
Alfred P Sloan Foundation	PF	NY	22.8	133	37	100	–
Wellspring Philanthropic Fund	PF	NY	17.7	44	14	312	Yes
The Ford Foundation	PF	NY	16.2	66	22	177	–
The Robert Wood Johnson Foundation	PF	NJ	14.1	41	28	188	–
Foundation to Promote Open Society	PF	NY	13.4	37	16	200	Yes
Conrad N Hilton Foundation	PF	CA	12.0	31	9	290	–
Wilson Sheehan Foundation	PF	OH	12.0	3	1	4,000	–
WK Kellogg Foundation	PF	MI	10.1	31	15	249	–
Engineering							
Gordon E and Betty I Moore Foundation	PF	CA	83.5	221	33	313	Yes
Alfred P Sloan Foundation	PF	NY	6.2	38	19	106	–
Gong Family Foundation	PF	NY	5.0	3	1	1,000	Yes
The Eric and Wendy Schmidt Fund for Strategic Innovation	PF	CA	4.7	3	2	1,905	Yes
Speedwell Foundation	PF	GA	4.4	1	1	4,400	Yes
Laura and John Arnold Foundation	PF	TX	3.8	5	3	796	Yes
Beckman Laser Institute	PF	CA	3.3	3	1	410	Yes
Marin Community Foundation	CF	CA	2.6	10	7	148	n/a
Freedom Together Foundation	PF	NY	2.2	2	1	1,100	Yes
The Heising-Simons Foundation	PF	CA	2.2	9	6	248	Yes
Physical sciences							
The Robert A. Welch Foundation	PF	TX	184.9	300	60	52	–
Gordon E and Betty I Moore Foundation	PF	CA	122.9	160	32	400	Yes
The Simons Foundation	PF	NY	45.9	312	29	132	Yes
Alfred P Sloan Foundation	PF	NY	26.3	267	71	75	–
The Heising-Simons Foundation	PF	CA	16.2	67	25	186	Yes
WM Keck Foundation	PF	CA	9.2	8	8	1,150	–
John Templeton Foundation	PF	PA	4.5	8	3	646	–
John Stauffer Charitable Trust	PF	CA	3.0	13	8	200	–
The Brinson Foundation	PF	IL	2.3	32	11	65	–
M J Murdock Charitable Trust	PF	WA	2.2	24	14	15	–

continued

Funder	Type	St.	Research ($M)	Grants	Inst.	Median ($K)	Presel.
Geosciences							
Chan Zuckerberg Initiative Foundation	PF	CA	37.9	4	2	8,350	Yes
Grantham Foundation for the Protection of the Environment	PF	MA	12.2	24	19	425	Yes
Gordon E and Betty I Moore Foundation	PF	CA	12.0	20	9	549	Yes
The Schmidt Family Foundation	PF	CA	9.8	46	23	150	–
The Heising-Simons Foundation	PF	CA	9.5	39	21	230	Yes
The G Unger Vetlesen Foundation	PF	NY	8.8	32	10	250	Yes
The Eric and Wendy Schmidt Fund for Strategic Innovation	PF	CA	8.3	2	1	4,150	Yes
Alfred P Sloan Foundation	PF	NY	7.8	53	38	75	–
WM Keck Foundation	PF	CA	4.2	3	2	1,600	–
The William Penn Foundation	PF	PA	3.8	28	9	133	–
Computer sciences							
Chan Zuckerberg Initiative Foundation	PF	CA	159.6	3	1	30,000	Yes
Alfred P Sloan Foundation	PF	NY	39.7	232	59	75	–
Good Ventures Foundation	PF	CA	25.4	32	12	365	Yes
The Simons Foundation	PF	NY	24.1	182	33	132	Yes
The Eric and Wendy Schmidt Fund for Strategic Innovation	PF	CA	22.8	17	10	1,100	Yes
Gordon E and Betty I Moore Foundation	PF	CA	18.9	41	16	375	Yes
John S and James L Knight Foundation	PF	FL	17.2	59	29	108	–
The Andrew W Mellon Foundation	PF	NY	15.0	20	11	700	–
Lilly Endowment	PF	IN	11.2	13	9	328	–
WM Keck Foundation	PF	CA	10.0	3	1	2,500	–
Psychology							
Pritzker Family Foundation	PF	IL	13.2	66	13	89	Yes
The Simons Foundation	PF	NY	5.1	26	5	160	Yes
Valhalla Foundation	PF	CA	3.3	6	2	525	Yes
WK Kellogg Foundation	PF	MI	2.0	8	5	191	–
Alfred P Sloan Foundation	PF	NY	1.7	7	2	296	–
Conrad N Hilton Foundation	PF	CA	1.6	6	5	250	–
Buffett Early Childhood Fund	PF	NE	1.6	3	3	650	Yes
The Robert Wood Johnson Foundation	PF	NJ	1.4	4	4	191	–
Richard King Mellon Foundation	PF	PA	1.0	2	1	500	–
Fulk Family Foundation	PF	NE	1.0	2	1	500	Yes
Mathematics							
The Simons Foundation	PF	NY	29.5	192	22	132	Yes
The Heising-Simons Foundation	PF	CA	8.6	9	5	400	Yes
Alfred P Sloan Foundation	PF	NY	7.6	107	48	75	–
Sergey Brin Family Foundation	PF	CA	1.4	3	1	500	Yes
Walton Family Foundation	PF	AR	0.6	4	2	166	Yes
William T Grant Foundation	PF	NY	0.6	3	1	180	–
Gordon E and Betty I Moore Foundation	PF	CA	0.6	2	1	282	Yes
The Spencer Foundation	PF	IL	0.5	4	4	50	–
John Templeton Foundation	PF	PA	0.4	2	1	221	–
Sibbri Foundation	PF	MA	0.4	1	1	418	Yes
Non-S&E fields (humanities, law, business, education)							
The Andrew W Mellon Foundation	PF	NY	55.7	63	45	500	–
John Templeton Foundation	PF	PA	13.3	41	15	211	–
The Chicago Community Trust	CF	IL	10.4	11	10	371	n/a
Laura and John Arnold Foundation	PF	TX	10.1	50	24	96	Yes
Walton Family Foundation	PF	AR	9.4	13	7	321	Yes
Ewing Marion Kauffman Foundation	PF	MO	9.1	111	44	80	–
Good Ventures Foundation	PF	CA	8.5	16	10	547	Yes
The William & Flora Hewlett Foundation	PF	CA	8.1	26	15	250	–
Alfred P Sloan Foundation	PF	NY	7.5	36	24	119	–

continued

Funder	Type	St.	Research ($M)	Grants	Inst.	Median ($K)	Presel.
Open Society Institute	PF	NY	6.8	6	2	1,262	–

C Research funders by state

For each state: explicit research grants to its universities ($M, 2020–2024), the number of funders, the share of those dollars from funders based in the same state, and the four largest in-state funders with their research grants to that state's universities ($M). National funders based in the state (for example, the Gates Foundation in Washington) appear here as well. Full data: ascendr.ai/resources/funds, file 03.

St.	Research ($M)	Funders	In-state	Largest in-state funders (research $M to the state's universities)
AK	4	15	18%	Aleutian Pribilof Island Community Development Association (0.4); Alaska Wildlife Alliance (0.1); Alaska Run for Women (0.1); Alaska Cardiovascular Research Foundation (0.1)
AL	126	224	14%	The Eyesight Foundation of Alabama (7.4); Breast Cancer Research Foundation of Ala (5.3); The Jane K Lowe Charitable Foundation (2.7); Alabama Home Health Care (0.9)
AR	49	66	76%	Walton Family Charitable Support Foundation (29.8); Walton Family Foundation (4.1); Town Branch Foundation (1.2); Five Oaks Ag Research and Education Center (0.8)
AS	0	1	0%	–
AZ	110	214	8%	Flinn Foundation (3.0); Garcia Family Foundation (1.6); LSST (0.5); Research Corporation for Science Advancement (0.5)
CA	2,735	1,560	51%	Gordon E and Betty I Moore Foundation (190.8); Sergey Brin Family Foundation (182.1); WM Keck Foundation (117.2); Chan Zuckerberg Biohub (105.5)
CO	226	379	14%	Cancer League of Colorado (4.1); Boettcher Foundation (3.8); Ray Foundation (3.2); The Williams Family Foundation (3.0)
CT	294	407	2%	Steven & Alexandra Cohen Foundation (2.1); The Connecticut Project (0.6); Alliance for Cancer Gene Therapy (0.5); Elm Institute (0.5)
DC	149	218	4%	The Institute for Technology in Health Care (2.1); The Paul W and E Carol Schafer Foundation for Centriolar (0.7); The Brookings Institution (0.6); Blood Cancer United (0.5)
DE	11	47	28%	Delaware Community Foundation (2.6); The Howard W Swank Alma K Swank and Richard Kemper Swank (0.2); Rodel Charitable Foundation - De (0.2); International Fine Particle Research Ins (0.0)
FL	225	516	30%	Lennar Foundation (18.3); The Harry T Mangurian JR Foundation (5.1); Lillian S Wells Foundation (5.0); John S and James L Knight Foundation (3.1)
GA	418	416	18%	Hemophilia of Georgia (15.9); American Cancer Society (13.5); The Arthur M Blank Family Foundation (9.0); The Ma-Ran Foundation (7.4)
GU	1	2	0%	–
HI	47	60	15%	HMSA Foundation (3.8); The Learning Coalition (0.4); First Hawaiian Bank Foundation (0.4); Malama Kahalawai (0.4)
IA	105	187	16%	Roy J Carver Charitable Trust (10.0); Iowa Pork Producers Association (1.7); Stine Family Foundation (1.0); Nellie Ball Trust (0.6)
ID	7	28	37%	Laura Moore Cunningham Foundation (1.8); The Peregrine Fund (0.4); Blue Cross of Idaho Foundation for Health (0.3); Lewis-Clark Valley Healthcare Foundation (0.1)
IL	517	599	22%	Illinois Nutrient Research & Education Council (16.2); The Chicago Community Trust (12.5); AbbVie Foundation (10.0); IDP Foundation (6.3)
IN	204	319	22%	Lilly Endowment (10.2); CICP Foundation (7.9); Regenstrief Foundation (7.5); Indiana Soybean Alliance (6.3)
KS	49	152	18%	Coleman Family Foundation (3.0); The Cloud L Cray and Sara J Cray Family Foundation (1.4); Kelly Family Foundation (0.9); Flossie West Memorial Trust (0.7)

continued

St.	Research ($M)	Funders	In-state	Largest in-state funders (research $M to the state's universities)
KY	42	109	16%	Jewish Heritage Fund for Excellence (5.4); Kentucky Thoroughbred Owners & Breeders (0.6); The Whas Crusade for Children (0.3); William Bartram and Eloise Williams Sturgill Family Foundation (0.1)
LA	62	134	32%	American Sugar Cane League of the USA (6.3); Edward G Schlieder Educational Foundation (3.3); Marshall Legacy Foundation (3.0); Baton Rouge Area Foundation (2.5)
MA	1,187	650	7%	Fidelity Non-Profit Management Foundation (21.8); Richard & Susan Smith Family Foundation (12.1); Cummings Foundation Grants (8.2); DR Miriam & Sheldon G Adelson Medical Research Foundation (4.0)
MD	481	585	8%	Cystic Fibrosis Foundation (17.7); The Kahlert Foundation (3.7); BrightFocus Foundation (2.6); Annie E Casey Foundation (2.2)
ME	15	50	4%	Davis Educational Foundation (0.1); Maine Community Foundation (0.1); Roxanne Quimby Foundation (0.1); Friends of Acadia (0.1)
MI	305	494	18%	Charles Stewart Mott Foundation (16.6); The D Dan and Betty Kahn Foundation (8.0); Community Foundation for Southeast Michigan (4.4); Chadtough Defeat Dipg Foundation (3.8)
MN	160	296	40%	Minnesota Masonic Charities (26.2); Children's Cancer Research Fund (15.5); Randy Shaver Cancer Research and Community Fund (3.8); The McKnight Foundation (3.1)
MO	254	366	19%	ST Louis Community Foundation (10.7); Missouri Soybean Merchandising Council (9.8); Eric P & Evelyn E Newman Charitable Foundation DTD 8/1/2013 (4.4); Paula and Rodger Riney Foundation (4.1)
MS	13	69	29%	Delta Research Foundation (2.6); MS Breast Foundation (0.7); Anna Grace Love Charitable Foundation (0.2); Campbell Bulldog Foundation (0.1)
MT	10	60	17%	The Bair Ranch Foundation (1.0); Jane S Heman Foundation (0.2); Headwaters Health Foundation of Western Montana (0.2); Montana Community Foundation (0.2)
NC	403	594	11%	The Duke Endowment (13.3); The V Foundation for Cancer Research (8.7); The Ruth K Broad Biomedical Research Foundation (2.9); North Carolina Soybean Producers Association (2.8)
ND	11	35	50%	Northern Pulse Growers Association (1.6); Northern Canola Growers Association (1.4); Centurion Foundation (1.0); Offutt Family Foundation (0.5)
NE	35	95	37%	Hirschfeld Family Foundation (5.0); Buffett Early Childhood Fund (3.8); Kicks for a Cure (1.4); Team Jack Foundation (0.8)
NH	36	74	6%	Endowment For Health (1.0); New Hampshire Charitable Foundation (0.8); Hank and Lynn Hopeman Foundation (0.4); The Alex Manfull Fund (0.1)
NJ	189	241	25%	New Jersey Health Foundation (42.2); Foundation for Health Advancement (1.2); Jewels of Charity (0.6); The Prudential Foundation (0.5)
NM	16	69	11%	Salopek Foundation (0.8); Anchorum Health Foundation (0.4); Brindle Foundation (0.1); Thornburg Foundation (0.1)
NV	11	40	15%	Bean Space Foundation (0.9); Estelle J Kelsey Foundation (0.3); Thomas Nelson Abdella MD Foundation (0.2); Serving Our Communities Foundation (0.2)
NY	1,267	1,128	46%	The Starr Foundation (56.4); The Zachary & Elizabeth M Fisher Center for Alzheimer's (51.4); The Simons Foundation (38.7); Freedom Together Foundation (32.2)
OH	237	362	25%	Osteopathic Heritage Foundation (35.1); The Cleveland Foundation (4.9); The Austin E Knowlton Foundation (3.0); Columbus Jewish Foundation (2.2)
OK	24	90	18%	The Harold Hamm Foundation (1.4); The Charles & Peggy Stephenson Family Foundation (1.0); Records Johnston Family Foundation (0.6); White Stanley Foundation (0.3)
OR	154	254	6%	The Roundhouse Foundation (2.1); The Haugland Family Foundation (1.5); Ochin (1.3); The Donald E & Delia B Baxter Foundation (0.7)
PA	622	744	15%	Hillman Family Foundations (18.6); Richard King Mellon Foundation (10.6); The Charles E Kaufman Foundation (9.5); John Templeton Foundation (5.9)
PR	4	12	0%	–
RI	70	117	3%	The Hassenfeld Family Foundation (1.3); The Rhode Island Community Foundation (0.2); Brown Medicine (0.2); Devereux Ocean Foundation (0.1)
SC	52	151	2%	The Fullerton Foundation (0.4); The Mcconnell Foundation (0.2); South Carolina Student Loan (0.1); Monka Foundation (0.1)

continued

St.	Research ($M)	Funders	In-state	Largest in-state funders (research $M to the state's universities)
SD	5	23	14%	South Dakota Beef Industry Council (0.4); SFS Foundation (0.2); Sam F Weller Family Foundation (0.0)
TN	139	303	6%	The Assisi Foundation of Memphis (1.6); Christmas Village (1.0); The Powell Foundation (0.9); The Community Foundation of Middle Tennessee (0.7)
TX	1,060	1,052	57%	The Robert A. Welch Foundation (184.9); American Heart Association (68.0); Kinder Foundation (43.7); Albert and Margaret Alkek Foundation (29.1)
UT	88	224	13%	Olson-Huntsman Vision Foundation (6.3); Wadman Foundation (0.9); Emma Eccles Jones Endowment for Excellence at the David Eccles (0.8); Utah Academy of Sciences Arts & Letters (0.6)
VA	156	303	10%	Manning Family Foundation (3.7); American Diabetes Association (2.1); Commonwealth Foundation for Cancer Research (1.2); The Community Foundation (0.8)
VI	0	3	0%	–
VT	16	65	28%	J Walter Juckett Cancer Research Foundation (3.8); Overlake Fund (0.3); Lintilhac Foundation (0.2); Miles for Migraine (0.1)
WA	461	339	65%	Gates Foundation (259.0); Washington Research Foundation (11.9); Allen Family Philanthropies (8.1); M J Murdock Charitable Trust (5.6)
WI	136	314	28%	Midwest Athletes Against Childhood Cancer (15.7); Greater Milwaukee Foundation (4.5); The Robert D and Patricia E Kern Family Foundation (3.0); The Lynde and Harry Bradley Foundation (2.7)
WV	13	71	15%	Maier Foundation (1.1); Encova Foundation of West Virginia (0.4); Pallottine Foundation of Huntington West Virginia (0.2); The Erickson Foundation (0.1)
WY	8	24	10%	Windy Ridge Foundation (0.7); Meg and Bert Raynes Wildlife Fund (0.0); Community Foundation of Jackson Hole (0.0); Truecos Foundation (0.0)

D Funders active beyond R1 universities

Institutions outside R1 received 23% of explicit research dollars from 2,719 funders. The table lists the 40 funders that paid research grants to the most non-R1 institutions (R2, medical and special-focus institutions, master's and baccalaureate colleges), with the number of R2s among them and the number of states reached. Full data: ascendr.ai/resources/funds, file 01.

Funder	Type	St.	Non-R1	R2	States	Research ($M)	Median ($K)	Presel.
American Heart Association	HSC	TX	99	48	31	177.4	303	n/a
American Cancer Society	HSC	GA	50	15	27	146.4	784	n/a
The Robert A. Welch Foundation	PF	TX	49	9	1	59.9	45	–
The Andrew W Mellon Foundation	PF	NY	46	10	28	35.1	500	–
Arnold and Mabel Beckman Foundation	PF	CA	46	12	23	9.7	26	–
Alfred P Sloan Foundation	PF	NY	45	22	24	16.2	95	–
Research Corporation for Science Advancement	PF	AZ	39	13	18	2.8	50	–
Institute for Humane Studies	PC	VA	37	6	24	1.0	22	n/a
Cystic Fibrosis Foundation	HSC	MD	36	13	23	41.5	140	n/a
Accesslex Institute	PC	PA	36	9	18	3.1	25	n/a
National Collegiate Inventors & Innovators Alliance	PC	MA	35	14	17	1.0	30	n/a
The Spencer Foundation	PF	IL	34	14	20	2.8	50	–
The Simons Foundation	PF	NY	33	14	16	37.9	140	Yes
The Henry Luce Foundation	PF	NY	30	8	13	6.1	100	–
M J Murdock Charitable Trust	PF	WA	29	5	5	7.6	18	–
American Educational Research Association	PC	DC	29	19	15	0.9	12	n/a
Gates Foundation	PF	WA	28	8	19	68.6	431	–

continued

Funder	Type	St.	Non-R1	R2	States	Research ($M)	Median ($K)	Presel.
Laura and John Arnold Foundation	PF	TX	28	15	18	21.6	152	Yes
Muscular Dystrophy Association	HSC	IL	28	11	19	7.1	35	n/a
The Children's Oncology Group Foundation	HSC	PA	25	9	15	3.2	18	n/a
The Susan G Komen Breast Cancer Foundation	HSC	TX	23	6	12	16.5	170	n/a
The Robert Wood Johnson Foundation	PF	NJ	23	11	11	11.0	118	–
The Fund for Theological Education	PC	GA	23	3	18	0.9	50	n/a
American Association of Colleges of Pharmacy	PC	VA	23	7	16	0.2	8	n/a
The Michael J Fox Foundation for Parkinson's Research	HSC	NY	21	8	12	45.5	348	n/a
Amyotrophic Lateral Sclerosis Assn	HSC	VA	21	10	17	3.4	25	n/a
American Lung Association	HSC	IL	20	5	12	13.5	200	n/a
BrightFocus Foundation	HSC	MD	19	4	14	12.2	200	n/a
National Multiple Sclerosis Society	HSC	NY	18	7	11	20.5	218	n/a
American Federation for Aging Research	HSC	NY	18	2	9	9.8	142	n/a
American Foundation for Suicide Prevention	HSC	NY	18	6	11	4.4	49	n/a
American Speech-Language-Hearing Foundation	HSC	MD	18	8	14	0.5	10	n/a
The William & Flora Hewlett Foundation	PF	CA	17	8	12	15.7	245	–
Alliance for Clinical Trials in Oncology Foundation	HSC	IL	17	6	13	2.6	25	n/a
Parkinson's Foundation	HSC	NY	17	5	11	2.6	60	n/a
National Alliance for Research on Schizophrenia and	PC	NY	17	3	10	1.6	35	n/a
Gordon E and Betty I Moore Foundation	PF	CA	16	6	14	37.4	385	Yes
Breakthrough T1D	HSC	NY	16	4	10	28.5	373	n/a
Alex's Lemonade Stand Foundation	HSC	PA	16	3	9	15.5	159	n/a
Crohn's & Colitis Foundation	HSC	NY	16	2	10	11.0	101	n/a

E Prospect leads for every R1 university

For each of the 188 universities that are R1 in the 2021 or 2025 Carnegie classification: the number of white-space leads and the four strongest, with the number of the institution's ten peers each funded. Institutions marked † are the 42 designated R1 in the 2025 research designations (American Council on Education and Carnegie Foundation for the Advancement of Teaching 2025); their peers are the ten 2025 R1s closest in FY2024 HERD R&D, or, for the three institutions that HERD reports jointly with another campus (University of Maryland, Baltimore; University of Nebraska Medical Center; Weill Medical College of Cornell University), the ten closest in FY2024 NIH awards. The University of Alabama in Huntsville (‡) was R1 in 2021 but R2 in 2025. The 2021 R1s keep the 2021 peer groups used in Section 4. A funder is not listed as a lead if it made any grant, paid or committed, to the institution in 2020–2025, including grants to units often reported jointly with it (Cornell and Weill Cornell; the University of Maryland's College Park and Baltimore campuses; the University of Nebraska's Lincoln campus and Medical Center), or if it gives almost only in another state. Leads indicate funders active at comparable institutions, not a program fit; many give to named investigators or by invitation. "No grant" means none observed in these data: grants listed only in attachments, or addressed to recipient names that could not be resolved, can hide an existing relationship. In a backtest (Table 16) the strongest leads converted at a rate similar to the most widely active R1 funders. Full data: ascendr.ai/resources/funds, file 08.

R1 institution	Leads	Top leads (number of its ten peers each funded)
American University†	3	American Heart Association (7); John Templeton Foundation (3); American Cancer Society (3)
Arizona State University (Tempe)	72	Cystic Fibrosis Foundation (9); Doris Duke Charitable Foundation (9); American Lung Association (7); Crohn's & Colitis Foundation (7)
Auburn University	24	Laura and John Arnold Foundation (7); Gordon E and Betty I Moore Foundation (6); The Robert Wood Johnson Foundation (5); Carnegie Corporation of New York (5)
Baylor College of Medicine†	66	Alfred P Sloan Foundation (8); Laura and John Arnold Foundation (6); The Spencer Foundation (6); American Educational Research Association (6)
Baylor University	1	Alfred P Sloan Foundation (3)
Binghamton University	8	American Heart Association (6); The Spencer Foundation (5); Alfred P Sloan Foundation (4); The Robert Wood Johnson Foundation (3)
Boston College	4	American Foundation for Suicide Prevention (4); National Council of State Boards of Nursing (3); National Strength and Conditioning Association Foundation (3); National Communication Association (3)
Boston University	62	Breakthrough T1D (8); Crohn's & Colitis Foundation (8); The V Foundation for Cancer Research (7); The Children's Oncology Group Foundation (7)
Brandeis University	4	American Heart Association (7); Arnold and Mabel Beckman Foundation (3); Ewing Marion Kauffman Foundation (3); American Foundation for Suicide Prevention (3)
Brigham Young University†	5	American Heart Association (5); Alfred P Sloan Foundation (4); Laura and John Arnold Foundation (3); The Robert Wood Johnson Foundation (3)
Brown University	17	Charles Pankow Foundation (5); The Henry Luce Foundation (5); Metavivor Research and Support (4); AISC Holdings (4)
CUNY Graduate School and University Center	1	National Council of State Boards of Nursing (3)
California Institute of Technology	20	Laura and John Arnold Foundation (7); Institute for Humane Studies (4); American Speech-Language-Hearing Foundation (4); Academy of Nutrition and Dietetics Foundation (4)
Carnegie Mellon University	30	American Cancer Society (7); National Multiple Sclerosis Society (6); BrightFocus Foundation (6); American Lung Association (6)
Case Western Reserve University	45	The Spencer Foundation (8); Foundation to Promote Open Society (6); Gordon E and Betty I Moore Foundation (5); Laura and John Arnold Foundation (5)
Clemson University	30	Gordon E and Betty I Moore Foundation (8); Alfred P Sloan Foundation (8); Laura and John Arnold Foundation (7); American Educational Research Association (6)
Colorado School of Mines	5	American Heart Association (7); Ewing Marion Kauffman Foundation (3); National Council of State Boards of Nursing (3); Russell Sage Foundation (3)
Colorado State University-Fort Collins	13	The Michael J Fox Foundation for Parkinson's Research (4); Arnold and Mabel Beckman Foundation (4); American Federation for Aging Research (4); American Speech-Language-Hearing Foundation (4)
Columbia University in the City of New York	63	Crohn's & Colitis Foundation (7); Additional Ventures Foundation (5); The Swartz Foundation (5); Democracy Fund (5)
Cornell University	109	The Spencer Foundation (7); Life Sciences Research Foundation (7); ASN Foundation for Kidney Research (7); Lung Cancer Research Foundation (7)
Dartmouth College	17	American Genetic Association (7); William T Grant Foundation (4); American Kennel Club Canine Health Foundation (4); Institute for Humane Studies (4)
Drexel University	1	American Foundation for Suicide Prevention (3)
Duke University	80	American Foundation for Suicide Prevention (9); Good Ventures Foundation (8); The Mark Foundation for Cancer Research (US) Ltd (6); Metavivor Research and Support (6)
East Carolina University†	7	John Templeton Foundation (3); Alfred P Sloan Foundation (3); John D and Catherine T Macarthur Foundation (3); Revive & Restore (3)
Emory University	80	The Heising-Simons Foundation (8); American Federation for Aging Research (8); American Educational Research Association (8); Rainwater Charitable Foundation (7)
Florida Atlantic University†	8	American Heart Association (5); Arnold and Mabel Beckman Foundation (5); Laura and John Arnold Foundation (4); American Educational Research Association (4)
Florida International University	21	American Cancer Society (6); Laura and John Arnold Foundation (6); Cystic Fibrosis Foundation (6); Arnold and Mabel Beckman Foundation (5)
Florida State University	21	American Cancer Society (7); Cystic Fibrosis Foundation (6); The Michael J Fox Foundation for Parkinson's Research (4); Arnold and Mabel Beckman Foundation (4)
George Mason University	21	American Heart Association (10); Cystic Fibrosis Foundation (7); Research Corporation for Science Advancement (6); The Susan G Komen Breast Cancer Foundation (5)
George Washington University	16	Charles Pankow Foundation (5); Conrad N Hilton Foundation (4); Metavivor Research and Support (4); AISC Holdings (4)
Georgetown University	14	Charles Pankow Foundation (5); AISC Holdings (4); American Kennel Club Canine Health Foundation (4); American Educational Research Association (4)
Georgia Institute of Technology-Main Campus	185	American Cancer Society (9); Cancer Research Institute (8); Blood Cancer United (8); The Robert Wood Johnson Foundation (8)
Georgia State University	11	Cystic Fibrosis Foundation (4); Knights Templar Eye Foundation (4); Institute for Humane Studies (4); American Lung Association (3)
Harvard University	101	Whitehall Foundation (9); Muscular Dystrophy Association (7); The V Foundation for Cancer Research (6); Edward P Evans Foundation (6)
Howard University†	5	American Heart Association (5); Arnold and Mabel Beckman Foundation (4); Laura and John Arnold Foundation (3); Research Corporation for Science Advancement (3)
Indiana University-Bloomington	54	Arnold and Mabel Beckman Foundation (9); American Educational Research Association (8); The Breast Cancer Research Foundation (7); The Ford Foundation (6)
Indiana University-Indianapolis†	12	American Heart Association (5); Alfred P Sloan Foundation (5); Laura and John Arnold Foundation (4); American Educational Research Association (4)
Iowa State University	16	American Cancer Society (7); Cystic Fibrosis Foundation (6); Institute for Humane Studies (5); American Genetic Association (5)
Johns Hopkins University	96	American Diabetes Association Research Foundation (8); Arthritis Foundation (7); Lung Cancer Research Foundation (7); Rapoport Family Foundation (7)
Kansas State University	14	Alfred P Sloan Foundation (6); American Cancer Society (5); National Strength and Conditioning Association Foundation (5); Laura and John Arnold Foundation (4)
Kent State University at Kent	6	American Heart Association (6); John Templeton Foundation (4); Alfred P Sloan Foundation (4); The Simons Foundation (4)
Lehigh University†	2	Laura and John Arnold Foundation (3); Lumina Foundation for Education (3)

continued

R1 institution	Leads	Top leads (number of its ten peers each funded)
Louisiana State University and Agricultural & Mechanical	22	Alfred P Sloan Foundation (7); Research Corporation for Science Advancement (7); Gordon E and Betty I Moore Foundation (6); Laura and John Arnold Foundation (6)
Loyola University Chicago†	1	Orthopaedic Trauma Association (3)
Massachusetts Institute of Technology	60	American Lung Association (7); American Educational Research Association (7); BrightFocus Foundation (6); The Children's Oncology Group Foundation (6)
Medical University of South Carolina†	18	Gordon E and Betty I Moore Foundation (6); Alfred P Sloan Foundation (6); Laura and John Arnold Foundation (5); The Spencer Foundation (5)
Michigan State University	60	Gordon E and Betty I Moore Foundation (8); The Heising-Simons Foundation (6); The V Foundation for Cancer Research (6); American Federation for Aging Research (6)
Michigan Technological University†	7	American Cancer Society (4); The Robert Wood Johnson Foundation (3); Arnold and Mabel Beckman Foundation (3); Laura and John Arnold Foundation (3)
Mississippi State University	25	Gordon E and Betty I Moore Foundation (8); Alfred P Sloan Foundation (7); Laura and John Arnold Foundation (6); American Educational Research Association (6)
Missouri University of Science and Technology†	5	American Heart Association (9); American Educational Research Association (4); John Templeton Foundation (3); American Cancer Society (3)
Montana State University	17	American Cancer Society (6); Laura and John Arnold Foundation (5); Cystic Fibrosis Foundation (5); The Spencer Foundation (5)
New Jersey Institute of Technology	8	The Spencer Foundation (5); Laura and John Arnold Foundation (3); American Cancer Society (3); Wings for Life USA - Spinal Cord Research Foundation (3)
New Mexico State University-Main Campus†	1	American Heart Association (4)
New York University	82	Breakthrough T1D (8); The Susan G Komen Breast Cancer Foundation (7); Alliance for Clinical Trials in Oncology Foundation (7); American Association for the Study of Liver Diseases Foundation (7)
North Carolina State University at Raleigh	87	American Cancer Society (9); Cystic Fibrosis Foundation (7); Muscular Dystrophy Association (7); Gordon E and Betty I Moore Foundation (6)
North Dakota State University-Main Campus	8	Alfred P Sloan Foundation (7); American Cancer Society (5); Wings for Life USA - Spinal Cord Research Foundation (3); American Foundation for Suicide Prevention (3)
Northeastern University	7	American Cancer Society (5); American Educational Research Association (5); Conrad N Hilton Foundation (4); The Children's Oncology Group Foundation (4)
Northern Arizona University†	4	The Simons Foundation (5); Arnold and Mabel Beckman Foundation (4); Russell Sage Foundation (3); American Educational Research Association (3)
Northwestern University	68	American Educational Research Association (8); Amyotrophic Lateral Sclerosis Assn (6); Children's Tumor Foundation (6); Evolving Earth Foundation (6)
Nova Southeastern University†	4	The Spencer Foundation (4); Laura and John Arnold Foundation (3); Lumina Foundation for Education (3); Orthopaedic Trauma Association (3)
Ohio State University-Main Campus	127	Good Ventures Foundation (8); William T Grant Foundation (8); Breakthrough T1D (7); Additional Ventures Foundation (7)
Ohio University-Main Campus	5	Alfred P Sloan Foundation (4); American Foundation for Suicide Prevention (4); Laura and John Arnold Foundation (3); Arnold and Mabel Beckman Foundation (3)
Oklahoma State University-Main Campus	15	American Cancer Society (6); Alfred P Sloan Foundation (6); Research Corporation for Science Advancement (5); Institute for Humane Studies (5)
Old Dominion University	6	Alfred P Sloan Foundation (4); The Simons Foundation (4); Laura and John Arnold Foundation (3); Arnold and Mabel Beckman Foundation (3)
Oregon State University	30	American Heart Association (8); American Cancer Society (6); Gates Foundation (5); The Ford Foundation (5)
Pennsylvania State University-Main Campus	141	Blood Cancer United (10); The V Foundation for Cancer Research (9); Whitehall Foundation (9); WM Keck Foundation (8)
Princeton University	46	Cystic Fibrosis Foundation (9); Muscular Dystrophy Association (7); National Multiple Sclerosis Society (7); American Lung Association (6)
Purdue University-Main Campus	73	Crohn's & Colitis Foundation (9); Cystic Fibrosis Foundation (8); Laura and John Arnold Foundation (8); The Andrew W Mellon Foundation (8)
Rensselaer Polytechnic Institute	2	National Council of State Boards of Nursing (3); Accesslex Institute (3)
Rice University	13	The Susan G Komen Breast Cancer Foundation (5); The Ford Foundation (4); National Strength and Conditioning Association Foundation (4); Global Lyme Alliance (3)
Rutgers University-New Brunswick	76	Alfred P Sloan Foundation (9); Muscular Dystrophy Association (9); ASN Foundation for Kidney Research (7); American Diabetes Association (6)
Saint Louis University†	2	Arnold and Mabel Beckman Foundation (4); American Educational Research Association (3)
San Diego State University†	7	Alfred P Sloan Foundation (7); Institute for Humane Studies (4); Laura and John Arnold Foundation (3); Wings for Life USA - Spinal Cord Research Foundation (3)
Southern Illinois University-Carbondale†	2	The Spencer Foundation (4); Laura and John Arnold Foundation (3)
Southern Methodist University†	2	Lumina Foundation for Education (3); Orthopaedic Trauma Association (3)
Stanford University	56	The Allen Institute for Artificial Intelligence (6); Democracy Fund (6); Alliance for Clinical Trials in Oncology Foundation (5); The Foundation Fighting Blindness (5)
Stony Brook University	19	American Cancer Society (6); Laura and John Arnold Foundation (6); Arnold and Mabel Beckman Foundation (5); The Spencer Foundation (5)
Syracuse University	6	American Cancer Society (5); Wings for Life USA - Spinal Cord Research Foundation (3); American Foundation for Suicide Prevention (3); Muscular Dystrophy Association (3)
Temple University	13	The Ford Foundation (4); Arnold and Mabel Beckman Foundation (4); National Collegiate Inventors & Innovators Alliance (4); Good Ventures Foundation (3)
Texas A&M University-College Station	199	American Federation for Aging Research (10); The Michael J Fox Foundation for Parkinson's Research (9); BrightFocus Foundation (9); Crohn's & Colitis Foundation (9)
Texas Tech University	10	Alfred P Sloan Foundation (6); Research Corporation for Science Advancement (6); Laura and John Arnold Foundation (5); Arnold and Mabel Beckman Foundation (4)
The Catholic University of America†	4	American Heart Association (8); The Spencer Foundation (4); Laura and John Arnold Foundation (3); Orthopaedic Trauma Association (3)
The University of Alabama	9	The Andrew W Mellon Foundation (4); Crohn's & Colitis Foundation (4); Ewing Marion Kauffman Foundation (4); Accesslex Institute (4)
The University of Montana	3	American Heart Association (4); National Council of State Boards of Nursing (3); Accesslex Institute (3)
The University of Tennessee Health Science Center†	1	Alfred P Sloan Foundation (3)

continued

R1 institution	Leads	Top leads (number of its ten peers each funded)
The University of Tennessee-Knoxville	22	American Heart Association (8); American Cancer Society (6); Carnegie Corporation of New York (6); The Rockefeller Foundation (4)
The University of Texas Health Science Center at Houston†	19	Alfred P Sloan Foundation (6); Research Corporation for Science Advancement (6); American Genetic Association (6); American Kennel Club Canine Health Foundation (4)
The University of Texas Health Science Center at San Antonio†	11	Alfred P Sloan Foundation (5); Laura and John Arnold Foundation (4); American Educational Research Association (4); The Heising-Simons Foundation (3)
The University of Texas at Arlington	2	The Spencer Foundation (4); Alfred P Sloan Foundation (3)
The University of Texas at Austin	90	Crohn's & Colitis Foundation (8); American Federation for Aging Research (8); Lupus Research Alliance (7); American Lung Association (7)
The University of Texas at Dallas	6	Alfred P Sloan Foundation (6); The Andrew W Mellon Foundation (3); William T Grant Foundation (3); The Spencer Foundation (3)
The University of Texas at El Paso	7	American Heart Association (6); The Spencer Foundation (5); The Heising-Simons Foundation (3); The Robert Wood Johnson Foundation (3)
The University of Texas at San Antonio	6	Laura and John Arnold Foundation (3); American Cancer Society (3); Wings for Life USA - Spinal Cord Research Foundation (3); American Foundation for Suicide Prevention (3)
Tufts University	10	Institute for Humane Studies (7); Laura and John Arnold Foundation (6); Cystic Fibrosis Foundation (6); National Strength and Conditioning Association Foundation (4)
Tulane University of Louisiana	10	National Strength and Conditioning Association Foundation (4); Gordon E and Betty I Moore Foundation (3); The Heising-Simons Foundation (3); The Michael J Fox Foundation for Parkinson's Research (3)
University at Albany	20	American Heart Association (9); Alfred P Sloan Foundation (8); The Michael J Fox Foundation for Parkinson's Research (4); Arnold and Mabel Beckman Foundation (4)
University at Buffalo	51	Alfred P Sloan Foundation (8); American Cancer Society (7); Gates Foundation (7); American Lung Association (6)
University of Alabama at Birmingham	74	Alfred P Sloan Foundation (9); Arnold and Mabel Beckman Foundation (8); Laura and John Arnold Foundation (8); Gordon E and Betty I Moore Foundation (8)
University of Alabama in Huntsville‡	4	American Heart Association (6); Alfred P Sloan Foundation (3); The Robert Wood Johnson Foundation (3); National Collegiate Inventors & Innovators Alliance (3)
University of Arizona	65	Good Ventures Foundation (8); Muscular Dystrophy Association (7); American Educational Research Association (7); John Templeton Foundation (6)
University of Arkansas	9	American Educational Research Association (6); Arnold and Mabel Beckman Foundation (4); The Andrew W Mellon Foundation (3); Gordon E and Betty I Moore Foundation (3)
University of California-Berkeley	81	The V Foundation for Cancer Research (9); Crohn's & Colitis Foundation (8); Blood Cancer United (7); American Lung Association (7)
University of California-Davis	41	The Michael J Fox Foundation for Parkinson's Research (8); Walton Family Foundation (6); The Mark Foundation for Cancer Research (US) Ltd (5); The Breast Cancer Research Foundation (5)
University of California-Irvine	33	The Michael J Fox Foundation for Parkinson's Research (5); Foundation for Prader-Willi Research (5); Aci Foundation (5); Good Ventures Foundation (4)
University of California-Los Angeles	99	Cancer Research Institute (9); American Association for the Study of Liver Diseases Foundation (7); Alternatives Research and Development Foundation (7); Lewy Body Dementia Association (7)
University of California-Merced†	2	American Foundation for Suicide Prevention (3); Institute for Humane Studies (3)
University of California-Riverside	10	Walton Family Foundation (4); Cystic Fibrosis Foundation (4); Arnold and Mabel Beckman Foundation (4); The Robert Wood Johnson Foundation (4)
University of California-San Diego	140	The Susan G Komen Breast Cancer Foundation (9); John S and James L Knight Foundation (8); Lung Cancer Research Foundation (8); Grantham Foundation for the Protection of the Environment (7)
University of California-San Francisco†	105	Whitehall Foundation (9); Ewing Marion Kauffman Foundation (8); John S and James L Knight Foundation (7); Russell Sage Foundation (7)
University of California-Santa Barbara	11	The Susan G Komen Breast Cancer Foundation (5); American Educational Research Association (5); The Ford Foundation (4); Institute for Humane Studies (4)
University of California-Santa Cruz	8	Crohn's & Colitis Foundation (4); Accesslex Institute (4); Institute for Humane Studies (4); Cystic Fibrosis Foundation (3)
University of Central Florida	21	Laura and John Arnold Foundation (7); The Spencer Foundation (7); American Cancer Society (6); The Susan G Komen Breast Cancer Foundation (5)
University of Chicago	32	BrightFocus Foundation (6); Muscular Dystrophy Association (5); Rainwater Charitable Foundation (5); American Kennel Club Canine Health Foundation (4)
University of Cincinnati-Main Campus	89	Arnold and Mabel Beckman Foundation (7); Gordon E and Betty I Moore Foundation (6); The V Foundation for Cancer Research (6); Blood Cancer United (6)
University of Colorado Boulder	67	Laura and John Arnold Foundation (7); The Leona M and Harry B Helmsley Charitable Trust (6); The Michael J Fox Foundation for Parkinson's Research (6); American Lung Association (6)
University of Colorado Denver/Anschutz Medical Campus	44	The V Foundation for Cancer Research (7); Research Corporation for Science Advancement (6); The Ford Foundation (5); American Federation for Aging Research (5)
University of Connecticut	20	Alfred P Sloan Foundation (6); The Michael J Fox Foundation for Parkinson's Research (4); Grantham Foundation for the Protection of the Environment (4); Arnold and Mabel Beckman Foundation (4)
University of Dayton†	21	American Heart Association (9); American Educational Research Association (6); American Cancer Society (5); Alfred P Sloan Foundation (5)
University of Delaware	20	Gordon E and Betty I Moore Foundation (7); American Cancer Society (7); Cystic Fibrosis Foundation (6); American Genetic Association (5)
University of Denver	6	John Templeton Foundation (4); Alfred P Sloan Foundation (4); American Foundation for Suicide Prevention (4); Arnold and Mabel Beckman Foundation (3)
University of Florida	93	Arnold and Mabel Beckman Foundation (9); The Susan G Komen Breast Cancer Foundation (7); Russell Sage Foundation (7); Good Ventures Foundation (6)
University of Georgia	52	The V Foundation for Cancer Research (6); Foundation for Prader-Willi Research (6); Muscular Dystrophy Association (5); National Multiple Sclerosis Society (5)
University of Hawaii at Manoa	32	Laura and John Arnold Foundation (8); Carnegie Corporation of New York (6); Gates Foundation (5); John Templeton Foundation (5)
University of Houston	8	Walton Family Foundation (4); Cystic Fibrosis Foundation (4); Institute for Humane Studies (4); American Lung Association (3)
University of Idaho†	1	American Heart Association (6)
University of Illinois Chicago	34	The Michael J Fox Foundation for Parkinson's Research (5); Parkinson's Foundation (5); Gordon E and Betty I Moore Foundation (4); The V Foundation for Cancer Research (4)

continued

R1 institution	Leads	Top leads (number of its ten peers each funded)
University of Illinois Urbana-Champaign	61	The Michael J Fox Foundation for Parkinson's Research (8); Breakthrough T1D (6); The V Foundation for Cancer Research (6); Blood Cancer United (6)
University of Iowa	49	Arnold and Mabel Beckman Foundation (6); Research Corporation for Science Advancement (6); Gordon E and Betty I Moore Foundation (5); Laura and John Arnold Foundation (5)
University of Kansas	32	Crohn's & Colitis Foundation (6); The Children's Oncology Group Foundation (6); Washington Center for Equitable Growth (5); Gordon E and Betty I Moore Foundation (4)
University of Kentucky	35	Muscular Dystrophy Association (7); Gordon E and Betty I Moore Foundation (4); Breakthrough T1D (4); The Breast Cancer Research Foundation (4)
University of Louisiana at Lafayette	22	American Heart Association (10); American Cancer Society (6); Alfred P Sloan Foundation (6); Research Corporation for Science Advancement (6)
University of Louisville	11	Alfred P Sloan Foundation (6); American Educational Research Association (5); Crohn's & Colitis Foundation (4); Ewing Marion Kauffman Foundation (4)
University of Maine	8	The Simons Foundation (8); Alfred P Sloan Foundation (7); American Cancer Society (5); Institute for Humane Studies (4)
University of Maryland, Baltimore†	42	Arnold and Mabel Beckman Foundation (6); BrightFocus Foundation (6); Hyundai Hope on Wheels (6); Parkinson's Foundation (5)
University of Maryland-Baltimore County	2	The Robert Wood Johnson Foundation (3); National Collegiate Inventors & Innovators Alliance (3)
University of Maryland-College Park	143	The Breast Cancer Research Foundation (10); BrightFocus Foundation (10); Arnold and Mabel Beckman Foundation (10); Whitehall Foundation (9)
University of Massachusetts-Amherst	14	American Cancer Society (6); WM Keck Foundation (4); Arnold and Mabel Beckman Foundation (4); National Strength and Conditioning Association Foundation (4)
University of Massachusetts-Boston†	5	American Cancer Society (3); Laura and John Arnold Foundation (3); Alfred P Sloan Foundation (3); Revive & Restore (3)
University of Massachusetts-Lowell†	2	American Heart Association (6); National Council of State Boards of Nursing (3)
University of Memphis	6	Alfred P Sloan Foundation (5); John Templeton Foundation (3); Arnold and Mabel Beckman Foundation (3); Ewing Marion Kauffman Foundation (3)
University of Miami	24	American Lung Association (6); Crohn's & Colitis Foundation (6); The Susan G Komen Breast Cancer Foundation (5); BrightFocus Foundation (5)
University of Michigan-Ann Arbor	111	Arthritis Foundation (8); Life Sciences Research Foundation (7); Marc Lustgarten Pancreatic Cancer Foundation (6); The Ovarian Cancer Research Fund (6)
University of Minnesota-Twin Cities	97	Arnold and Mabel Beckman Foundation (9); BrightFocus Foundation (8); The Breast Cancer Research Foundation (7); Life Sciences Research Foundation (7)
University of Mississippi	8	The Andrew W Mellon Foundation (4); The Heising-Simons Foundation (3); Whitehall Foundation (3); Arnold and Mabel Beckman Foundation (3)
University of Missouri-Columbia	22	American Lung Association (7); National Multiple Sclerosis Society (6); BrightFocus Foundation (6); The Andrew W Mellon Foundation (5)
University of Missouri-Kansas City†	2	Laura and John Arnold Foundation (3); Lumina Foundation for Education (3)
University of Nebraska Medical Center†	20	Alfred P Sloan Foundation (7); Research Corporation for Science Advancement (7); Laura and John Arnold Foundation (6); Gordon E and Betty I Moore Foundation (5)
University of Nebraska-Lincoln	51	Alfred P Sloan Foundation (10); The V Foundation for Cancer Research (7); Research Corporation for Science Advancement (6); Blood Cancer United (5)
University of Nevada-Las Vegas	3	The Robert Wood Johnson Foundation (3); Arnold and Mabel Beckman Foundation (3); Russell Sage Foundation (3)
University of Nevada-Reno	11	American Cancer Society (4); The Andrew W Mellon Foundation (4); The Heising-Simons Foundation (3); Wings for Life USA - Spinal Cord Research Foundation (3)
University of New Hampshire-Main Campus	17	American Heart Association (8); American Cancer Society (7); American Educational Research Association (6); The Simons Foundation (5)
University of New Mexico-Main Campus	20	Gates Foundation (5); The Ford Foundation (5); Carnegie Corporation of New York (5); American Educational Research Association (5)
University of North Carolina at Chapel Hill	102	Cancer Research Institute (8); Life Sciences Research Foundation (7); ASN Foundation for Kidney Research (7); The Michael J Fox Foundation for Parkinson's Research (6)
University of North Carolina at Charlotte†	4	The Simons Foundation (5); American Cancer Society (4); American Heart Association (4); Arnold and Mabel Beckman Foundation (4)
University of North Dakota†	7	American Heart Association (9); The Simons Foundation (8); Alfred P Sloan Foundation (6); American Speech-Language-Hearing Foundation (4)
University of North Texas	5	The Robert Wood Johnson Foundation (3); William T Grant Foundation (3); Arnold and Mabel Beckman Foundation (3); National Council of State Boards of Nursing (3)
University of Notre Dame	9	The Robert Wood Johnson Foundation (4); Amyotrophic Lateral Sclerosis Assn (4); The Heising-Simons Foundation (3); The Kresge Foundation (3)
University of Oklahoma-Norman Campus	28	Gordon E and Betty I Moore Foundation (8); Alfred P Sloan Foundation (8); Laura and John Arnold Foundation (6); Crohn's & Colitis Foundation (5)
University of Oregon	3	American Cancer Society (3); Wings for Life USA - Spinal Cord Research Foundation (3); National Collegiate Inventors & Innovators Alliance (3)
University of Pennsylvania	104	WM Keck Foundation (9); Grantham Foundation for the Protection of the Environment (7); The Children's Oncology Group Foundation (7); Hyundai Hope on Wheels (6)
University of Pittsburgh-Pittsburgh Campus	93	Washington Center for Equitable Growth (8); The V Foundation for Cancer Research (7); The Heising-Simons Foundation (7); Prostate Cancer Foundation (7)
University of Rhode Island†	0	–
University of Rochester	14	Ewing Marion Kauffman Foundation (4); American Educational Research Association (4); Swine Health Information Center (3); American Kennel Club Canine Health Foundation (3)
University of South Carolina-Columbia	13	Research Corporation for Science Advancement (6); National Collegiate Inventors & Innovators Alliance (4); WM Keck Foundation (3); Global Lyme Alliance (3)
University of South Florida	46	Alfred P Sloan Foundation (8); American Cancer Society (7); Muscular Dystrophy Association (7); Alliance for Clinical Trials in Oncology Foundation (6)
University of Southern California	80	Muscular Dystrophy Association (8); Breakthrough T1D (7); American Diabetes Association (7); Edward P Evans Foundation (6)
University of Southern Mississippi	6	John Templeton Foundation (4); The Simons Foundation (4); National Council of State Boards of Nursing (3); The Spencer Foundation (3)
University of Texas Southwestern Medical Center†	60	The Michael J Fox Foundation for Parkinson's Research (8); Arnold and Mabel Beckman Foundation (8); Laura and John Arnold Foundation (6); Doris Duke Charitable Foundation (6)
University of Toledo†	7	John Templeton Foundation (3); Laura and John Arnold Foundation (3); Alfred P Sloan Foundation (3); John D and Catherine T Macarthur Foundation (3)

continued

R1 institution	Leads	Top leads (number of its ten peers each funded)
University of Utah	51	Foundation for the National Institutes of Health (6); BrightFocus Foundation (6); American Federation for Aging Research (6); Arthritis Foundation (5)
University of Vermont†	10	Walton Family Foundation (4); Knights Templar Eye Foundation (4); National Collegiate Inventors & Innovators Alliance (4); The Andrew W Mellon Foundation (3)
University of Virginia-Main Campus	62	The Michael J Fox Foundation for Parkinson's Research (7); American Lung Association (7); The Breast Cancer Research Foundation (6); Parkinson's Foundation (6)
University of Washington-Seattle Campus	98	Whitehall Foundation (9); Ewing Marion Kauffman Foundation (8); Blood Cancer United (7); Parkinson's Foundation (7)
University of Wisconsin-Madison	172	National Multiple Sclerosis Society (9); Lupus Research Alliance (9); American Lung Association (9); Arthritis Foundation (8)
University of Wisconsin-Milwaukee	4	American Heart Association (6); American Foundation for Suicide Prevention (4); Arnold and Mabel Beckman Foundation (3); National Council of State Boards of Nursing (3)
University of Wyoming†	4	American Cancer Society (4); The Robert Wood Johnson Foundation (3); The Spencer Foundation (3); National Collegiate Inventors & Innovators Alliance (3)
Utah State University	25	American Heart Association (9); Gordon E and Betty I Moore Foundation (7); American Cancer Society (7); Laura and John Arnold Foundation (7)
Vanderbilt University	102	The Michael J Fox Foundation for Parkinson's Research (9); Good Ventures Foundation (6); John S and James L Knight Foundation (6); Cancer Research Institute (6)
Virginia Commonwealth University	39	Alfred P Sloan Foundation (8); The Michael J Fox Foundation for Parkinson's Research (5); BrightFocus Foundation (5); Washington Center for Equitable Growth (5)
Virginia Polytechnic Institute and State University	55	The V Foundation for Cancer Research (7); The Michael J Fox Foundation for Parkinson's Research (6); Blood Cancer United (5); Laura and John Arnold Foundation (5)
Washington State University	30	Laura and John Arnold Foundation (7); American Cancer Society (7); Gordon E and Betty I Moore Foundation (6); The Robert Wood Johnson Foundation (6)
Washington University in St Louis	69	The Spencer Foundation (9); The Heising-Simons Foundation (8); American Educational Research Association (8); Parkinson's Foundation (7)
Wayne State University	17	The Simons Foundation (6); Institute for Humane Studies (6); Gordon E and Betty I Moore Foundation (5); Research Corporation for Science Advancement (5)
Weill Medical College of Cornell University†	80	The V Foundation for Cancer Research (9); Foundation for Prader-Willi Research (8); Alpha-1 Foundation (7); Lung Cancer Research Foundation (7)
West Virginia University	9	The Spencer Foundation (5); Walton Family Foundation (4); American Association of Veterinary Medical Colleges (4); WM Keck Foundation (3)
William & Mary†	3	American Cancer Society (4); American Heart Association (4); American Educational Research Association (3)
Worcester Polytechnic Institute†	7	John Templeton Foundation (3); Laura and John Arnold Foundation (3); John D and Catherine T Macarthur Foundation (3); Revive & Restore (3)
Yale University	58	Ewing Marion Kauffman Foundation (9); The Foundation Fighting Blindness (6); Metavivor Research and Support (6); Melanoma Research Foundation (6)

F Data processing, validation, and sensitivity

Every grant row keeps the IRS object ID of the return it came from, so any figure can be traced to a filing. Every figure derived from the data is generated by the analysis code rather than typed by hand (figures quoted from published sources are cited, and a few counts describing the IRS distribution were checked against the source files), and the whole analysis is rebuilt from the raw IRS, IPEDS, HERD, NIH, NSF, and Section 117 files in one run. Quality checks: every IRS posting year from 2021 reconciles to the IRS index files, to within two returns in 2023 (Table 1); HERD totals reproduce the published NSF tables (Section 6); the research labels were compared across four machine readings and two human readers (this appendix); the recipient matches were checked only on preliminary samples labelled by an AI model and not by any person (Table 34); and the headline research total was re-estimated under alternative rules (Table 35). The largest funders and recipients were also reviewed individually during development (AI-assisted), which led to documented funder-type corrections for a few affiliates the rules missed (for example, physician practice-plan foundations).

F.1 Readings of the research purpose

Population. The pipeline was frozen before any sample was drawn. The population is the 799,675 external grant rows, paid or committed, of tax years 2020–2025 that carry a purpose text ($126.4B); they reduce to 121,070 unique texts after case and spacing are normalized. A label is given to a text and applies to every grant row that carries it. Totals in this appendix are for grants paid in tax years 2020–2024, the report's headline universe, unless stated.

Machine readings. The rules are the classifier of Section 3.3. Three language models (Claude Sonnet 5.5, Gemini 2.5 Flash and GPT-5-mini, run through their vendors' batch interfaces on 4 October 2026, with reasoning effort low or thinking off and temperature zero where the interface allows it) labelled every text as research (R), not research (N) or unclear (U) under a written codebook, released with the prompts and the raw answers. Each model saw the funder, the recipient as filed, the tax year, the amount of the largest grant carrying the text, and the text; none saw the classifier's label or another model's. 890 answers in which a model corrected itself were read as their final statement; 11 texts have no usable answer from one model (safety refusals and answers outside the codebook) and count as unclear votes. The three models agree on research or on not research for 59% of texts and 73% of dollars (Table 32). Table 28 gives each reading's totals.

Sample for the human readings. Texts were grouped into six strata by the pattern of the three model votes. The texts of the 100 largest paid grants in the explicit layer and of the 30 largest commitments were taken in full (71 texts). Within each stratum further texts were drawn without replacement with probability proportional to their dollars: 62 were large enough to be certain of selection and 518 were drawn by systematic sampling on a random order. The sample has 651 texts, which themselves carry $74.8B. Inclusion probabilities, the random seed and the sampling code are released.

Human readings. Two readers labelled the sample in a workbook that showed what the models had seen and nothing else: the funder, the recipient as filed, the tax year, the amount of the largest grant carrying the text, and the text; no model vote, stratum or classifier label. Reader 1, the author, who designed the classifier and the pipeline, labelled the whole sample; an independent second reader with no other involvement in the study labelled a random subset of 149 texts, drawn in proportion to the sample's strata, without access to the classifier, the models' labels or the first reader's labels. The models read under codebook v1.1 and the readers under v1.2, which differ in one rule changed before the sample was drawn: a purpose type is required only for texts labelled research. Table 31 gives the provenance of each reading. Each reader's labels were fixed, with a recorded checksum, before any comparison; one of reader 1's labels was corrected before that point, after an automatic check found it incomplete. After the labels were fixed, reader 1 re-read 150 texts, mixed and renumbered and with no earlier label shown: 75 drawn at random from texts where the first label differed from the label given by at least two models and 75 from the rest. 113 of 150 kept the same label (75%, 68–82%; 77% when the two groups are weighted to their numbers in the sample, 387 and 264, which is a result for this recheck design rather than a population repeatability rate); of the 37 that changed, 17 moved to the models' majority label and 11 moved away from it. Reader 1 reported, after the labels were fixed, having labelled texts that name research beside other uses by whether research appeared to be the main purpose, a stricter rule than the codebook's, which labels any named research as research with purpose type "mixed"; the labels were not revised, and reader 1 used only two of the four purpose types, so the split of research dollars by purpose type is not validated. A check of the sample against the written rules found labels of reader 1 that conflict with the codebook as written (for example "CLINICAL RESEARCH STUDY" and "RESEARCH PROJECT" labelled unclear, "RESEARCH CENTER" labelled not research), so part of the disagreement between readers is non-compliance with the instructions rather than ambiguity in the filings. Those labels were left as frozen; a reading under a revised codebook would be a separately versioned study.

Estimation. Sample estimates were specified, and checked by simulation, before the labels existed. The sampling unit is the unique text; its label applies to every grant row carrying it, and a repeated generic text is one unit however many rows it covers. The codebook defines the label by the text alone ("judge the text, not what the funder probably intended"); the funder, recipient, year and amount shown beside it are context for reading, and the label is applied to every row carrying the text. The largest unit is a generic text covering 45,082 grant rows and $13.9B. Whether context changed any label was not tested; a check of the largest repeated texts across contrasting contexts is part of the planned follow-on study, and the text-to-row bridge is released so that the sampling unit and the dollar unit can be reproduced. Shares are ratios of weighted sums of dollars, each text weighted by the inverse of its inclusion probability; totals by label are sums over the six vote-pattern strata of the stratum's dollars times the labelled share in its sample. Research, not research and unclear are estimated separately, and unclear is never added to either. Intervals are 95% percentile intervals from a bootstrap that holds the 71 take-all and 62 certainty texts fixed and resamples the 518 PPS draws within strata ($n - 1$ of n with replacement, weights rescaled, after Rao and Wu (1988)), recomputing every estimate on each replicate; the systematic PPS draw is treated as with-replacement, a working model whose coverage is checked only by the simulation below and is not guaranteed for the systematic design. The stratum dollar shares in Table 32 carry Clopper–Pearson intervals (Clopper and Pearson 1934) instead, because the bootstrap cannot see a label the draws never produced: within a stratum every PPS draw stands for the same dollars, so the count of draws with a label is treated as binomial, the certainty texts' dollars are held fixed, and the interval is transformed to a dollar share; this is exact for the binomial working model, not for the systematic design, and the table says so. In 400 simulated draws of the real sampling procedure, with synthetic labels for every text generated from label probabilities that vary by vote pattern and text size (the scenario is recorded in the estimator's code with its seeds), the headline totals and layer shares were unbiased to within 0.5% and their intervals contained the true value in 95–97% of draws; across all 10 targets coverage ranged 86–100% (lowest: reader's research share of Sonnet's research texts, by texts 86%), with a Monte Carlo standard error of about 1.1 points at nominal 95%. The simulation is a diagnostic, not a coverage guarantee, and an interval of zero width in a stratum with no observed research text is not proof of absence. The layer figures in Table 33 are direct ratio estimates within each layer, whereas the totals are post-stratified by vote pattern; the layers' research dollars therefore sum to $12.2B against the overall $11.9B on the paid domain that includes research-capital rows ($11.3B on the common domain of Table 28, which excludes them), a difference of estimator, not of coding. Reader 1's estimates of research, not research and unclear sum to the $103.0B of external grants paid in 2020–2024 that carry a purpose text; a further $0.29B carry none and are outside every reading. All intervals describe sampling error around one reader's labels; the spread between readers in Table 29 is a separate and larger source of uncertainty, and the two are not combined.

Table 28: Sensitivity of reported research totals to the reading of the purpose text, grants paid in tax years 2020–2024, on one domain (research-capital rows excluded)

Reading	Research $B	Explicit layer: research	unclear	not research	unassigned	Research outside the layer $B	Unclear $B
Rules (classifier, explicit layer)	13.0	100%	0%	0%	–	0.0	8.7
Claude Sonnet 5.5	12.5	88%	11%	1%	–	1.0	21.5
Gemini 2.5 Flash	13.7	89%	10%	1%	–	2.1	19.7
GPT-5-mini	15.0	93%	5%	2%	–	2.9	16.9
Two of the three models	13.6	91%	8%	1%	–	1.8	19.5
All three models	11.9	85%	4%	1%	10%	0.9	13.8
Reader 1 (sample, estimated)	11.3 (10.3–12.3)	72% (66–78)	16% (11–22)	11% (7–16)	–	2.2 (1.5–3.1)	10.0 (8.2–11.9)

One domain for every reading: external grants paid in tax years 2020–2024 with a purpose text, excluding the rows the classifier assigns to research capital ($102.2B; the capital rows, $0.8B, are in Table 33). The rules reading is the classifier itself (explicit layer; its unclear column is the probable layer). Model readings cover every text; reader 1's are estimated from the sample, with 95% bootstrap intervals. Unassigned: the share of the explicit layer's dollars on which the agreement rule has no verdict.

Table 29: Agreement between readings

Pair of readings	Same label, share of dollars	Same label, share of texts	Basis
Claude Sonnet 5.5 and Gemini 2.5 Flash	93%	89%	all 121,070 texts
Claude Sonnet 5.5 and GPT-5-mini	91%	86%	all 121,070 texts
Gemini 2.5 Flash and GPT-5-mini	92%	86%	all 121,070 texts
Rules (on the text) and Claude Sonnet 5.5	81%	68%	all 121,070 texts
Rules (on the text) and Gemini 2.5 Flash	82%	67%	all 121,070 texts
Rules (on the text) and GPT-5-mini	82%	70%	all 121,070 texts
Reader 1 and Rules (on the text)	82% (80–84)		sample, estimated for the population
Reader 1 and Claude Sonnet 5.5	78% (76–80)		sample, estimated for the population
Reader 1 and Gemini 2.5 Flash	79% (77–80)		sample, estimated for the population
Reader 1 and GPT-5-mini	80% (78–81)		sample, estimated for the population
Reader 1 and reader 2	75%	56%	149 sampled texts, unweighted
Reader 1, first and second reading	93%	75%	150 re-read texts, raw
Reader 1, first and second reading, weighted		77%	the two recheck groups weighted to their sizes in the sample (387 and 264)

Labels are research, not research or unclear. Machine pairs are computed on every text of the labelled population; reader 1 against the machines is estimated from the sample (95% intervals); the human pairs are the sampled texts themselves, which over-represent contested texts.

Table 30: The two human readers on the texts both read

Reader 1 \ reader 2	Research	Not research	Unclear	Total
Research	12	7	11	30
Not research	8	62	23	93
Unclear	3	13	10	26
Total	23	82	44	149

The 149 texts read by both readers (a subset of the sample drawn in proportion to its strata, so contested texts are over-represented). Counts of texts, unweighted. Same label on the diagonal.

Table 31: Provenance of each reading

Reading	Instrument	Date	Texts
Rules	classifier of Section 3.3, frozen at tag `v2-freeze-2026-10-04`	4 Oct 2026	all 121,070
Claude Sonnet 5.5, Gemini 2.5 Flash, GPT-5-mini	codebook v1.1 as prompt body (hash `c254fd86`), batch interfaces	4 Oct 2026	all 121,070
Reader 1 (author)	codebook v1.2, workbook (funder, recipient, year, amount, text)	5 Oct 2026	651
Reader 1, second reading	same workbook, texts renumbered, no earlier label	5 Oct 2026	150
Reader 2 (independent)	codebook v1.2, same workbook layout	6 Oct 2026	149

Each human reading was frozen with a recorded checksum before any comparison. v1.1 and v1.2 differ only in requiring a purpose type on research texts alone.

Table 32: Reader 1's labels by the votes of the three language models

Votes of the three models	Texts	$B	Sampled	Research	Unclear	Not research
All three research (RRR)	16,092	16.1	136	72% (66–78)	13% (8–19)	15% (11–20)
Research and unclear (RRU, RUU)	6,108	4.8	93	31% (23–39)	33% (26–41)	36% (29–44)
Research against not research (NNR, NRR, NRU)	628	0.5	32	3% (0–11)	3% (2–10)	93% (86–97)
Not research and unclear (NNU, NUU)	17,411	9.5	92	1% (0–6)	13% (8–20)	86% (79–91)
All three unclear (UUU)	25,954	18.9	137	8% (4–14)	35% (28–42)	57% (50–65)
All three not research (NNN)	54,877	76.6	161	0% (0–1)	2% (1–5)	98% (95–99)

Texts and dollars are those of the labelled population (external grants, paid or committed, tax years 2020–2025). The last three columns are the reader's labels as shares of each stratum's dollars, with Clopper–Pearson 95% intervals computed under the with-replacement working model described in the text (not exact for the systematic draw).

Table 33: Reader 1's labels by the classifier's layer

Classifier layer	$B	Sampled texts	Research	Unclear	Not research
Explicit research	13.0	166	72% (66–78)	16% (11–22)	11% (7–16)
Research capital	0.8	3	71% (55–83)	0% (0–0)	29% (17–45)
Probable (research-related)	8.7	110	20% (12–27)	24% (17–33)	56% (46–66)
Funder profile (dropped)	1.9	55	7% (0–19)	9% (5–19)	84% (67–93)
None (generic text)	70.1	257	1% (0–1)	7% (5–9)	93% (91–95)
Excluded	8.5	49	0% (0–0)	12% (3–23)	88% (77–97)

External grants paid in tax years 2020–2024 that carry a purpose text. Shares of each layer's dollars by the reader's label, with 95% bootstrap intervals; sampled texts are those with dollars in the layer.

Order of the protocol. The pipeline was frozen, with recorded checksums, before any sample was drawn. The codebook has three versions: v1.0, the first draft; v1.1, revised after a 300-text dry run of three models and before any human label; and v1.2, revised before the sample was drawn (the purpose-type rule). The models read under v1.1 and the readers under v1.2.

The model runs and the sample draw preceded the human readings. Reader 1's labels were frozen, with a recorded checksum, before the second reading and before any comparison, and reader 2's

labels likewise. No reading is treated as the reference, because the readers disagree with one another at a rate that a single reference cannot absorb; the strata are the vote patterns themselves, both agreement thresholds are reported in Table 28, and the second reader covered a subset.

The sample cannot measure labelling error by year, so growth rates are not re-estimated from it; Table 6 shows the growth of research under each machine reading instead. No claim is made that depends on label validity or match accuracy; every reading is compared on one domain, and a separately versioned validation round under a revised codebook is planned as a follow-on study.

The released field crosswalk bounds its keyword stems to whole words (an unbounded stem LABOR would match COLLABORATION), carries spelling variants in the generic-topic list, and excludes street names containing "research" from the purpose text with a guard that leaves "Dr" before a person's name alone. These rules were settled after the labels were frozen; no human or model label changed. Against the rules in force when the sample was drawn, in the headline domain, 242 grant rows ($0.09B) have a different layer, all between the probable, funder-profile and generic layers (0 explicit rows), and 4,521 rows ($1,316M) a different field. The explicit research total is $13.02B under both. The by-layer tables in this appendix were computed from the frozen labels, inclusion probabilities and strata with the released rules; the rules in force at the sample draw, the before-and-after tables and a row bridge are released with the data.

F.2 Recipient resolution and sensitivity

Table 34: Preliminary validation of recipient resolution (AI-labelled samples)

Sample	Tier	n	Correct	Right family, wrong campus	Wrong	Precision	Family-level
Sample 1 (before fixes)	A	40	34	1	5	85%	88%
Sample 1 (before fixes)	B	40	36	2	2	90%	95%
Sample 1 (before fixes)	C	40	35	2	3	88%	92%
Sample 1 (before fixes)	All	120	105	5	10	88%	92%
Sample 2 (after fixes)	A	30	23	3	4	77%	87%
Sample 2 (after fixes)	B	30	29	1	0	97%	100%
Sample 2 (after fixes)	C	30	28	2	0	93%	100%
Sample 2 (after fixes)	All	90	80	6	4	89%	96%
Sample 2, tiers weighted by dollars	A–C					92%	97%

Table 35: Sensitivity of the headline research total

Variant	Research grants ($B)	vs baseline
Baseline: tiers A–C, explicit research (research capital excluded), 2020–2024	13.02	–
Exclude affiliates named as medical centres, health systems or clinics	12.67	-2.7%
Add tier D matches	13.11	+0.7%
Exclude donor-advised fund sponsors	12.95	-0.5%
Exclude the largest funder	12.26	-5.9%
Count government-funded intermediaries as philanthropy	14.95	+14.8%
Research-only purposes (exclude grants that also name scholarships, endowment, or general support)	11.91	-8.5%
Add research capital (research buildings, construction, facilities)	13.82	+6.2%
Add probable research layer	21.71	+66.7%