



Who Funds the Settlement of Space?

An Open Census of Funding Streams for Space Colonization, 2016–2026

An Inner Planets Terraforming Foundation research report

Second edition · July 2026 · innerplanets.foundation

The complete dataset and analysis code are published with this report.

Interest disclosure: the Foundation conducts research within the largest funding gap this report identifies (see Chapter 9).

OPEN PUBLICATION

Contents

1. The question.....	3
2. How we counted.....	3
3. The government stream: NASA, DARPA, NSF — and Europe.....	4
4. The nonprofit and philanthropic stream.....	7
5. The university stream.....	9
6. The corporate and founder stream.....	11
7. The map: where the money goes.....	12
8. Where the money is not: funding gaps.....	14
9. What this report is, and is not.....	17
10. What would change this picture.....	17
Appendix — Changes in the second edition.....	18
Appendix — Data release and topic key.....	18

1. The question

Ask who is planning for the human settlement of space and the answers come easily: space agencies, a few famous companies, a scattering of advocacy groups. Ask who is *funding* that planning — with actual dollars, to actual researchers, on the actual problems a settlement would face — and the answers turn out to be surprisingly hard to find. No census of settlement-relevant funding existed. This report is an attempt at one.

The question we set out to answer is: **what funding streams have been active, from 2016 through mid-2026, to plan for space colonization?** "Plan for" is meant broadly. It covers the technology of getting there and staying alive; the science of the destinations; the production of materials, food, and shelter from local resources; the health and performance of the people; the study of how a settlement would run itself; and the education and advocacy that build the field. It covers government agencies, private philanthropy, nonprofits, universities, and corporations — with a clear accounting of what each of those categories can and cannot be measured to do.

Two findings organize everything that follows. First, the money is real and large — several billion dollars a year across the streams this report can measure — but it is concentrated almost entirely in hardware, biology, and destination science. Second, the layer of the problem that concerns how settlers would actually live together — who owns what, what serves as money, how rules are made and enforced as a community grows — receives almost nothing, from any stream, anywhere. The nearest funded work amounts to a handful of researchers. We say this carefully, and Chapter 7 is devoted to saying it precisely, because the Inner Planets Terraforming Foundation conducts research on exactly these questions and a reader is entitled to weigh that interest when judging our claims. The full dataset and code behind every number in this report are published alongside it.

2. How we counted

2.1 Seven instruments

No single database answers the question, so this report combines seven instruments, each with known blind spots. (1) The IRS Business Master File — all 1.97 million U.S. tax-exempt organizations — filtered through a topic taxonomy and hand-checked anchor lists into 2,562 space- and settlement-relevant nonprofits (2,479 in the first edition; 83 added by a follow-up scan of two newly promoted topics), with financial histories retrieved for every organization that files them (1,275 of the 2,562; the remainder are small enough to file postcards or file nothing). (2) The federal award record at USAspending.gov: full-text keyword search over NASA and DARPA award descriptions, fiscal 2017 through mid-2026. (3) The NSF award database, same window, phrase-searched. (4) Program inventories of NASA, ESA, and DARPA assembled from agency publications — necessary because Europe publishes no award-level data, and because program budgets and award text see different things. (5) A named inventory of university centers and institutes, with each classified by whether its money is genuinely internal (endowment, state appropriation, tuition) or federal money wearing a university nameplate. (6) A verified review of corporate and founder philanthropy. (7) Added in this second edition: grantee-level line items from IRS e-file XML — Schedule I and 990-PF grant tables for 63 targeted funders — which turn the first edition's qualitative funding-flow reading into measured flows.

2.2 The relevance rubric

Not everything a matched organization does is colonization planning, so every topic area carries a public relevance grade: **3 (direct)** — exists to advance human settlement of space; **2 (enabling)** — funds capabilities settlement requires that also serve other purposes; **1 (adjacent)** — the same intellectual questions in non-space contexts, such as commons governance research; **0 (evidence base)** — terrestrial closed communities themselves, whose value here is as the historical record of how bounded communities work. Headline totals in this report sum grades 2 and 3 only; grade-1 and grade-0

activity is reported separately and labeled. The grade assignments are published with the data, and a reader who re-grades a topic can recompute every total.

2.3 Three rules of accounting

Three rules govern every number. **Columns are lenses, not pots: they must never be added together.** A nonprofit's revenue often is federal money (The Aerospace Corporation's revenue is almost entirely federal contracts; TRISH's NASA money appears both in agency budgets and in a university's accounts), so summing the streams would double-count. **Totals are floors, not censuses.** Keyword matching over award text and name matching over an organization registry both miss things; every total should be read as "at least." **A silent database is not an empty field.** Work funded inside universities from internal budgets, inside agencies without itemized awards, or inside corporations as internal R&D is invisible to these instruments; where we assert a gap, Chapter 7 states which instruments looked and what a contradiction would look like.

2.4 A note on time windows

The federal columns cover awards from fiscal 2017 through mid-2026 (a decade of obligations). The nonprofit column is an annualized figure (the mean of each organization's three most recent annual filings). The two are deliberately not commensurable — one is a decade of awards, the other a yearly rate — which is one more reason the columns do not sum. Trend figures use tax years 2016–2024, and the most recent two years undercount because filings lag.

3. The government stream: NASA, DARPA, NSF — and Europe

Government money is the oldest and largest stream funding work relevant to space settlement, and it is also the most selective. Federal agencies fund hardware, biology, and the psychology of small isolated crews in real detail. What they do not fund, with remarkable consistency, is research into how a settlement would run itself once people were living there — its economy, its property arrangements, its rules for handling disputes. This chapter surveys four government funders — NASA, DARPA, the National Science Foundation, and the European Space Agency — asking of each: what does it actually pay for, and what does it conspicuously leave alone?

A note on the numbers before we start. Award totals reported here come from matching program descriptions and award abstracts against a keyword list built around settlement-relevant topics. That approach finds a floor, not a ceiling — it will miss relevant work described in unfamiliar language, and it will not capture agency line items that were never broken out into individual competitive awards. Readers should treat every dollar figure below as "at least this much, as far as the record shows," not as a definitive program budget.

NASA

NASA's most direct engagement with settlement is its human research effort. The Human Research Program, run out of the agency's exploration and space operations offices, is the umbrella for biomedical and behavioral research aimed at keeping astronauts healthy and functional on long missions; it was funded at roughly \$151 million in fiscal year 2023. Underneath that umbrella sit some of the closest things to lived-in space habitats that any funder supports: HERA, a 45-day isolation habitat at Johnson Space Center that has been running missions since 2014, and CHAPEA, a year-long, four-person Mars-surface simulation inside a 3D-printed habitat called Mars Dune Alpha. The first CHAPEA mission ran from June 2023 to July 2024; a second began in October 2025. A separate translational-health partnership with Baylor, Caltech, and MIT (TRISH) has been funded at up to \$134.6 million for 2022 through 2028. All of this research asks how individuals and small teams cope with confinement, sleep disruption, and distance from Earth — not how they would organize themselves as residents of a place.

NASA also funds a substantial push toward making things on-site rather than shipping them from Earth — building materials, breathable air, food — a push that shows up across roughly \$142 million in keyword-matched awards from fiscal year 2017 through 2026. The single largest award in that set is a \$57.2 million Small Business Innovation Research contract awarded to the construction company ICON in 2022 for 3D-printing structures, landing pads, and roads out of lunar and Martian soil. Alongside it sit a cluster of public prize competitions: the Break the Ice Challenge for excavating icy soil (about \$5 million in prize money, 2020–2024), Watts on the Moon for power transmission and storage (also about \$5 million), and the Deep Space Food Challenge for closed-loop food production (\$1.25 million in its final round, with a follow-on "Mars to Table" competition opened in January 2026). An earlier program, NextSTEP-2, funded six full-scale deep-space habitat prototypes from 2016 to 2019 at roughly \$65 million combined, with industry partners contributing at least another 30 percent.

A third major line is planetary defense — protecting Earth, not building elsewhere. The Double Asteroid Redirection Test (DART), a spacecraft that deliberately collided with an asteroid moon in 2022, cost about \$324 million. Its successor, the NEO Surveyor infrared telescope, is budgeted at roughly \$1.2 billion excluding launch costs, with launch planned for September 2027. NASA's Planetary Defense Coordination Office runs at roughly \$150 million a year in recent years.

What is missing is space law and policy. Across a full decade of records, NASA-funded awards matching space governance, space law, or space policy keywords total just over \$2 million across five awards — a rounding error next to the roughly \$151 million spent on human research in a single year, or the billion-plus committed to a single defense telescope. NASA funds essentially no research into the legal or institutional questions a settlement would eventually have to answer.

DARPA

The Defense Advanced Research Projects Agency does not fund space settlement as a mission, but a cluster of its programs turns out to be doing settlement-relevant work anyway, chiefly in manufacturing and biology. NOM4D funds in-space and on-Moon manufacturing of large, precise structures — antennas over 100 meters across are the demonstration target — through 2026. Cornucopia is developing palatable food grown from microbes fed on water, air, and electricity. ReSource, an earlier program running from about 2019 to 2023, funded microbes that convert waste into food, lubricants, adhesives, and water. None of these three programs set out to study settlement; they are defense investments in making a small, resource-poor outpost self-sufficient, which happens to be exactly the problem a settlement faces. Collectively they account for roughly \$26 million in matched awards.

DARPA's largest space-adjacent program by dollar value is Blackjack, a proliferated low-Earth-orbit satellite constellation with autonomous onboard decision-making, funded at roughly \$369.5 million across 14 awards since about 2018. Its purpose is squarely defense-oriented — resilient military space architecture — but the underlying spaceflight engineering overlaps with civil and commercial programs. DRACO, a nuclear thermal propulsion demonstration developed jointly with NASA starting in 2020, was canceled in fiscal year 2026 after roughly \$27 million in prime-contractor awards; it illustrates that even well-funded space programs at DARPA are not guaranteed to survive.

DARPA also runs the only social-science portfolio in this chapter with a name suggesting it might address self-governance directly: the Next Generation Social Science program, active from 2016 to about 2021, which funded teams at the University of Pennsylvania (at \$2.95 million over two years, plus a \$2.3 million option), a Virginia Tech–led consortium spanning Stanford, Cornell, Johns Hopkins, and Northwestern, and additional teams at Gallup and Indiana University. The program studied collective-identity formation: the mechanisms by which individuals in online and laboratory experiments coalesce into a unified group, or split apart, using tools like public-goods games and group cooperation exercises. That is closer to settlement-relevant institution-building than anything else in the federal government's portfolio, and it is worth being precise about what it did and did not cover. The program studied how people come to feel like a group and how norms and cooperation spread through a population. It did not study the appearance of money, property claims, dispute-resolution mechanisms, or formal governance structures within a bounded community — the pieces a settlement would

specifically need. Closely related DARPA programs — Ground Truth, which built synthetic social simulations to validate research methods, and Habitus, which models how communities represent and transmit local knowledge — sit on either side of that same gap without occupying it.

NSF

The National Science Foundation funds the scientific groundwork that settlement-relevant engineering eventually draws on, and it funds it in volume: 62 awards matching astrobiology since 2016, 74 matching regolith (loose surface soil and rock, the raw material for on-site construction and resource extraction), 31 matching space manufacturing, plus smaller counts for in-situ resource use (3 awards) and planetary defense (3 awards). NSF also supports a substantial body of research into how communities manage resources they hold in common — 17 awards matching "common pool resource" research, the academic literature most often cited as a starting point for thinking about how a settlement might govern shared assets like water, air, or power.

But that commons research, and a separate set of 19 awards matching "self-governance," all address terrestrial cases: tribal constitutional development, Inuit co-management of wildlife, and marine and coastal commons. None examines a space or closed-community setting. Most tellingly, a search across NSF's awards since 2016 for space policy, space law, or space governance returns zero matches. NSF funds the science and, separately, funds the general theory of self-governance — but it has not funded a single award connecting the two to a space settlement context. (This count excludes a "space weather" keyword query, which turned up unrelated atmospheric-science results, and a malformed disaster-recovery query that returned no usable data; both were dropped rather than counted as zero-relevance.) It is worth noting that NSF's award data was searched by title and abstract text, so a program using unusual terminology for governance-adjacent work could in principle be missed — but the pattern across dozens of searches is consistent enough to state plainly: NSF has not funded space governance research.

ESA and Europe

The European Space Agency does not publish an open, award-level database comparable to NASA's or NSF's, so this section is built from public program pages and news reporting rather than a systematic dollar-by-dollar search — a methodological limit worth stating rather than papering over.

ESA's flagship contribution to closed-loop life support is MELiSSA, a consortium of roughly 30 organizations that has been developing a regenerative system to convert waste into air, water, and food since 1989 — the longest-running program of its kind anywhere. ESA also sponsors research at Concordia, the French-Italian Antarctic station, where roughly 36 biomedical projects have run over two decades studying psychology, sleep, immunology, and group cohesion under extreme isolation — Europe's closest analog to NASA's HERA and CHAPEA. In September 2024, ESA and the German space agency inaugurated LUNA, a 1,000-square-meter regolith testbed near Cologne that includes a four-person habitat mockup and an experimental greenhouse.

On resource extraction, ESA runs several linked efforts: the PROSPECT lunar drill (developed since roughly 2016, now flying on a NASA-contracted mission after its original ride was canceled), a lunar in-situ resource utilization demonstration aiming to extract oxygen and water from soil, an annual Space Resources Challenge robotics competition, and ESRIC, a dedicated space-resources innovation center run jointly with Luxembourg since 2020. On law, ESA funds the European Centre for Space Law, which has run legal education courses — a summer course now in its 34th edition — since 1989, at a modest, course-scale level of funding. That legal work addresses international and commercial space law, not the internal rules of a settlement.

What this leaves unfunded

Read together, the pattern across all four funders is consistent. Agencies pay to keep people alive and productive in space, to make useful materials out of local soil, and to understand how small teams cope with isolation. None funds research into how a settlement would govern itself once it existed as a

community rather than a mission crew — its money, its property, its means of resolving disputes. That gap is not absolute: a handful of near-miss studies exist, including incidental observations of self-organizing behavior among NASA-funded Mars-simulation crews and a European sensor study tracking group dynamics at Concordia, and these deserve closer treatment on their own terms. But as a matter of deliberate, funded research programs, the question of internal governance sits outside every government funding stream examined here.

4. The nonprofit and philanthropic stream

What this census counts

The nonprofit portion of this landscape study begins with 2,562 U.S. tax-exempt organizations, matched by name and mission against the IRS's Business Master File, a public registry of roughly 1.97 million tax-exempt entities nationwide (the first edition matched 2,479; a follow-up scan of two newly added topics — digital-community governance and expedition training — contributed 83 more). Of those 2,562, financial detail could be retrieved for 1,275 — the rest are registered but file no return, file a return too simple to report revenue, or have gone dormant. Where a revenue figure is used below, it is a three-year mean drawn from each organization's most recent filed Form 990s, smoothing out one-time gifts, bequests, and reporting gaps in any single year.

One point needs to be stated plainly before any dollar figures appear: nonprofit revenue is a lens on organizations, not a separate pool of money sitting alongside government and private capital. The single largest total in this census — roughly \$2.3 billion a year, attributed to organizations working on spaceflight research, development, and operations — is not philanthropy in any ordinary sense. It is dominated by a handful of federally focused nonprofits, among them The Aerospace Corporation, Draper Laboratory, and the Universities Space Research Association, whose revenue is overwhelmingly composed of federal contracts and cooperative agreements run through a nonprofit corporate form rather than a for-profit one. Counting that \$2.3 billion as "philanthropic support for spaceflight" would badly mislead a reader. It belongs in this census because these are, legally, 501(c)(3) organizations; it does not belong in any tally of charitable giving. This distinction matters throughout: the categories in this report describe different populations of organizations, not stacked layers of the same money, and none of the totals here should be summed against one another or against the government and private-capital figures presented elsewhere in this report.

Where the philanthropic dollars concentrate

Once the federally funded contractors are set aside, the genuinely donor-supported part of the space nonprofit sector clusters in a few recognizable places.

Observatories and science institutes are the largest of these by dollar volume, with roughly \$539 million a year in aggregate revenue across just over a hundred organizations. This category includes long-established, donor-endowed astronomical facilities — the Keck telescopes' operating partnership, Lowell Observatory, and the consortium of universities that operates federally affiliated observatories under the Association of Universities for Research in Astronomy. Some of this revenue reflects endowment income and private gifts in the classic philanthropic sense; some of it reflects facility-operations funding channeled through public-private partnerships, which is a different kind of money even though it flows through the same nonprofit structures. Either way, this is where astronomy's institutional wealth sits.

Planetariums and space museums add roughly \$90 million a year across 55 organizations — the Adler Planetarium, regional air-and-space museums, and similar visitor-facing institutions that depend on admissions, memberships, and donor support rather than research contracts.

Space-focused education and workforce-development organizations bring in roughly \$108 million a year across 107 organizations. This is where Challenger Center for Space Science Education, the network of Space Grant-adjacent bodies, and scholarship and fellowship funds such as the Astronaut

Scholarship Foundation sit — organizations whose entire purpose is training the next generation of engineers, scientists, and educators rather than doing space work themselves.

Citizen-science and amateur astronomy make up the largest count of organizations by far — 332 registered groups, from local astronomy clubs to the American Association of Variable Star Observers — with combined revenue of about \$133 million a year. Most of these organizations are genuinely small and volunteer-run; the aggregate figure is pulled upward by a small number of outliers, including at least one large donor-advised fund captured in the same category, so the median organization in this group operates on a budget closer to a few thousand dollars than to a meaningful fraction of that total.

The settlement-specific slice

Set against those totals, the nonprofit sector specifically organized around settling and developing space is small. Advocacy and development organizations — the National Space Society, the Mars Society, Explore Mars, the Space Studies Institute, Open Lunar Foundation, and Blue Marble Space among the more visible names — run on roughly \$12 million a year combined. That is not a rounding error in a \$500 million observatory budget; it is the entire annual operating base for the organizations whose stated mission is advancing human settlement beyond Earth.

Space law and policy is smaller still: roughly \$3 million a year, concentrated overwhelmingly in a single organization, the Secure World Foundation, with the remainder split among a handful of much smaller groups working on orbital debris governance, space resource law, and related questions.

A third, adjacent group of organizations experiments with new forms of governance more broadly — not specifically for space, but relevant to anyone thinking about how a settlement might govern itself. The Seasteading Institute, the Charter Cities Institute, and the Startup Societies Foundation, along with a handful of smaller peer organizations, together account for roughly \$5 million a year. This is a young and thinly capitalized field regardless of its subject matter — new-jurisdiction experimentation on Earth is itself a nonprofit backwater, which is worth knowing before assuming that space governance work will find a large philanthropic base to draw on.

Taken together, these three groups — settlement advocacy, space law, and governance experimentation — represent well under 1 percent of the nonprofit dollars flowing through this entire landscape. The nonprofit sector has built substantial institutions around observing the universe, teaching about it, and running federal space infrastructure. It has built comparatively little around the question of how people would actually live somewhere beyond Earth.

What the year-by-year numbers show

Looking at revenue by year across 2016–2023, the large categories are largely flat in real terms: spaceflight infrastructure organizations hold near \$2 billion a year throughout the period; human health and performance organizations (aerospace medicine and related societies) hold in the low-\$200-million range; education and outreach organizations move between roughly \$65 million and \$130 million with no sustained trend in either direction.

The organizations grouped under local production and life support — the closest year-by-year proxy this dataset offers for settlement-adjacent nonprofit activity — show no discernible growth trend at all. Annual revenue in this group bounces between roughly \$7 million and \$20 million across the eight-year window, with 2016 and 2021 as local high points and 2018–2019 as local lows. There is no steady climb that would suggest a maturing field attracting increasing philanthropic attention; it reads as a small number of organizations whose fortunes rise and fall year to year rather than a sector on a trajectory.

The one category that shows real, if modest, growth is society, law, and governance: from a few hundred thousand dollars a year in 2016–2017 to roughly \$9 million by 2021–2022, before a partial-year decline in 2023. That growth is consistent with a genuinely young field — the organizations named above were mostly founded within the past fifteen years — building out its institutional base from close to nothing.

Readers should not read the sharp drop-off in every category in 2023 and especially 2024 as evidence of a sudden funding collapse. Nonprofits routinely file their Form 990s ten to eighteen months after their fiscal year closes, so the 2023 figures in this dataset are still incomplete and the 2024 figures — often a small fraction of a percent of prior years across every category — reflect only the earliest handful of filers. That pattern is a data-lag artifact of the filing cycle, not a signal about the health of the sector.

A note on the terrestrial evidence base

Separately from all of the above, this census also captured roughly \$346 million a year flowing to organizations that are not aerospace-related at all but that are, or operate, actual closed or intentional communities on Earth: Camphill villages and similar intentional therapeutic communities, Hutterite and other communal societies, community land trusts, historic utopian settlements such as the Shaker villages and the Oneida Community's successor institutions, and cooperative-development organizations that support worker- and community-owned enterprises. This money is counted separately in this report, and deliberately not blended into any space-sector total, because it is not colonization funding in any sense — it supports people living ordinary lives in bounded, often deliberately organized communities today. Its relevance to this report is as evidence, not as a funding stream: these are the organizations that have decades, in some cases centuries, of accumulated experience in how small, bounded human communities actually govern themselves, share resources, and endure — or fail to. A future settlement-governance program has more to learn from that record than from anything currently funded under the space nonprofit banner.

5. The university stream

Universities appear constantly in any account of who funds space settlement research, but the appearance is misleading unless the money is sorted by where it actually originates. Three distinct streams run through university budgets, and a reader who adds up the headline dollar figures without separating them will overstate the case for university-based funding by a wide margin.

Federal dollars wearing university nameplates

The largest sums associated with universities in this field are federal grants administered through a university address, not university money in any meaningful sense. The Translational Research Institute for Space Health (TRISH), a consortium of Baylor College of Medicine, Caltech, and MIT, operates under a NASA cooperative agreement worth up to \$246 million over twelve years. The two NASA Space Technology Research Institutes devoted to habitats — RETHi, led by Purdue with the University of Connecticut and Harvard, and HOME, led by UC Davis with Colorado, Carnegie Mellon, Georgia Tech, Howard, USC, and Texas A&M — each carry \$15 million in NASA funding. The University of Central Florida's Florida Space Institute has drawn roughly \$67 million through NASA channels over its history, alongside state support.

None of this is a criticism of the institutions or the researchers; federally sponsored research is how most university science gets done, in space as in every other field. The point is definitional. If a tally of "university space funding" counts TRISH's \$246 million, the two habitat institutes' \$30 million combined, and UCF's federal total as though they represented independent, university-generated resources, the same federal dollar gets counted once as a NASA grant and again as a university commitment. It is one dollar, moving through a university's accounting system on its way from the federal government to a research team. Readers trying to gauge how much non-federal capacity exists in this field should set these figures aside from what follows.

Money that is genuinely internal

A smaller but real category consists of funds that originate inside the university itself — endowments, philanthropic gifts restricted to the institution, or tuition revenue — rather than passing through from an external grantor. The clearest example is Caltech's Space Solar Power Project, which was built on a

philanthropic gift from the Bren family exceeding \$100 million, disclosed in 2021 after nearly a decade of work; it stands as the largest single philanthropic gift to a university for space research identified in this survey, and it produced a working orbital power-transmission demonstration (MAPLE) in 2023. Duke committed \$2 million in internal funds to launch its SPACE Initiative in September 2025. Arizona State University's Interplanetary Initiative, running since 2017, works differently: it deploys internal seed capital across university units and reports a return on that seed investment of roughly 5.7 times over seven years in follow-on external funding. Notably, part of that internally seeded portfolio includes Port of Mars, a social-science game exploring resource-governance dilemmas among the small population of a closed space community — a rare instance of a U.S. university funding settlement-society research with its own money rather than a grantor's.

Penn State's SETI program (PSETI) is a case worth reading closely, because the university is deliberately building a private endowment for the specific reason that federal funding for the search for extraterrestrial intelligence does not exist. That is the same structural logic this report applies more broadly: where federal grantmaking is thin, the institutions that want the work done have to build their own capital base. The University of Houston's Sasakawa International Center for Space Architecture (SICSA), which offers the only master's degree in space architecture in the country, operates on an endowment established through a gift from the Sasakawa Foundation combined with tuition revenue. Tuition itself functions as a funding source in several places: the Colorado School of Mines runs the first graduate program in space resources (certificate through Ph.D.), and both the University of Nebraska and the University of Mississippi support space-law LL.M. programs — Nebraska's, established in 2008, was the first in the country and has graduated more than ninety students — funded by student tuition rather than research grants.

A third stream: state government money

A category absent from most discussions of space funding, and distinct from both federal grants and university philanthropy, is direct state government investment. Texas has committed \$200 million (part of a \$350 million package) through the Texas Space Commission to open the Texas A&M Space Institute, a 400,000-square-foot facility at NASA's Exploration Park scheduled to open in fall 2026. The same commission has committed \$14.2 million to Rice University, part of a \$22.3 million package that also includes \$8.1 million from the Space Force, to fund two new research centers including work on in-situ resource utilization and regolith 3D printing. This is economic-development spending by a state government, not a federal research grant and not university philanthropy, and it appears to be a growing category as states compete for space-industry jobs and facilities.

What changed by 2026

Three items affect how a 2026 reader should interpret the landscape. The Space Analog for the Moon and Mars (SAM), housed at Biosphere 2, concluded its primary campaign in May 2026 and is repositioning to serve external users going forward. HI-SEAS, the Hawai'i analog habitat once run jointly by the University of Hawai'i and NASA, has been privately operated by the International MoonBase Alliance since 2018 and is no longer a university program in any current sense. MIT's Human Systems Laboratory, dating to 1962, is in transition and winding down, though its site has been preserved.

Governance-adjacent work, briefly

Two university programs work on questions adjacent to how a settlement would govern itself, though neither addresses it directly, and a later chapter on gaps treats both in full. Indiana University's Ostrom Workshop runs a Space Governance Program applying commons and polycentric-governance frameworks to space, but its focus is largely orbital and interstate — how nations and firms share orbital resources — rather than how residents would govern a closed settlement. The University of Amsterdam's LUNARGOV project, a European effort, asks constitutional questions about a human community on the Moon, including membership and decision-making authority, through ethnographic study of astronaut selection and training; it is the most direct hit on the intra-settlement governance

question found anywhere in this survey, but it is small, still assembling its funding as of mid-2026 (no dedicated grant could be verified), and outside the U.S. philanthropic and research-funding system this report otherwise covers.

6. The corporate and founder stream

The finding here is a negative one: as of 2026, no company or founder associated with the space industry runs an ongoing grant program for settlement or colonization research. This is worth stating plainly rather than working around, because the companies most associated with the idea of settling other worlds in the public imagination are also the ones spending the least, in grant form, on the research question of how to do it.

SpaceX has no grant program, fellowship, or research-funding vehicle of any kind, and no charitable foundation. What it offers instead is a research-flight portal, through which researchers can propose experiments to fly aboard its vehicles — more than a thousand have flown on Dragon since 2012 — but the researcher brings the funding; SpaceX is not the funder, it is the carrier. The company's own published contribution to the public literature on settlement consists of Elon Musk's Mars-architecture papers from 2017 and 2018 and associated Starship presentations; the more sustained academic literature on the feasibility of that architecture is written by outside researchers analyzing SpaceX's public statements, not by the company itself.

The Musk Foundation lists "human space exploration research and advocacy" among its stated charitable purposes and holds roughly \$9 billion in assets, but its grantmaking bears almost no relationship to that stated purpose. In 2024 it made \$474.3 million in grants, of which \$470 million went to a single Texas education entity; its widely noted XPRIZE partnership, worth \$100 million, funded carbon removal research, not space. The foundation states an intention it does not fund.

Blue Origin's philanthropic vehicle, Club for the Future, did make one substantial commitment to the space-nonprofit sector: in 2021, funded by proceeds from auctioning a seat on a New Shepard flight, it distributed \$19 million as nineteen unrestricted \$1 million gifts to space-advocacy and education organizations, including the Mars Society, the Planetary Society, the National Space Society, and Students for the Exploration and Development of Space. It was real money and it went to real organizations in the field, but it was a one-time event tied to a single auction, not a recurring grant round, and none of it was research funding — the recipients were advocacy and education groups, not research institutions. Since that round, Club for the Future's disbursements have settled into a much smaller annual pattern, on the order of \$400,000 to \$450,000 a year, directed toward STEM outreach activities such as its Postcards to Space program and K-12 curriculum partnerships.

Elsewhere in the founder and company landscape, the pattern holds. Breakthrough Starshot, Yuri Milner's interstellar-probe initiative announced with a \$100 million commitment, is effectively dormant, having spent an estimated \$4.5 million of that sum; its sibling program, Breakthrough Listen, remains active but is a search-for-signals effort, not settlement research. Robert Bigelow, after shutting down Bigelow Aerospace in 2020, redirected his grantmaking entirely into consciousness and afterlife studies and has left the space field. Jared Isaacman's private spaceflights, including the Inspiration4 and Polaris missions, have raised substantial sums — more than \$250 million, with roughly \$125 million from Isaacman personally — but the beneficiary is St. Jude Children's Research Hospital; the flights fund pediatric cancer treatment, not space research. Isaacman himself left the private sector to become NASA Administrator, sworn in December 18, 2025. Among the newer generation of space companies, Sierra Space, Rocket Lab, Axiom Space, Intuitive Machines, and Astra show no evidence of any foundation, grant program, or published settlement research.

One further note belongs here for readers doing their own searching: a website calling itself spacexgrant.org is not affiliated with SpaceX and matches known patterns of brand-impersonation scams; it should not be treated as a legitimate funding source or cited as one.

Read together, this is not simply an absence. The companies most active in developing settlement-relevant technology — SpaceX and Blue Origin above all — are spending heavily on the underlying engineering, but they are doing it as ordinary corporate research and development, funded from equity and revenue and folded into their business operations rather than distributed as grants to outside researchers. That is a real funding stream for settlement-relevant work, arguably the largest one in dollar terms, and it deserves to be named as such rather than treated as absent simply because it produces no grant announcements. It is also, for that same reason, largely invisible to the kind of public filings and grant databases this report otherwise draws on: a company's internal R&D budget is not disclosed the way a foundation's 990 filing is, and no reliable public figure exists for how much SpaceX or Blue Origin spends internally on settlement-relevant research. The corporate stream is real; it is simply not a grants stream, and it is not one this report — or any report relying on public philanthropic data — can measure.

7. The map: where the money goes

The matrix in Table 1 and Figure 1 is the report's core: six settlement functions crossed with the measurable funding sources. Read along a row to see who funds a function; read down a column to see a funder's shape; do not sum across.

Three features stand out. First, the top rows dwarf the bottom rows. Transport and spaceflight infrastructure plus destination science absorb the overwhelming share of every measurable stream — roughly \$3.0 billion a year of nonprofit-sector revenue (dominated by federally funded R&D operators and observatory consortia) and well over a billion dollars of the decade's matched federal awards. Second, the middle rows — local production and life support, human health and performance — are where settlement-specific capability is actually being built, at meaningful but far smaller scale: NASA's ISRU and construction programs, DARPA's manufacturing and microbial-food work, and NSF's regolith science put roughly \$216 million of matched federal awards into the local-production row, against a strikingly small \$15 million a year of nonprofit revenue; the health row's larger nonprofit total (about \$348 million a year in this edition, after a follow-up scan added the mountain-club and sea-education layer of the expedition-training field) is dominated by wilderness-expedition and diving-medicine organizations whose relevance is enabling rather than settlement-specific. Third, the society, law and governance row is nearly empty in every column: about \$10 million a year of nonprofit revenue — one operating foundation working on space sustainability, a handful of small organizations, and, new in this edition, a young digital-community-governance cluster whose thirteen organizations bring roughly \$3 million — against \$2 million of NASA awards across an entire decade, zero DARPA, zero NSF. The grantee line items added in this edition sharpen the row further: identifiable external grant funding of the space-governance and new-jurisdiction organizations totals about \$1.8 million across recent filings, flowing through just three funders — a donor-advised regrantor (Founders Pledge), a movement regrantor (Atlas Network), and one academic center (Mercatus). Education and outreach, by contrast, sustains a healthy ~\$108 million a year — the field invests far more in inspiring future settlers than in the rules those settlers will live under.

The trend picture (Figure 2) shows the nonprofit stream growing modestly and steadily across the decade in the science and education functions, with the settlement-specific functions flat at small scale. The recipient picture (Figure 3) shows where federal settlement-relevant money lands: universities take the majority of NSF's and a substantial share of NASA's matched awards, while DARPA's flow mostly to companies — a reminder that "university space research" and "federal space research" are largely the same dollars at different stations on their journey.

Settlement function	Nonprofits (annualized)	NASA (FY17–26)	DARPA (FY17–26)	NSF (2016–26)
Transport & spaceflight infrastructure	\$2.30B	0	\$396.6M	0
Destination science & planetary defense	\$658.3M	\$1.01B	0	\$36.4M
Local production & life support	\$15.1M	\$142.1M	\$26.0M	\$47.6M

Settlement function	Nonprofits (annualized)	NASA (FY17–26)	DARPA (FY17–26)	NSF (2016–26)
Human health & performance	\$347.8M	\$17.0M	\$38.7M	0
Society, law & governance	\$10.0M	\$2.0M	0	0
Education, outreach & heritage	\$108.2M	0	0	0
Adjacent research (grade 1)	\$774.3M	0	\$570k	\$11.6M
Terrestrial evidence base (grade 0)	\$345.7M	0	0	\$913k

Table 1. Settlement functions × measurable sources. Columns are lenses, not pots: they must not be summed (Chapter 2). Nonprofit column annualized; federal columns are decade totals; all figures are floors.

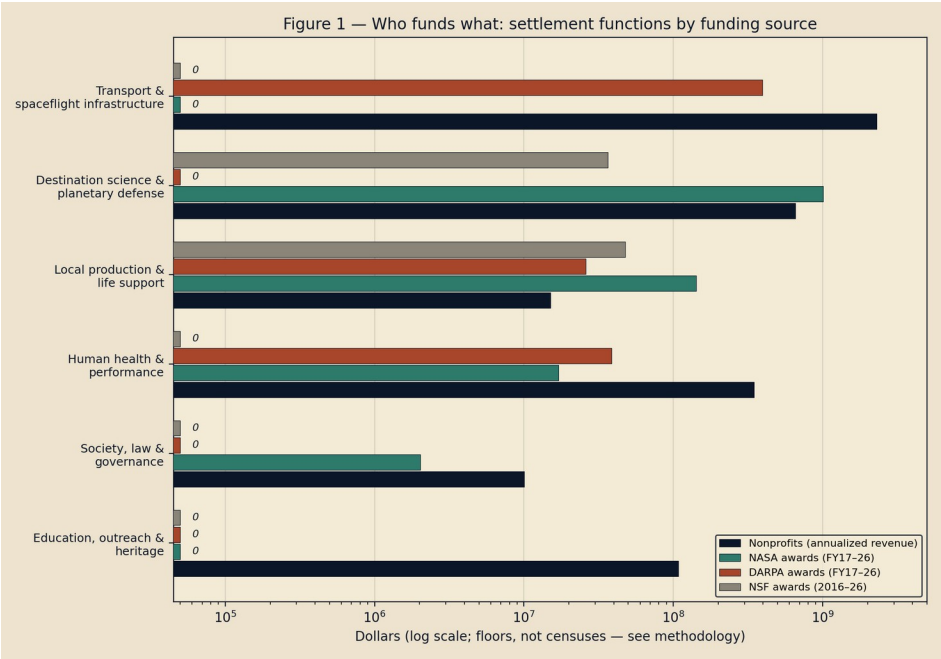


Figure 1. Who funds what, by settlement function and source (log scale; “0” marks true zeros).

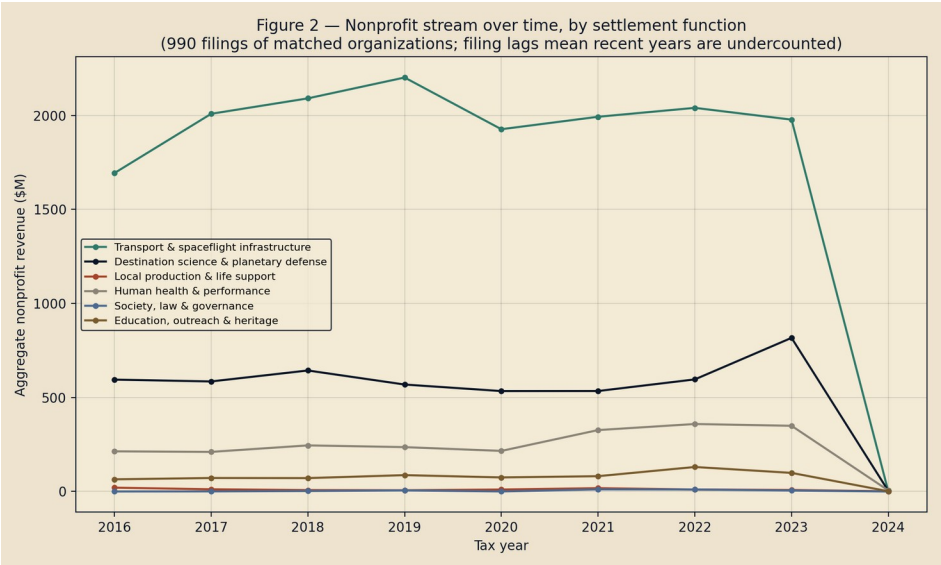


Figure 2. The nonprofit stream over time, by function. Recent years undercount due to filing lag.

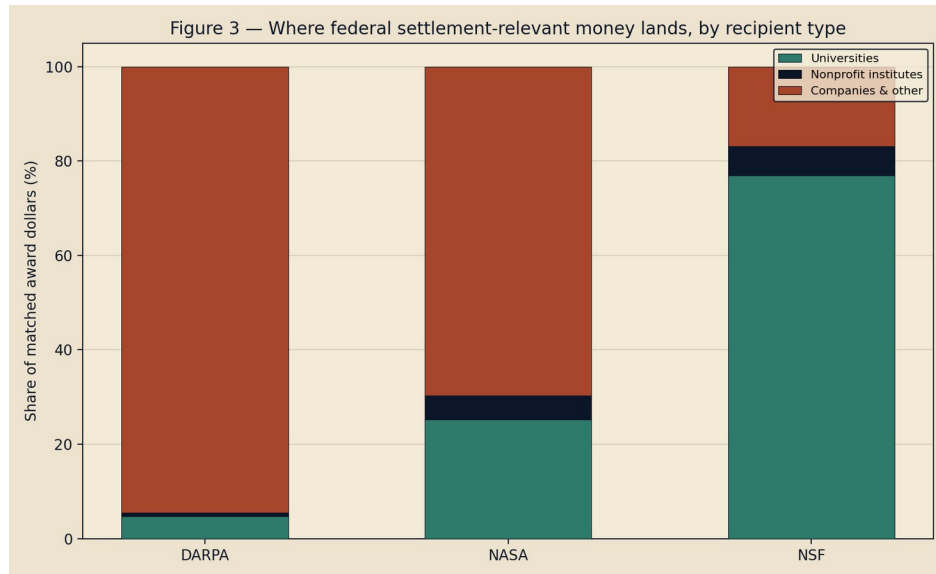


Figure 3. Where matched federal award dollars land, by recipient type.

8. Where the money is not: funding gaps

Every field has its complaint that "nobody funds" some worthy topic, and most such claims do not survive contact with the records. Before presenting the gaps this report found, it is worth naming the three different things a funding gap can be, because they call for different responses and are too often conflated.

The first is true neglect: no one funds the work anywhere, under any label, through any channel. This is the strongest claim and the hardest to establish, because absence of evidence must be chased through every register where the money could hide.

The second is registry-invisible work: research that is funded, but through mechanisms that never appear in public filings. There are several such mechanisms, and they matter here. Universities pay for research out of endowment income, tuition, and state appropriations, none of which shows up in grant databases. Religious communities are exempt from filing the disclosure forms that other nonprofits must submit, so a communal society studying its own governance would be invisible to us. Federal agencies do much of their work intramurally, with civil-servant labor that never becomes a countable award. And corporations fund internal research and development that no public instrument can measure at all. This second edition adds two more mechanisms found the hard way. Money moved through donor-advised funds is attributed to the fund sponsor, not the original donor or the ultimate grantee — one frontier-science foundation's filings show \$81.7 million of an \$83.3 million grant budget flowing into two donor-advised-fund sponsors, at which point the trail simply ends. And a field whose core institutions sit outside the United States leaves no trace in U.S. filings at all: kibbutz research, the richest scholarly record of collective settlements anywhere, is carried entirely by Israeli institutes and so appears in this census as an empty set. A gap claim that ignores these channels is not a finding; it is an artifact of where the searcher looked.

The third is recently vacated ground: work that was funded until recently and may not be again. This category is not hypothetical. The National Science Foundation's social-science directorate faced a proposed dissolution in the FY2027 budget cycle. Whatever the outcome, the episode is a reminder that some gaps are not old features of the landscape but new ones in the process of forming — and that a map drawn this year may understate the gaps of the next.

With those distinctions in hand, here is what we found.

The governance gap

The largest gap this report identifies is this: there is no dedicated funding stream, anywhere we could see, for research on how a space settlement would govern itself internally — who owns what, what serves as money, how rules are made and enforced as a community grows from a crew into a town.

We checked this claim across seven instruments: the public filings of American nonprofits; the grant flows of foundations; the program inventories of NASA, the European Space Agency, and DARPA; keyword probes of the full text of federal awards; the National Science Foundation's award database; an inventory of university centers and institutes; and — new in this second edition — the actual grantee line items from the IRS e-file record for 63 targeted funders. All seven came back empty. The keyword probes of NASA and DARPA award text — phrases such as "self-governance," "norm emergence," and "institutional emergence" — returned nothing but a single false positive, a software-verification contract in which "self-governance" referred to autonomous computer systems.

The NSF result deserves a sentence of its own, because it looked promising at first. The foundation has made nineteen awards matching "self-governance" since 2016 — every one of them terrestrial: tribal constitutions, Inuit fisheries co-management, the governance of marine commons. This body of work is the intellectual feeder field for the question we care about; it is where the theory and the methods live. It has simply never been pointed at space.

Precision requires stating the qualified version of the claim, because the gap is not perfectly empty — it is nearly empty, which is different. Three funded efforts come close. Arizona State University runs Port of Mars, a social-science game about shared-resource dilemmas in closed space communities; it is real experimental work, but small, and seeded from the university's own funds rather than any external stream. Indiana University's Ostrom Workshop — the institutional home of commons scholarship — operates a space-governance program; it brings exactly the right toolkit, but aims it at orbital debris, spectrum, and questions between states, not at life inside a habitat. And the University of Amsterdam's LUNARGOV project — active, but with no dedicated grant we could verify as of mid-2026 — asks directly how a lunar community would be constituted — membership, settler rights, decision autonomy — through ethnographic study of astronaut selection and training. None of these is a funding stream. Together they amount to perhaps a handful of researchers. A graduate student who wanted to spend a career on the internal institutions of settlements would find no program, no fellowship, and no grant line to apply to.

This second edition adds one genuine near-neighbor to the count rather than the gap. A follow-up scan promoted digital-community governance — the organizations designing and testing governance institutions for online communities and decentralized platforms — to its own topic cluster: thirteen organizations, roughly \$3 million a year, the youngest cluster in the census. That work is real institutional design, fielded on living communities, and it is the closest funded activity to the settlement-governance question now visible anywhere in the data. But its communities are membership networks people can leave with a click. The defining condition of a settlement — a bounded population that cannot exit — is exactly the condition digital governance does not face, so the row's core question remains unbought: the census now shows who is designing institutions for communities of the willing, and still no one funding the study of institutions for communities of the confined.

The near-misses inside the agencies tell the same story from the other side. NASA-funded crews at the HI-SEAS habitat in Hawaii developed their own emergent norms and idiosyncratic group-living policies, and researchers published descriptions of them — but as an incidental by-product of psychology studies, not as the object of inquiry, and the funding ended years ago. NASA's HERA facility runs a task on negotiating crew autonomy — but that is about the crew's authority relative to mission control, not about how the crew orders life among themselves. DARPA's Next Generation Social Science program funded serious experimental work on how collective identity forms — how groups unify or fragment — but never on how groups generate property, money, or enforcement. Each of these sits just to one side of the question. None occupies it.

Space law and policy: thinner than readers may assume

Space law sounds like an established field, and as a teaching subject it is: several American law schools offer degrees in it, and have for decades. As a funded research field it is remarkably thin. NASA's award databases show about \$2 million — total, across roughly a decade — matching space law, space policy, and space governance, spread over five awards. The NSF shows zero awards on those terms since 2016. On the philanthropic side, one operating foundation, the Secure World Foundation, does most of the work in-house, and around it sits a group of eight small nonprofits with combined revenues of roughly \$3 million a year. The university centers in this area are funded mainly to educate lawyers, not to produce research. The entire American research enterprise in space law and policy, outside one foundation's own staff, would fit inside a modest academic department.

New-polity design: think tanks without laboratories

A separate small cluster of organizations works on designing new political jurisdictions — charter cities, startup societies, novel governance zones. We count eight of them, with combined revenues of about \$5 million a year. What is notable is not their size but their shape: all of them are think tanks. They write frameworks, model charters, and advocacy papers. None operates an empirical wing — no field studies, no experiments, no systematic observation of how new communities actually develop rules. The people most interested in designing polities from scratch have, so far, no laboratory.

The demand side: who would actually go?

Every funding stream this report traces points at supply: getting to space, surviving there, building there. We found no funded research on demand — on who would actually move to a settlement, in what numbers, at what threshold of safety, comfort, and opportunity. This is a standard question in migration research on Earth, with mature methods behind it. For space settlement it appears never to have been asked with money attached. Any settlement plan carries assumptions about willing settlers; at present, all such assumptions are unexamined.

The instrumentation gap

The last gap is the strangest, because it is a gap inside a strength. NASA operates the best long-duration closed-habitat experiments in existence. In the CHAPEA program, four people lived 378 days inside a sealed simulated Mars habitat, and a second year-long mission is underway. These missions are instrumented in depth for health and performance: sleep, cognition, nutrition, team function. They are not instrumented at all for institutions. Nobody codes how the crew allocates shared resources, how informal rules harden into expectations, how disputes get settled, what happens when they don't. The observation platform exists, is funded, and is running; the social-science instrumentation that would turn it into evidence about settlement governance has never been attached. This may be the cheapest gap on this list to close, because the expensive part is already built.

Gaps we checked and rejected

A method that only ever finds gaps should not be trusted, so we report the candidate gaps that our checks rejected.

Space food beyond bare survival: funded. NASA's Deep Space Food Challenge ran through 2024, and a successor round — Mars to Table — opened in 2026, both aimed at palatable, sustainable food systems rather than mere caloric survival.

Making use of local resources on the Moon and Mars — extracting water, oxygen, and building materials: well funded. Our probes matched roughly \$142 million in NASA awards on these topics, alongside DARPA manufacturing programs and multiple NASA prize competitions of several million dollars each.

The psychology of isolated and confined crews: funded, and for decades. NASA's Human Research Program supports it directly; the European Space Agency sponsors research at the Concordia station

in Antarctica, where a recent study tracked the social dynamics of a twelve-person crew across a ten-month winter.

In each case the same instruments that returned empty on settlement governance returned full on these topics. That is what gives us some confidence the emptiness is real: the net catches fish where there are fish.

9. What this report is, and is not

This report is a map of funding, built from public records, and it inherits the limits of those records. It is not a judgment on the quality of anyone's research, not a critique of any agency's priorities, and not a claim that the funded topics are less important than the unfunded ones. It says only where money does and does not flow, as best the public record shows. Readers should know what each instrument can and cannot see.

Nonprofit filings show an organization's revenues and expenses, but we find organizations by name and keyword, and a group doing relevant work under an unrelated name can slip past. Keyword probes of federal award text catch only the language agencies and grantees actually used; work described in other vocabulary is invisible to them. The European Space Agency publishes no award-level data at all, so our European layer rests on program inventories assembled from public announcements — a coarser instrument, and one where a small study among hundreds of briefly summarized activities could escape notice. Corporate internal research is unmeasurable from outside; when we report that SpaceX and Blue Origin fund no external settlement research, we are saying nothing about what they spend inside their own walls, which may be considerable. University internal budgets are similarly opaque: we can see that Arizona State seeded a settlement-governance game from its own funds, but not what it cost.

For all these reasons, every total in this report is a floor, not a ceiling. Where we report \$3 million a year across eight space-law nonprofits, the true figure for the field is at least that, and could be somewhat more. What floors cannot do is hide a mountain. If a major dedicated funding stream for settlement governance existed, it would have had to evade six independent instruments simultaneously. We judge that unlikely; we cannot call it impossible, and the previous chapter names the specific channels — religious communities, intramural agency work, corporate labs — where residual work could hide.

One more thing belongs in plain view. The Inner Planets Terraforming Foundation conducts research inside the largest gap this report identifies. We study how settlements would govern themselves internally; a report finding that no one funds such work is, among other things, a report that our own research occupies neglected ground. Readers are entitled to weigh that. We would put it this way: our interest in the question is why we searched carefully enough to find the gap — and it is also exactly why readers should check our work rather than take it on faith. To make that possible, the full dataset and the code that produced every figure in this report are published alongside it. Every count, every dollar figure, every empty search can be re-run, and anyone who disagrees with a classification can trace it back to the filing or award record it came from.

Finally, an invitati

10. What would change this picture

This census is a snapshot of instruments that will all drift. Five developments would materially revise it, and a reader in 2027 or 2030 should check them. Whether NSF's social-science directorate survives in its current form — a proposed dissolution was pending as this report closed — determines whether the governance row's zero in the NSF column is temporary or structural. Whether NASA's analog habitats begin collecting institutional data, or sharing behavioral data for institutional re-analysis, would change the instrumentation gap at nearly zero cost. Whether the new state-government stream (Texas's \$200 million university space institute is the largest example) spreads to other states would add a

measurable fifth public column. Whether any corporate actor converts internal settlement R&D into extramural research funding would open the stream that is currently, verifiably, closed. And whether the handful of governance-adjacent efforts — a game at Arizona State, a program at Indiana's Ostrom Workshop, an ethnographic project in Amsterdam — grow into funded streams is the single development this Foundation, for obvious reasons, most hopes to see and will not be a neutral witness to.

Corrections are invited. Every claim in this report is checkable against the published data and code, and the authors would rather be corrected than comfortable.

Appendix — Changes in the second edition

The first edition was published July 12, 2026; this second edition, later the same day, merges the results of a follow-up study. Changes: (1) a seventh instrument — grantee-level line items from IRS e-file XML for 63 targeted funders — quantifies the funding-flow reading (Chapters 5 and 7); (2) two topics were promoted on their own evidence: digital-community governance (13 organizations, new cluster) and expedition training (73 organizations added, split from the analog-habitat cluster), raising the census from 2,479 to 2,562 organizations and revising the health and governance rows of Table 1; (3) two registry-invisibility mechanisms were added: donor-advised-fund pass-through on the funder side, and non-U.S. domicile of a field's core institutions; (4) the governance-gap chapter gains the digital-governance near-neighbor analysis. The companion data release advances to v1.1 with a changelog; first-edition files are preserved in the release archive. No first-edition finding was contradicted; the follow-up sharpened each one it touched.

Appendix — Data release and topic key

Every number in this report can be recomputed from the companion data release (nine CSV files with a manifest) and the analysis code, which document the topic taxonomy, the anchor lists, the veto filters, the relevance-grade assignments, and the exact API queries used. The table below keys the topic-cluster codes used in the data files to their plain-language names, settlement functions, and relevance grades.

Code	Topic	Function	Grade
G1	Historic utopian preservation	Terrestrial analogue evidence base	0
G10a	G10a	Human health & performance	2
G10b	G10b	Human health & performance	2
G11	Disaster & humanitarian governance	Society, law & governance	1
G12	Social-science research infrastructure	Society, law & governance	1
G13	G13	Society, law & governance	2
G2	Living communal societies	Terrestrial analogue evidence base	0
G3	Intentional communities & ecovillages	Terrestrial analogue evidence base	0
G4	Therapeutic communities	Terrestrial analogue evidence base	0
G5	Cooperative movement	Terrestrial analogue evidence base	0
G6	Commons & institutional economics	Society, law & governance	1
G7	New-jurisdiction experiments	Society, law & governance	3
G8	Civic governance innovation	Society, law & governance	1
G9	Community land trusts	Terrestrial analogue evidence base	0
S1	Astronomy clubs & citizen science	Education, outreach & heritage	1
S10	Space medicine & human performance	Human health & performance	2
S11	Advanced propulsion	Transport & spaceflight infrastructure	2

Code	Topic	Function	Grade
S12	Dark-sky & space culture	Education, outreach & heritage	1
S2	Observatories & science institutes	Destination science & planetary defense	2
S3	Planetariums, museums & heritage	Education, outreach & heritage	1
S4	Planetary science, defense & astrobiology	Destination science & planetary defense	2
S5	Settlement development & ISRU	Local production & life support	3
S6	Space law & policy	Society, law & governance	3
S7	Space education & workforce	Education, outreach & heritage	2
S8	Rocketry & small satellites	Education, outreach & heritage	1
S9	Spaceflight R&D operators	Transport & spaceflight infrastructure	2
X1	Reference set (excluded from census)	Reference set (excluded from census)	—

Table A1. Topic-cluster key. Grades: 3 direct, 2 enabling, 1 adjacent, 0 evidence base; the reference set is excluded from all census totals.