JONATHAN STARR

Burlington, Vermont · jon@scios.tech · jstarr.science · linkedin.com/in/jonathan-starr-b04032284

PROFILE

I am a field builder in research infrastructure, modular science, and distributed systems. I map who is working on what and where the gaps are, bring together the people across the field, from researchers, librarians, and publishers to builders, funders, and policy makers, and build the systems they share. I have founded three 501(c)(3) nonprofits (SciOS, the Open Source Endowment, and The Science Commons Initiative), designed and run grant programs, and reviewed grants for the U.S. Department of Energy and the National Science Foundation. I have also led AI-assisted development of open infrastructure for the scientific record, including a system for publishing, signing, endorsing, and disputing questions, claims, and evidence (RRGI); a researcher-run network that stores, describes, and checks research data (IOSP Node Network); verified mass-scale distributed computing (Lettuce Compute); tools that assess and credit the contributions recorded in RRGI; and a knowledge graph of research outputs and software (PRSM). Each is an early component of, or a test for, one shared record. My current focus is the Minimum Viable Scientific Record, a coordinated program to write one specification for a linked, checkable record of research and to connect my tools and the rest of the field's tools to that record.

POSITIONS

Co-Director, SciOS — Dec 2023–present

Co-founded this 501(c)(3) nonprofit for open-science infrastructure; lead development of GREP, RRGI, PRSM, SciOS Compute, and Citey, the PICoding course, and SciOS's workshops and convenings.

Founding Executive Director, Open Source Endowment — Feb 2024–present

Built an evergreen 501(c)(3) endowment whose investment returns fund open source software; wrote its IRS Form 1023 application and governance charter, and designed its grant program. $750,000+ committed.

Instantiating Steward, Institute of Open Science Practices (IOSP) — 2024–present

Co-founded and lead a yearly gathering where researchers, builders, and funders build and test open scientific infrastructure together.

Program Manager, Open Source Science Initiative, NumFOCUS — Jul 2023–Jul 2025

Grew the initiative's international community and led the Map of Open Source Science.

Managing Consultant, DeSci Labs — Oct 2022–present

Advise leadership on organizational structure, strategy, and the technical roadmap for decentralized research-object infrastructure.

Founder and President, The Science Commons Initiative — Jan 2022–Apr 2024

Citizen-science 501(c)(3) through which students contributed computing to active research.

President, LBRY Foundation — Jan 2020–Dec 2022

Designed and led three quadratic funding rounds that distributed about $1 million in grants.

Core Contributor, Gridcoin — 2017–present

Co-authored the 2018, 2019, and 2023 whitepapers and proposed four of the reward mechanisms in today's protocol (the constant block reward, manual reward claims, the split of claim fees to the Gridcoin Foundation, and the treasury sidestake). Now simulating a third version of Gridcoin's incentive design, my own unpublished proposal, which coordinates computing, research, funding, and storage contributors.

Contributor, Gridcoin — 2013–2017

Mined Gridcoin from its launch day in October 2013 and contributed anonymously until 2017.

Owner, Carriage House Enterprises — 2011–present

Founded and run this property management business.

PROGRAM IN DEVELOPMENT

The Minimum Viable Scientific Record — 2026–present

The creators, funders, and users of existing infrastructure first write one specification, with tests, for a record that holds the process of research: questions, claims, evidence, checks, attribution, reuse terms, and the data, code, and methods behind each claim. The program then funds existing projects to adopt the specification and new components to fill the gaps. Proposed in a 2026 essay based on an analysis of 153 open science documents drawn from more than 2,000.

AI IN SCIENCE: SYSTEMS AND INFRASTRUCTURE

RRGI: Resilient Research Graph Infrastructure, architect and lead builder 2026–present
A system for publishing, signing, endorsing, and disputing questions, claims, and evidence on the AT Protocol and IPFS, implementing the MIRA schema. Anyone can endorse or dispute any record, including machine-generated links; standing comes from those signed stances.

IOSP Node Network, grant lead, IPFS Foundation Implementations Fund 2026
Researcher-owned, cloud-free network that stores, describes, and checks research data, running since July 2026. Its indexer also generates RO-Crate compliant objects for all data stored on the network.

Lettuce Compute and SciOS Compute, creator 2026–present
Open infrastructure for verified, mass-scale distributed computing, on which GREP runs. Each project sets how its results are checked, and credit decisions are signed records, so anyone can check that a signed record has not been altered afterward.

IOSP Assessment App, builder 2026
Tools that read the research graph and score each research question, protocol, and researcher by its attributes and its links to other records; each published result lists the exact records it scored. Used by participant groups at IOSP 2026.

GREP: The Great Research Extraction Project, lead builder 2026
AI translation of the scientific literature into structured research objects, run on volunteer computing. Its first campaign extracts software mentions from papers: F1 0.83–0.89 on three public benchmarks; 2.2% hallucination rate.

PRSM, builder 2025–present
Built its first version, a knowledge graph of research outputs, software, and their dependencies (21.8 million entities, 78 million relationships). Began rebuilding PRSM from the ground up in November 2026.

MIRA: Modular Interoperable Research Attribution, contributor 2026–present
Draft open schema that makes questions, claims, evidence, studies, and protocols separately citable and attributed, so conclusions drawn by people or AI agents trace back to their evidence.

Agent Teams and the Software Factory, builder 2025–present
Multi-agent AI software-development systems that build SciOS's tools from detailed specifications.

Citey, builder 2026
Software-citation toolkit (browser extension, Citation File Format and CodeMeta generators), built at the 2026 Software Citation Workshop.

SELECTED WRITING (NOT PEER-REVIEWED)

- Starr, J. (2026). *The Minimum Viable Scientific Record: Operationalizing 30 Years of Consensus.* SciOS. Argues that funders should require a linked, verifiable record of every grant's work, made urgent by AI's role as a producer and user of research; based on an AI-assisted analysis of 153 policy documents.
- Starr, J. (2026). *The Core-Satellite Model: A Judgement-Based Commons Framework for Open Source and Open Science.* SciOS. Proposes that accountable expert groups publish machine-readable signals of which AI models, tools, and evaluations their field trusts, and how AI-generated work is marked and checked.
- Starr, J. (2026). *Resilient Data Futures: A Case for Resilient Research Data Infrastructure.* SciOS. Whitepaper setting out a four-tier resilience framework for research data, published as a MIRA graph.

CONVENING

IOSP 2027 Fall 2027 (planned)
The next yearly IOSP gathering.

IOSP + ATScience, at AtmosphereConf, the Netherlands, co-organizer with Cosmik Apr 2027 (planned)
Working meeting on building shared identity, data storage, verification, and provenance for science on the AT Protocol.

IOSP 2026, Leiden, with the GO FAIR Foundation Oct 2026
Four days: two days building a working open-science stack (Store, Share, Assess, Fund), a community day, and a theory-of-change day; organized its data-node, modular science, assessment, and funding workshops.

Open source funding infrastructure working session, New York Jun 2026
Convened funders, fiscal sponsors, and stewards on the Core-Satellite model, alongside UN Open Source Week.

MIRA Kickoff, Dublin, Ireland, co-organizer with Discourse Graphs Jun 2026
Four-day design workshop, funded by The Navigation Fund, that aligned groups building tools for claims and evidence on a shared schema; produced six prototypes and a tested draft schema.

DeSci Boston, co-host with AuraSci Sep 2025
Gathering of scientists, patients, pharmaceutical companies, funders, and technologists on how science is done and shared.

Resilient Data Futures working group 2025–present
Monthly working group of research software engineers, formed at a US-RSE 2025 workshop on keeping research data available through funding cuts.

IOSP 2025, Denver Museum of Nature and Science Feb 2025
Inaugural gathering of hands-on workshops and coworking on open scientific infrastructure.

Discourse Graph DiscoTech, New York, with Fractal Tech Hub Nov 2024
Hackathon on making research collaborative and composable with discourse graphs.

US-RSE 2024 workshop, Albuquerque, with NumFOCUS Oct 2024
Workshop on the Map of Open Source Science, a composable map of open source science.

B[OS]TON, MIT Media Lab, co-host Oct 2024
Boston gathering on open and decentralized science.

PyData Vermont, Burlington Jul 2024
Regional conference for the Python data and science community.

DeSci Summit at ETHDenver 2024, lead organizer Feb 2024
Community-organized events on decentralized science held from 23 February to 1 March 2024.

SciOS Workshops, at the DeSci Summit, Denver, host Feb 2024
Protocol Labs, DeSci Labs, and the track leads co-organized four days of workshops from 26 to 29 February 2024.

DeSci at ETHDenver 2023, lead organizer 2023
Decentralized-science events held during ETHDenver.

Teaching

PICoding: AI-Agent Workflows for Researchers, creator and lead instructor 2026
Four-week intensive in which researchers build AI-agent workflows from their own data; two cohorts completed.

Grant Review

- Reviewer, U.S. Department of Energy, via ORISE (CORSA, PESO, S4PST, STEP), 2025
- Reviewer, U.S. National Science Foundation, Pathways to Enable Open-Source Ecosystems (POSE), 2024
- Reviewer, Digital Infrastructure Insights Fund, 2023–2024

Invited Talks and Presentations

- "What Happens When You Connect Every PID You Can Find, and What It Teaches Us About the Scientific Record," PIDfest, Leiden, October 2026
- "The Future of Science Depends on Open Source Engineers," All Things Open, 2026
- "Is Open Source Dying?," joint session with Nick Vidal, All Things Open, 2026
- Keynote, U.S. Department of Energy Open-Source Software Summit, 2026
- "Funding Open Source as a Public Good," OSCON, 2026
- "From Illegible to Investable: Tooling the Digital Commons for the Coming Decades," IRSC, 2026; also chaired the session "Improving research software"
- "Break this stack: a sovereign composable scientific record on ATProto and IPFS," DWeb Camp, 2026
- "A Seat at the Table: The Open Source Endowment, a Live Experiment in Community-Owned Funding," DWeb Camp, 2026
- Guest lecture on PRSM, Information School, University of Wisconsin–Madison, 2026
- "One Year Later: Building the Open Source Endowment," OFA Symposium, 2025
- "Why Open Source Needs an Endowment," All Things Open, 2025
- The Map of Open Source Science, JuliaCon, 2025
- "Building Bridges Between Researchers, Technologists, and Infrastructure" (Open Research track) and "Bridging the Gap: Regional OSPO Networks" (Community track), FOSDEM, 2025
- "Mentorship as an On-ramp to Open Source," panel, Open Source Summit North America and FOSSY, 2024
- "Mapping Open Source Science," PyData Vermont, 2024
- "The Future of Science," keynote, Wolfram ChainScience, 2023