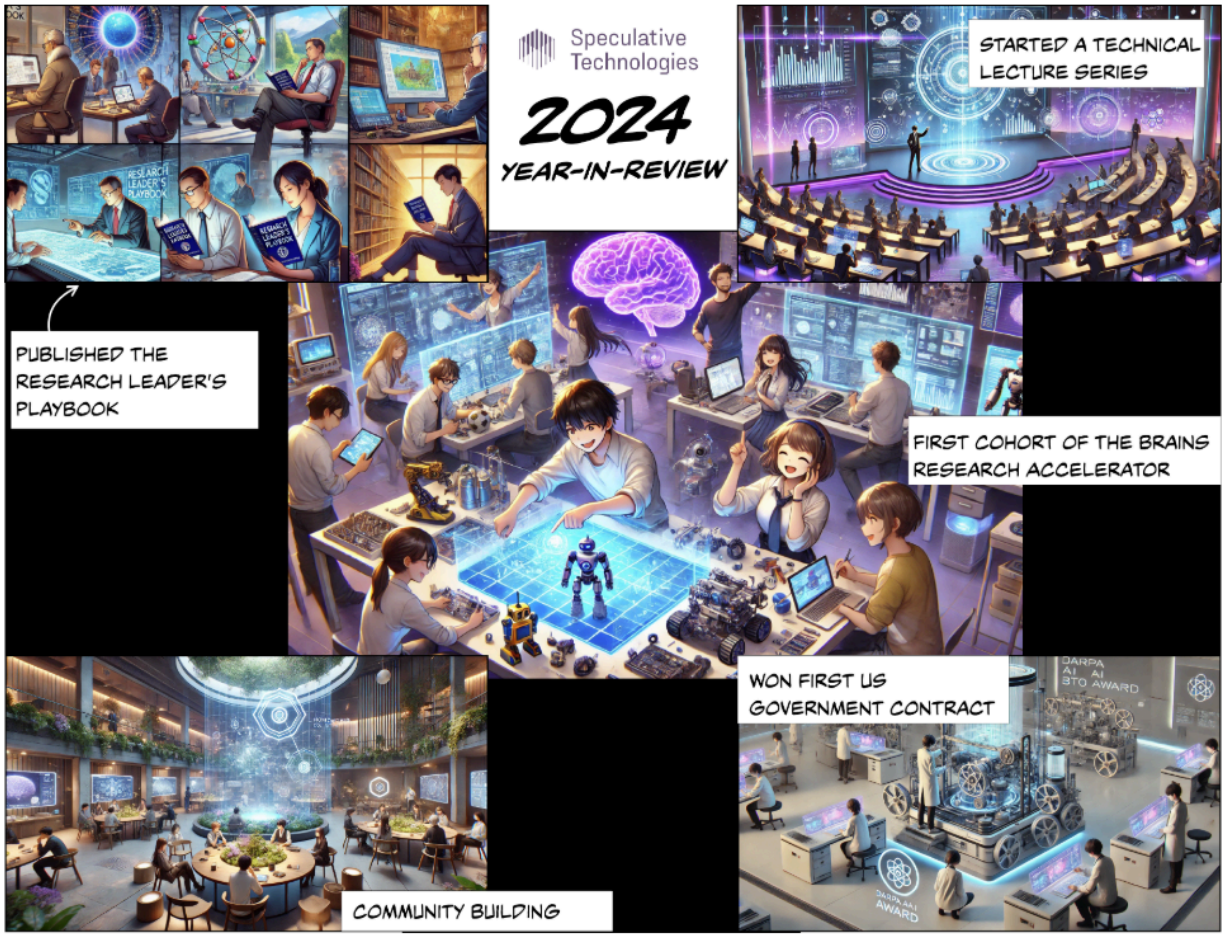
2024 Speculative Technologies Year-End-Report



2024 was our busiest, most operationally heavy, and most people-affecting year so far. Of course, going forward, I aim to be able to say that every year!

This report is structured as follows:

1. A list of things we accomplished as an organization
2. Some reflection on what worked and didn't work
3. Plans for 2025
4. Lessons and hypotheses

I'm sure you're seeing a ton of these so in a nutshell here are the biggest takeaways:

- The Brains accelerator was a great success and we're continuing in 2025.

- We accomplished a lot: getting our first US government contract, lots of community work, and publishing a lot of well-received work.
- We have ambitious plans for next year focusing on making Brains sustainable and building physical infrastructure for research misfits.

Things we accomplished in 2024

- **The first cohort of the Brains research accelerator.** Concretely that meant wrangling 16 fellows, eight mentors, and a slew of other folks; putting on two big in-person events; giving multiple rounds of feedback on program plans, written program briefs, and tight presentations; and tons of connecting, pushing, and advising as people worked to get their programs off the ground. This ate a huge amount of the Spectech team's time, but it was totally worth it. You can read more about our lessons and reflections from the Brains program here. One of those lessons was that research funding moves so much more slowly than venture capital. Despite that, the first Brains cohort is already showing results:
    - Patrick Mineault joined the Amaranth Foundation to lead their NeuroAI program and published a great roadmap for that field.
    - Michelle Wang won the incredibly selective OSV Fellowship to build out her program to create new kinds of magnets and ways of making them. She's also doing some cool things that we can't talk about yet.
    - Tim McGee won a DARPA contract to create AI models for protein-based fibers. (The Impossible Fibers program is unlocking protein-based fibers that could outperform kevlar or spider silk, embed biological sensors, and eliminate microplastics from clothing.)
    - Beck Brachman launched Imprint— a FRO that is creating tools to decipher the immune system.
    - Aaron Tohuvavohu raised $3M to seed an FRO to build open-source space telescopes, with a further $40M in the pipeline if he can deliver this year. (The STAR program is building a high-precision, low-cost, standardized space telescope platform to broaden our cosmic horizons, expand our knowledge of the Universe, and scout for resources and habitable worlds.)

- **Making Brains a repeatable thing.** For programs like the Brains accelerator, consistency and regularity are critical: they only work as Schelling points for ambitious people and supporters if everybody can count on them happening on a regular cadence. We accomplished this for the Brains program: we recruited, interviewed, and admitted a new cohort of fellows on the same cadence as last year (doing a number of experiments about how we do all of that along the way). The new cohort will kick off at the end of January.

- **ARIA Collaboration.** We worked with the UK's ARIA to create a playbook for their Programme Directors and a complementary 1:1 mentoring program, helping spread experience in running ARPA programs across the Atlantic.
- **The Research Leader's Playbook.** We released The Research Leader's Playbook: a tactical resource for people running ambitious "Coordinated Research Programs" of all sorts, from FROs to ARPA programs and beyond. It got a great reception — we've had people send in pictures of proudly printed versions from CERN to Silicon Valley.
- **First US Government Contract.** Tim McGee's Impossible Fibers Program won one of DARPA's AI BTO Awards. It's still an open question about how much of our work should involve government contracts (more on this in lessons and hypotheses) but it's still a big win for the program.
- **Started a Technical Lecture Series.** We started a technical lecture series both to showcase the cool work that people in the Spectech community are doing, and to start creating a Schelling point for people who are interested in serious technical research outside of academia.
- **Community Events.** We hosted a number of low-cost, low-key "nerd parties" for (especially technical) people who are "weird new institution curious" and just good, ambitious folk. They were surprisingly popular: most gatherings are either very domain-specific or startup-flavored and gatherings of people who are genuinely curious about technical things outside of their expertise are rare.
- **Created a network for people starting "Extra-Ordinary" research organizations**. In collaboration with Homeworld Collective we started a network of people running research organizations that don't fit into traditional buckets. The goal was to create a high-trust place where people could get to brass tacks and talk about our equivalent of "turpentine" in the sense of the Picasso Quote: "When art critics get together they talk about Form and Structure and Meaning. When artists get together they talk about where you can buy cheap turpentine." I believe we succeeded! We hope to expand the scope in the coming year.

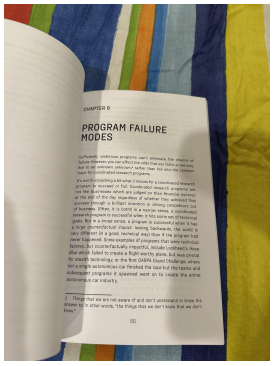
Media and Spreading the Word

In addition to directly and indirectly creating new technologies, part of the way Speculative Technologies aims to impact the world is by blazing a path for new institutions — both by sharing what we've learned and trying to shift culture. That primarily happens through media — we published a number of pieces ourselves, appeared in other publications, and spread the word on podcasts and at conferences. Here's a roundup:

- Podcasts and talks
    - A talk from the first Progress Conference -- Speculative Technologies, Materials & Manufacturing: unlocking innovations underpinning civilization
    - Infinite Loops Podcast
    - The Orthogonal Bet: How to fund R&D that is for the public good? – Riskgaming – Podcast

    - The Macroscience Podcast
- Appearances in other media
    - Mentioned in Chemical & Engineering News
    - Published a piece on what it takes to get materials out of the lab in Works in Progress
- Posts on our blog
    - Materials and Manufacturing Underpin Civilization
    - The tension of age
    - Lessons from the Brains Accelerator
    - In Defense of Academia
    - The ARPA Model isn't what you think it is
    - Unbundling the University, Pre-commerical Research, and Speculative Technologies (donors only)
    - Making BBNs in the 21st century (donors only)
    - How the University got its roles (donors only)






Plans for 2025

2025 is the year Spectech goes to war. It's time we acknowledge that we are going to succeed by working outside of the system, not with the system. We have spent a lot of effort trying to make our

core MO working with existing institutions, from applying for government grants to consortia building among big companies and VCs to trying to coordinate universities and startups. We've always known that we are the radical militant arm of the metascience movement and we need to embrace that role. This isn't to say that it needs to be a hot war, nor should we be explicitly belligerent. But we do need to embrace the fact that to a large extent, our incentives are not aligned with legacy institutions; we are going to succeed by end-running existing institutions more often than working with them, particularly universities.

Speculative Technologies is going to have four major focus areas in 2025. (Number four is the big, hairy audacious goal):

1. **Making Brains sustainable.** Brains will be maximally impactful if it's around for a while. Accelerators and fellowships like the Brains program create compounding effects over time (assuming they're run well). Building results-based reputations takes time, useful alumni networks require a critical density, and small year-to-year improvements add up. Right now, Brains is not "default alive" — running it makes it hard for the Spectech team to do anything else for several months and requires significant fundraising work just to pay for one year at a time. We're going to try to change this in 2025, in large part by establishing revenue streams that aren't just one-off donations. Our hypothesis is that we can fund a big chunk of the Brains program by running workshops or training programs based on the Brains curriculum for organizations who want to take their research leadership to the next level. Ideally, we'll get to a point where we can hire a dedicated director who would own the Brains program.
2. **Work to enable more weird research organizations.** In addition to our programs, it's important that Speculative Technologies continue to work to enable new frontier-pushing institutions more generally. In addition to rising tides lifting all ships, I'm still confident about the hypothesis that a big part of our impact will come from blazing a path for other metascientific entrepreneurs. Concretely:
    - Right now we have a collaboration to create a report about funding non-traditional research efforts that we hope will bring our weird little world into broader consciousness and highlight how people can help.
    - We will continue to hold community events for and curate a network of people in the trenches building weird new organizations. It's a lonely path and simply normalizing doing ambitious things that are not just running a startup or an academic lab can go a long way towards helping more people do it. Ambitiously and if the opportunity presents itself, we'd run an exclusive, high-status showcase of existing and potential work that won't happen in traditional institutions — think "science fair for adults" or "TED but not bullshit." (This is, of course, what we also aspire for the Brains Showcase to become, but there might be value to having it be not-just Brains fellows.)

    - More tentatively, I'd love to (co)host a small, action-focused workshop focused on how to unlock a new generation of philanthropy for weird new institutions, particularly around scientific and technological research.
3. **Level up as an organization.** In 2025, I want to expand the team (which in part will be a lagging indicator) and build a more active Board. Expanding the team is, of course, an end, not a means, but currently we're extremely constrained in what we can take on — there are so many more things we could be doing, from building community resources to helping Brains fellows after they graduate. We currently have an amazing, hands-off board, but I think that adding a few people to the board could both help us connect to more supporters, be more effective, and particularly help with the last and most important goal of the year — creating physical infrastructure. (See goal #4) At the moment, Speculative Technologies is resource constrained, not idea constrained. (It's easy to always claim to be resource constrained but I try to be really honest about which it is.) Leveling up as an organization will require addressing this. Expanding the team is both a lagging indicator that we're addressing resource constraints and how we're actually going to put those resources to use; the hope is that an expanded board will help address those resource constraints.
4. **Create a physical home for research misfits.** This is the big hairy audacious goal of 2025. Over the past year, it's become clear that where work is physically happening matters. Over and over we've run into situations where ambitious people are constrained by their ability to navigate a university bureaucracy for lab space, convince a startup to work on a piece of a project without viciously holding IP, or simply can't get funding because they don't already have infrastructure. In other words, it's hard to do work that isn't a good fit for existing institutions via existing institutions. (This is one of the ways that our original hypothesis around creating a private ARPA was wrong.) **We need to build a home for research misfits.** There are three approaches to this effort (that affect the initial path but all converge on the same thing thing) that we're going to pitch to potential supporters: building a lab-first hardcore institute of technology; a research center to unlock new manufacturing paradigms and reindustrialize; a serious context for generating AI training data on how non-biology research actually happens. (There is so much more to unpack here in another memo.)

Asks

- Introductions to people with access to resources who might be interested in partnering on building a physical home and lab for research misfits.
- Introductions to people at organizations who may want us to run a Brains-curriculum-based workshop/executive training for them, or would want to consult with our network of experts.
- Introductions to amazing technical people with ambitious ideas that don't make sense in an academic lab or startups (as potential Brains fellows, program leads, or just to help).
- Introductions to great people involved in materials and manufacturing more generally.