

Postdoctoral Researcher

CA-2026-Postdoc-02

Call for Applications

[Topos Institute](#) is looking for a **Postdoctoral Researcher** to study and publish about categorical statistics from the viewpoint of categorical logic, or the foundations of categorical logic itself from the viewpoint of double category theory, to be based in Berkeley, California.

Summary

We are a non-profit research institute dedicated to realising a world where the systems that surround us benefit us all, so that society can better cooperate on critical issues – the climate crisis, pandemic responses, agricultural modelling, global access to education, and more – through interconnected systems that consider holistic impacts. We develop new tools for collective inquiry and modelling, enabled by a combination of novel foundational mathematics, open-source software engineering, and meaningful collaboration with domain specialists. Collaboration and discussion are fundamental to our work culture, so we deeply value gathering in person at the office.

- **Title:** Postdoctoral Researcher
- **Start date:** As soon as possible
- **Location:** Berkeley, California
- **Supervisor:** Evan Patterson
- **Employment type:** Full-time
- **Duration:** Until March 2027, with possibility of extension
- **Salary:** \$85,000–95,000

Topos is committed to building a team with diverse perspectives and life experiences, so those with personal or professional backgrounds underrepresented at Topos are highly encouraged to apply.

Further information about Topos Institute, including our [Blog](#) and [YouTube](#) pages, can be found on our website: topos.institute.

About the position

Topos Institute seeks a one-year postdoctoral researcher, beginning as soon as possible and with possibility of extension, to work on topics in categorical statistics or double-categorical logic.

As a mathematical discipline, statistics is often regarded as a part of analysis, concerning probabilities and measures, estimates and bounds. But much of statistical practice is more structural: about exploring the space of statistical models, often by starting with existing models and then augmenting or composing them. This practice is traditionally theorized little or not at all. Synthetic mathematics, based on category theory, offers the tools to formalize more of the practice of model building and composition. By introducing the concept of a statistical theory, a kind of categorical structure, and reconstructing a statistical model as a model of a statistical theory, in the sense of logic, we can tease apart the synthetic and analytic aspects of statistical modeling, enabling new formal tools for structured model building.

The foundation for this project is categorical logic, the conjunction of category theory and mathematical logic. Because stochasticity is central to statistics, non-traditional logics are needed to formulate statistical theories. Categorical structures such as Markov categories can be used to define such logics. Moreover, due to the plurality of modeling languages and methodologies in use, ranging from graphical models to generative models with explicit probability measures to the language of random variables, flexibility in foundations is needed.

If logics are identified with categorical structures, as in the dictionary of categorical logic, then these different logics can be organized using higher-dimensional category theory. Double categories are particularly well suited to this purpose. Categorifying the classical concept of algebraic theory, we can define a notion of double theory whose models are categories equipped with specified extra structure. This program we call double-categorical logic.

We seek a postdoctoral researcher to work in categorical statistics or double-categorical logic as outlined. Depending on the applicant's background and interests, they could work in one or both of these areas.

Responsibilities

- Lead and conduct mathematical research on categorical statistics or double-categorical logic
- Write academic papers and contribute to grant deliverables
- Collaborate with Topos Institute researchers and external partners
- Present work at conferences and workshops
- Contribute to educational materials and open-source research software as appropriate

About you

A successful candidate will:

- Proficiently conduct and publish novel mathematical research
- Have strong foundations in category theory

- Take seriously the challenges of applying mathematics to problems in science and engineering
- Read and engage critically with the research motivating this position
- Contribute to theoretical development and (optionally) to implementation
- Communicate clearly in writing and conversation
- Contribute to a lively in-person research culture at Topos Berkeley
- Collaborate closely with supervisor and colleagues at Topos Berkeley

Applicants must be strong in mathematics, statistics, or computer science, with a solid knowledge of category theory. Applicants with underrepresented perspectives and backgrounds are highly encouraged to apply.

There is evidence to suggest that women and people of color are less likely to apply for jobs unless they believe they meet every one of the qualifications as described in the job description. If this role speaks to you, we encourage you to apply, even if you don't believe you tick all the boxes.

Eligibility criteria

This position has the requirement of a PhD in mathematics, statistics, computer science, or related field (completed or expected by start date).

Visa sponsorship is available for exceptional candidates.

Topos is an Equal Opportunity Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or status as a protected veteran.

Us and you

We are dedicated to shaping the future of technology to ensure a more equitable and just world, and we believe that a technology that supports a healthy society can only be built by an organisation that supports its team members. As such, Topos is committed to ensuring that we clearly and compassionately negotiate your role and responsibilities while you're at Topos, and then ensuring that you have the support that you need to fulfill that role.

Topos offers generous benefits including medical, dental, and vision insurance (all premiums covered), 18 days paid vacation annually, 13 paid company holidays annually, and a 401(k) plan (non-matching).

Why Topos?

Exceptional Team. Collaborate with world-leading researchers and high calibre funding agencies.

Inclusive Environment. Be part of building a diverse team where different perspectives are valued and everyone can contribute their best work.

Meaningful Impact. Lead breakthrough research on humanity's most pressing challenges—from climate change to public health to collaborative open science.

Technical Innovation. Support the development of genuinely novel technologies that could transform how humanity approaches complex, collaborative decision-making.

Supportive Culture. Join a caring, inquiry-driven community that values both intellectual rigor and personal wellbeing, with a strong focus on in-person office culture but flexibility to support work-life balance.

Growth Opportunity. Shape a team poised for significant expansion and impact.

Application process

To apply for this position, please email ca-2026-postdoc-02@topos.institute with the subject line “**Application**” and two PDF attachments:

1. a copy of your CV; and
2. a cover letter **including the contact details for two references** who we can contact.

Your cover letter might describe your interest in the Topos Institute and this position, your professional experience, your future goals, your specific relevant experience, and your potential contribution to a diverse and inclusive environment at Topos. Please feel free also to convey any information about preferred names and pronouns.

Please note that we will **not** contact your references without first notifying you.

We will review applications on a rolling basis.

If you have any questions about the application, or the role in general, please email ca-2026-postdoc-02@topos.institute.