



Request for Applications:

2023 Sie Post-Doctoral Fellowships in Down Syndrome Research

Purpose

The Crnic Institute Boulder Branch ([CBB](#)) at CU Boulder's [BioFrontiers Institute](#) is issuing a new call for applications to the **Sie Post-Doctoral Fellowships in Down Syndrome** Research Program. The CBB is constituted by 10 groups from 8 different CU Boulder departments/institutes, including the Allen, Brumbaugh, Chuong, Dowell, Ferguson, Hoeffler, Link, Molas, Olwin and Taatjes labs. We are building a Boulder-based Down syndrome research community that will synergize with multiple groups at the main [Linda Crnic Institute for Down syndrome](#), CU Anschutz Medical Campus. **Sie Fellows** will leverage the **BioFrontiers Institute's** strengths in interdisciplinary, dynamic, and collaborative research, and cutting-edge technology to enhance the Crnic Institute's mission to significantly improve the lives of people with Down syndrome through advanced biomedical research. As a synergistic partnership, we are committed to openly sharing data and materials.

Sie Fellows will work in a cooperative and cross-disciplinary fashion on the following CBB research project investigating molecular, cellular, and systemic aspects of Trisomy 21 (T21) co-morbidities:

(1) Stem cell homeostasis and differentiation in Down Syndrome

PIs: **Olwin, Brumbaugh** and Allen

Down syndrome individuals frequently exhibit alterations in stem cell homeostasis and differentiation potential, as an underlying cause to many different co-occurring conditions. As an example, T21 people often manifest muscle weakness (hypotonia) and associated motor and postural deficits. Brad Olwin's lab reported a failure in satellite (muscle stem) cell expansion in the Down syndrome mouse model Ts65Dn, resulting in impaired muscle regeneration. T21 mouse models, human iPSCs, and single-cell RNA-seq approaches will be used to further clarify the **molecular mechanisms** and **gene regulatory interactions** that drive Down syndrome-associated defects, with the ultimate goal of contributing to novel diagnostic and treatment strategies for people with Down syndrome.

The ideal candidate should have a strong background in stem cell/differentiation biology, scRNA-seq data obtention and analysis, and knowledge or strong interest in Down syndrome related co-morbidities.

The **Sie Post-Doctoral Fellowships in Down Syndrome** Research Program is made possible by a substantial gift from the **Anna and John J. Sie Foundation**, the founding donors of the Crnic Institute. The Crnic Institute is the first in the world to focus exclusively on research and medical care for people with Down syndrome. **John Sie** also serves on the BioFrontiers Institute Advisory Board and has financially contributed to the institute's development as a pioneer in using interdisciplinary science to improve human health. We also believe that a diverse research community is essential to achieving our scientific mission and are aligned with the CU Boulder [Inclusion, Diversity, and Excellence in Academics Plan](#). Together, we will make positive, lasting impacts on the lives of people with Down syndrome.

Key Dates

Applications due	May 31, 2023
Decisions communicated to applicants	June 31, 2023
Funding begins	July-August 2023 for current CU postdocs or at time of hire for external awardees

Eligibility and award information

Applicant must have a PhD or equivalent degree, and either be a postdoctoral associate in a CU Boulder lab affiliated with the Crnic Boulder Branch, or must be hired into one of those labs. Faculty from affiliated labs are part of the fellowship review process, but fellowship awards to external candidates are contingent upon a successful hire into an affiliated CU Boulder lab. The fellowship will provide up to three years of salary support and benefits according to NIH salary guidelines. No budget required. No indirect costs are provided.

Application Instructions

- Applications must be submitted by e-mail to cbb@colorado.edu
- Applications are due at 11:59 PM MST on May 31, 2023.
- Application components should be submitted as PDF documents and include:
 - **Research Statement** describing past work and your **proposed intersection** with the research project listed above (3-4 pages max.)
 - **CV or Biosketch** (NIH fellowship format preferred).
 - **3 letters of recommendation** or contact information for 3 references who may be contacted on your behalf (graduate thesis advisor is mandatory).

The CBB will keep all application components confidential.

Recipient Requirements

Sie Fellows are expected to become active members of the Crnic Institute and agree to:

- Register online as a [Linda Crnic Institute Member](#).
- Attend monthly Crnic Supergroup Meetings and Journal Clubs.
- Present research progress at the monthly Crnic Supergroup Meetings once a year.
- Prepare a formal project presentation for future Down syndrome research symposiums.
- List both the BioFrontiers-Crnic Boulder Branch and the Linda Crnic Institute for Down Syndrome as academic affiliations (in addition to their home department) on all publications emanating from the work supported by the fellowship.