



## Sparks Brain Preservation Monthly Update - December 2025

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New Registered Clients This Month (Sign Ups and/or Memberships): 7

### **Week of Dec 1st**

We practiced our brain preservation techniques on two body donors this week.

We are conducting rat research to determine how different factors in perfusion fixation affect the resulting brain preservation quality. All of the protocols have been reviewed and approved by our Institutional Animal Care and Use Committee (IACUC) at SBP. We are currently testing the effect of perfusing 20% formalin combined with various concentrations of mannitol, ranging from 0 to 20%. The goal is to see how this affects perfusion quality and cellular structure. We did perfusion fixation of 10 rat brains this week.

A patient brain arrived that was fixed via immersion at an external facility and shipped to our facility. Upon arrival, the package was immediately opened in the fume hood. It was then immediately transferred to a storage container with 10% neutral buffered formalin and 2% glutaraldehyde, which was then placed under refrigeration.

### **Week of Dec 8th**

We practiced our brain preservation techniques on four body donors and one donated dog this week.

Our Crossbeam electron microscope from Zeiss was installed, which began on Monday. On Friday, we received a training session on how to use the microscope and we imaged our tissue (previously prepared on a TEM grid) for the first time.

We did perfusion fixation of 5 rat brains this week.

We had an Open House meetup on Saturday the 13th. We really appreciate the efforts of Nikki Olson and Aschwin de Wolf of the Pacific Northwest Biostasis meetup group for organizing this. 17 people attended. Jordan Sparks gave a presentation on our organization, including our plans for growth in the future and how biological revival could be performed after fixation. Andy McKenzie gave a presentation on the history of revival techniques that have been proposed over the years following long-term preservation. We are also grateful to Nikki and Aschwin for writing a generous summary of the event here:

<https://biostasispnw.substack.com/p/sparks-brain-preservation-clinical>

Here is a photo of Jordan at the beginning of his presentation (photo credit to Jacob Cook):



## **Week of Dec 15th**

We practiced our brain preservation techniques on one body donor and one donated dog this week.

On Monday, we sent 57 samples of our brain tissue to a collaborating core facility for H&E staining and digital light microscopy imaging, to measure the quality of our preservation and study the changes in brain cell structure seen in different conditions.

We did perfusion fixation of 5 rat brains this week.

We are working on how to use our new electron microscope. We began working on acquiring the equipment needed to image embedded samples using FIB-SEM, such as a sputter coater.

The preprint of our paper, "Physician estimates of the feasibility of preserving the dying for future revival", co-authored with Drs. Ariel Zeleznikow-Johnston and Emil Kendziorra, was posted on medRxiv here: <https://www.medrxiv.org/content/10.64898/2025.12.03.25341583v1>. Key sentence from the abstract: "US physicians assigned a median 25.5% probability to preservation retaining neural information under ideal conditions in a manner potentially compatible with future patient revival."

This weekend we had a team photo (sans Dr. Sparks) at our annual holiday party:



### **Week of Dec 22nd**

We practiced our brain preservation techniques on one body donor and one donated dog this week.

Quality Control Spotlight: As part of our standard research protocol, we perform macroscopic evaluations to assess perfusion quality. This week's evaluation of a donated canine brain following aortic perfusion showed what we consider high-quality results, with the majority of the cerebral vasculature successfully cleared of blood. The procedure was initiated 10 minutes after the animal died following euthanasia by a licensed veterinarian. Below is a photo of the extracted brain:

