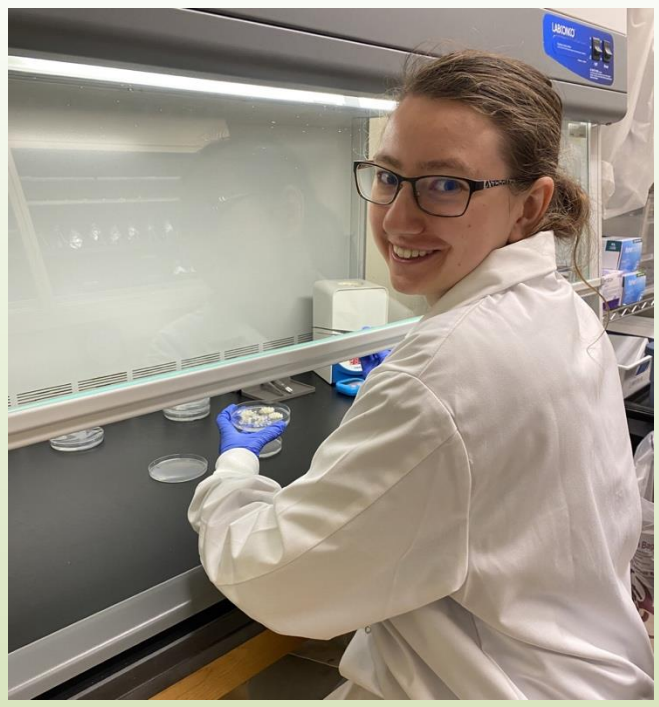
Ivy Barkhouse



I recently graduated with a BSc in Environmental Science from Acadia. I am currently working in the tissue culture lab in partnership with the Christmas Tree Council of Nova Scotia, funded by a Mitacs Business Strategy Internship. The goal of this project is to improve techniques which will help to breed new Christmas trees that are better adapted to climate change.

I enjoy research because it helps us to better understand the world and develop solutions to applied problems. The K.C. Irving Environmental Science Center is a great place to do research because there are many great resources and opportunities to work with plants, including the tissue culture lab. I am very interested in plants, especially native plants. I hope that learning skills in the tissue culture lab and how to grow plants using artificial media will be beneficial to my future career.

Using somatic embryogenesis and cryopreservation to generate and preserve new lines of Balsam fir

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Project objectives:

1. To initiate new lines of Balsam fir using somatic embryogenesis by dissecting embryos from Balsam fir seeds and placing them on media to promote growth of embryonic tissue (callus).
2. To maintain callus initiated from embryos last year.
3. To cryopreserve Balsam fir lines in liquid nitrogen.
4. To mature Balsam fir lines for testing of traits such as enhanced needle retention, needle length, colour, and later flushing dates.

Somatic embryogenesis allows for the formation of embryonic tissue which can be used for mass propagation of uniform copies (clones) of Balsam fir trees with desirable traits.

Figure 1. Balsam fir callus growing on media

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