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PhD

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Image created in Cedar Breaks
National Monument, Utah, USA

Images of Research Competition

University of Alberta

Bristle Baby

Semi-finalist (2019)

After over a thousand years of life this Great Basin Bristlecone Pine (*Pinus longaeva* D. K. Bailey) continues to look to the next generation with a new crop of its signature bristly cones. This photograph captures a nascent bristlecone and the fresh burst of needles that will help with ancient tree survive. These new needles may be used for decades before being shed as Bristlecone Pines keep their needles longer than any other conifer. The Great Basin Bristlecone Pine is capable of lifespans well over 4,000 years and do not deteriorate with age. How these amazing trees survive in harsh environments for such extended timespans remains understudied. My research investigates the belowground symbiotic fungal communities that can aid Great Basin Bristlecone Pine in surviving and reproducing. The belowground fungal partners help their host trees find and use nutrients and can even connect trees to one another in beneficial fungal networks. Understanding how belowground fungal symbionts vary with time and between individuals could help with restoration of seedlings and better conservation of these beautiful, fascinating ancients.