Platforms EOI: Single Cell 'Omics Browser for Agricultural Biotechnology

Project title
Single Cell 'Omics Browser for Agricultural Biotechnology

Field of Research code(s)
- 06 BIOLOGICAL SCIENCES
- 07 AGRICULTURAL AND VETERINARY SCIENCES
- 08 INFORMATION AND COMPUTING SCIENCES

EOI Lead Name
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EOI lead Research Group
La Trobe Genomics Platform, La Trobe Institute for Agriculture and Food, ARC Research Hub for Medicinal Agriculture

EOI lead Organisation
La Trobe University

EOI lead Email

Collaborator details

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<tr>
<th>Name</th>
<th>Research Group</th>
<th>Organisation</th>
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<tr>
<td>Prof Jim Whelan</td>
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Project description
Single cell 'omics technology is at the forefront of molecular sciences, driving innovations in fundamental and applied biological research. It enables us to catalogue and examine the expression of all genes within every cell of complex tissues or organs. The technology has been developed recently and adopted rapidly by the research community. Though the community's ability to perform lab experiments has advanced well, the data science capability needed to share and interrogate information lags behind. This is a consequence of the complexity of the highly dimensional data; typical experiments take tens of thousands of measurements from each of thousands of cells. This creates a barrier to community progress, since we are unable to effectively share data between labs and lack community standards for metadata recording.
Our team are developing a single cell 'omics web browser that enables us to share data nationally and internationally. The includes definition of a standardized ontology for metadata collection. The browser will aid innovation in healthcare and agricultural research. We propose to the ARDC to adapt the completed single cell 'omics web browser for public deployment.

### Existing technology

**Adapt**

La Trobe Seed Single Cell Genomics Browser

### Anticipated requirements

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<tr>
<th><strong>Annual funding</strong></th>
<th>$100,000 - $199,000</th>
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<th><strong>Proposed length</strong></th>
<th>2 years</th>
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### Terms

**I agree to the terms**

Yes