

# A Picture is Worth 1000 Words: Using Pictorial Expression Data in Bioinformatics Assignments

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When learning bioinformatics, students are often given an unknown sequence and are required to perform a BLAST search to determine gene identity and % identity shared with genes in other species. The goal is usually for students to speculate the role of this unknown gene within their organism. We have found that access to visual information about expression patterns is very useful especially for non-experts like our students. Researchers from the University of Toronto developed the ePlant browsers that summarize expression data from thousands of experiments first in *Arabidopsis* (Winter et al. 2007) and now from a diverse array of plant species (as well as mice and humans). In this workshop we will use this online tool to explore expression of several genes in terms of tissue and subcellular specificity, developmental regulation, different physiological conditions and natural variation in different sub-species. It is also possible to look at a specific plant tissue or condition and find genes expressed within this tissue or condition. Expression data for any specific gene is linked with many other useful genomic tools. This tool could be used as a part of a genetics, developmental biology, cell biology, physiology or ecology lab.

**Keywords:** bioinformatics, genetics, developmental biology, physiology, cell biology, ecology

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