# MILRD Mini Virtual Training Projects

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| **VTP OVERVIEW** | **Interpreting Single-cell & Spatial Transcriptomics Figures with Cellular/Molec Neuroscience Data** |
| **Source Data** | Hasel, P., Rose, I.V.L., Sadick, J.S. *et al.* Neuroinflammatory astrocyte subtypes in the mouse brain. *Nat Neurosci* 24, 1475–1487 (2021). https://doi.org/10.1038/s41593-021-00905-6. |
| **Aim** | Review, interpret, and interrogate single-cell RNA-sequencing (scRNA-seq) and spatial transcriptomics data profiling neuroinflammatory astrocyte subtypes in the mouse brain. |
| **Audience** | ***This workshop is designed for:***<br>● High school students interested to pursue study in cellular/molecular biology or neurobiology<br>● Undergraduate biology majors interested in research internships or applying to graduate school<br>● Non-biologist professionals with an active interest in learning more about molecular & cellular biology and neurobiology |
| **Prerequisite Concepts** | ***Participants should have a rudimentary understanding of cellular and molecular biology concepts, including:***<br>● mRNA, DNA, proteins<br>● Cell structure and organelles.<br>● The central dogma of molecular biology<br>● Neurons |
| **Goals** | ***Each participant will:***<br>● Learn how to interpret figures that showcase results from single-cell RNA sequencing (scRNA-seq) and spatial transcriptomics.<br>● Engage in discussions about the experimental design choices highlighted in the research paper.<br>● Analyze the expression levels of a specific gene within the scRNA-seq and spatial transcriptomics data, and then compare and contrast these findings with those of other participants.<br>● Explore the fundamental concepts and experimental design strategies of scRNA-seq and spatial transcriptomics—with an emphasis on control versus perturbation studies. |
| **Additional Information** | ***Certificate of Completion:*** Participants will receive a letter of completion that outlines the content covered and assignments completed during the workshop.<br><br>***Access to Materials:*** All content and tasks are designed to be completed within the workshop. However, participants will have access to the instructional materials, platform, and a Zoom recording for 24 hours after the workshop to review and complete any unfinished work. |
| **Date** | March 16, 2024 \| 11am-12:30pm PT (2-3:30pm ET) |
| **Signup** | Enroll using this form. |

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