Cover page for

Module 2: Transcription Part I

# Submission Details

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# Lesson Overview

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| Lesson abstract: | This module will introduce you to the use of the Genome Browser to illustrate the process of transcription and help you identify regulatory elements, using the *Drosophila melanogaster* *transformer* (*tra*) gene as an example. You will use the UCSC Genome Browser Mirror developed by the Genome Education Partnership (GEP), which contains RNA expression data, to identify the different parts of the gene that give rise to pre-mRNA through transcription. |
| Lesson keywords: | Genome Browser  Transcription Initiation  Transcription Start Site  Transcription Termination Signal |
| Organism(s) that are the focus of this lesson: | *Drosophila melanogaster* |
| Type(s) of student learning assessments: | Short answer formative and summative questions |
| Websites and online databases used: | GEP UCSC Genome Browser (<http://gander.wustl.edu>) |
| Resources in addition to the lesson instructions | YouTube videos |

# Learning Topics

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| Topics in scientific fields: | Bioinformatics  Genomics  Molecular Biology |
| Topics in mathematics or statistics: | None |
| Topics in bioinformatics or data science: | Data visualization |

# Student Prerequisites

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| Recommended prior course work: | High school level biology |
| Recommended computer skills: | Basic: Familiarity with web browsers, word processing |

# Instructor Prerequisites

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| Recommended computer skills: | Basic: Familiarity with web browsers, word processing |
| Instructional requirements: | Basic Computer Lab (Access to laptops/desktops, no large memory or CPU requirements) |

# Implementation Recommendations

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| Instructional time required: | 1 class period or less |
| Students work as individuals or teams? | Either individual or team work is possible |
| Number of students in a class: | 10-25 students (assume no TAs and one computer for each student) |

# Accessibility

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| Available languages: | English |
| Additional materials for students with disabilities: | None |