Name

Learning goals- choose 5-10, at the end of the semester you will submit a 1-2 page summary of what you learned. Understanding and applying the Scientific Method:

|  |
| --- |
|  |
|  |
|  |

Understand the scientific method in the context of independent research.

Develop deep understanding and control of scientific method beyond previous courses. Describe different types of publications (e.g., journal article, popular press article, review article)

Background Knowledge of research topic:

|  |
| --- |
|  |
|  |

Develop knowledge of subject that is generally accurate and able to apply understanding to research. Deep understanding and control of subject, readily able to apply knowledge to research beyond courses.

Ability to identify important questions and formulate hypotheses:

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Create a thesis statement or hypothesis that is workable in terms of scope and topic Clearly state hypotheses, predictions and possible outcomes.

Select an appropriate literature or data search tool

Use advanced search techniques (e.g., truncation, specific field searching, subject/thesaurus indexing) Retrieve and locate sources from a search results list or bibliography

Acknowledge and accurately represent the intellectual work of others

Evaluate sources (e.g., accuracy, authority, currency, objectivity, and relevance)

Experimental design:

|  |
| --- |
|  |
|  |

Support a thesis or hypothesis with evidence Formulating a plan for finding needed information

Statistical/analytical skills:

|  |
| --- |
|  |
|  |

Perform standard or basic statistical analysis of data guided by mentor. Innovative in developing statistical hypotheses and conducting analysis.

Interpretation of data and results:

|  |
| --- |
|  |
|  |
|  |

Able to apply understanding of concept to independent research. Describe in depth the meaning of results.

Fairly & accurately summarize the published findings on data of others

Scientific communication:

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Able to funnel information in writing from a general idea to a specific research topic. Sophisticated word choice and use of field’s terminology in presenting information. Use writing to develop and deepen thinking

Integrate and cite information from well-chosen sources Analyze, organize and/or evaluate ideas, texts, or events Explain processes or data to non-biologists

Create precise descriptions of processes, objects, findings, environments, etc.

Present data/concepts in effective figures:

|  |
| --- |
|  |
|  |
|  |
|  |

Present data/concepts in ways suggested by mentor and/or scientific literature. Report complex data or findings (e.g., lab meeting, final report to mentor) Explaining policy implications of data

Create or incorporate visuals (drawings, photos, graphs, etc.) into texts or presentations Other: