A Faculty-Librarian Partnership for Investigative Learning in the Introductory Biology Laboratory

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A Faculty-Librarian Partnership: Introductory Biology

Dr. Nitya Jacob, Associate Professor of Biology
Andrea P. Heisel, Associate College Librarian
About Oxford College

- Founded in 1836
- Original Emory University Campus

- Total student body = 750
- 325 different high schools
- 36 states
- 16 foreign countries

Liberal Arts Intensive Philosophy: specifically aims to develop the knowledge, skills, and habits of mind that manifest curiosity, a spirit of inquiry, critical and ethical reasoning, clarity in writing and speech, educated citizenship, and community engagement.
<table>
<thead>
<tr>
<th><strong>Biology 141</strong></th>
<th><strong>Expected Learning Outcomes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learn the process of searching for literature</td>
<td></td>
</tr>
<tr>
<td>2. Learn to select references for quality and relevance</td>
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<table>
<thead>
<tr>
<th><strong>Biology 142</strong></th>
<th><strong>Expected Learning Outcomes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Apply the process of searching literature for a longer term research project</td>
<td></td>
</tr>
<tr>
<td>2. Learn to be more proficient at selecting references</td>
<td></td>
</tr>
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Bio 141: Assignment

- Introduction and References
  - Laboratory Investigation 1: Faculty Only
  - Library Workshop: Active Learning: Co-teachers

- Abstract, materials and methods, results, and discussion
  - Laboratory 2-4: Faculty Only
  - Independent Research Project: Librarians visit laboratory

- Symposium and full paper
  - Group presentations: Librarians attend session
  - Open-forum: Co-facilitators
Bio 142: Assignment

Full Paper
- Laboratory Investigation 1: Faculty Only
- Independent reference search: No instruction

Research Question
- Literature search session: Co-teachers
- Laboratory research project: Librarians visit the laboratory

Symposium and Full Paper
- Group presentations: Librarians attend session
- Open-forum: Co-facilitators

Faculty-Librarian Collaboration and Activity
## Assignments

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Biology 141</th>
<th>Biology 142</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to library workshop assignment</td>
<td>Search for references (only lab manual reading given as a guide)</td>
<td>n/a</td>
</tr>
<tr>
<td>First Paper</td>
<td>Introduction and references on short investigation</td>
<td>Complete paper on short investigation</td>
</tr>
<tr>
<td>Final Assignment</td>
<td>Complete paper on research project</td>
<td>Complete paper on research project</td>
</tr>
</tbody>
</table>
Distribution of Types of References in the First Assignment

- **Journal Articles**: Biology 141 has a higher distribution compared to Biology 142.
- **General**: Both Biology 141 and Biology 142 have a similar distribution.
- **Books**: Biology 141 has a higher distribution compared to Biology 142.
Distribution of Types of References in Final Assignment

Types of References

Distribution in Bibliography (%)
Inclusion of Peer-Reviewed Articles in Bibliography

Distribution in Bibliography (%)

Assignment

Prior to Library Workshop  First Assignment  Final Paper

Biology 141  Biology 142
Conclusion

• What we learned
• Applying it to other disciplines
• Student responses