

Getting In On the Ground Floor: Integrating Information Literacy Into a New Curriculum

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Background

The Undergraduate Biomedical Science Major: a unique honors program initiated by the OSU College of Medicine.

- Began in 2005; graduated inaugural class in June 2009.
- Purpose: Prepare students to enter graduate/professional programs leading to an MD, PhD, MD/PhD.
- Program planners solicited assistance from Prior HSL for information literacy portion of curriculum.



Program Philosophy

- Small class sizes
- Team-based learning
- Coursework emphasis on problem-solving
- Oral and written communication skills
- Required minimum one-year biomedical research lab experience
- Medical school faculty as mentors
- Information literate graduates

Current Student Profile

- Applications: @ 65 per year
- Number admitted: @ 20 per year
- 75 current students
- Average ACT scores: 32
- Average SAT scores: 1400
- Under-represented minority students: 3
- First generation/disadvantaged students: 11
- National Merit Scholars: 27
- Non-Ohio Residents: 13

Curriculum

- Traditional pre-medical curriculum
- University general education requirements
- Emphasis on sciences
- Biomedical science coursework:

Reading and Analyzing the Biomedical Literature I and II

- Team taught by health sciences librarian and medical school faculty member
- Required in the Winter and Spring Quarters of the freshman year.
- Student teamwork and two team presentations are required.
- Two required bibliographies in AMA Citation Format
- Winter Quarter:
 - Focus on searching for, retrieving, reading, and organizing information.
- Emphasis on PubMed, Web of Knowledge, Images MD, RefWorks, high-quality books, articles, and web resources
- Sessions on copyright law, issues in scientific communication, professional presentation skills
- Spring Quarter:
 - In-depth analysis of articles that demonstrate the development of a biomedical research discipline
 - Emphasis on hypotheses, methodologies, expected and unexpected results

Introduction to Biomedical Research I & II. Biomedical Science Laboratory Techniques Biomedical Research Experience I, II & III Special Topics in Biomedical Science I, II, & III Concepts in Healthcare I, II & III

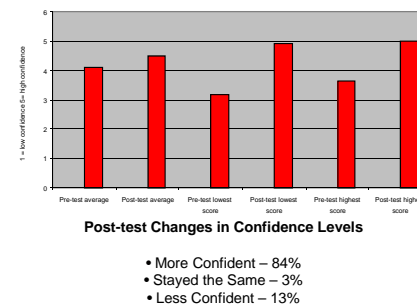


Program Outcomes

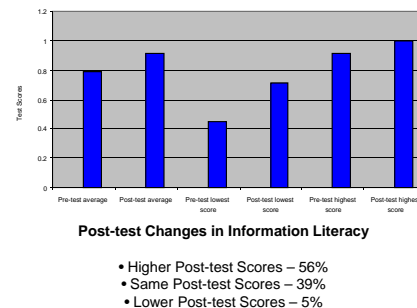
Pre- and Post-Tests

- Questions on information-seeking confidence levels, optimum ways to seek various formats of information, interpreting citations, issues in scientific communication
- Pre- and post-tests are identical.
- Pre-test administered late in the Autumn Quarter
- Post-test administered at the end of the Winter Quarter course
- Students are required to get at least 75% on post-test in order to pass the Winter course.
- 38 students were tested in 2007-08 & 2008-09.

Information Seeking Confidence Levels
38 students, 2008 and 2009 classes



Information Literacy Scores
38 students, 2008 and 2009 classes



Student Achievement



Student Scholarly Publication

First Author: Miller TE, Ghoshal K, Ramaswamy B, et al. MicroRNA-221/222 confers tamoxifen resistance in breast cancer by targeting p27Kip1. J Biol Chem., 2008 Oct 31; 283(44): 29897-903.

Students have been co-authors in papers published in:

- Biochimica et Biophysica Acta
- Forensic Science International: Genetics
- Journal of Child Psychology and Psychiatry
- Journal of Comparative Neurology
- The Physics Teacher

Student Awards & Recognition

- Best Presentation prize, Ohio Collaborative Conference in Bioinformatics
- 3 AACR Thomas Bardos Awards
- 4 1st place awards in OSU and OSUMC research forums
- Funding awards for global healthcare experiences in Africa and South America.
- NIH Intramural Research Training & NSF Summer Research Experience

Conclusion

Students are enthusiastic for and appreciative of the information literacy concepts and skills they achieve in this program. The librarian instructor has the satisfaction of making a positive contribution to these gifted students' professional competencies and achievements.