Current Topics in Bioinformatics & Proteomics/Genomics

The University of Toledo
BRIM Program in Bioinformatics & Proteomics/Genomics
BIPG5300 Current Topics in BPG, Section 001, CRN #56083

| Instructor: Alexei Fedorov, PhD | Class Location: 127 HEB |
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| Office Hours: TBA | Class Day/Time: TBA |
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| Term: Fall | Credit Hours: 1cr hr |

COURSE/CATALOG DESCRIPTION
In-depth analysis of original scientific papers/seminars in the fields of bioinformatics, proteomics and genomics for the development of critical analysis and scientific communication skills. May be repeated for credit.

COURSE OVERVIEW
The goal of this course is to provide students first-hand experience with the critical reading and presentation/discussion of primary sources of scientific information.

1) The topics presented will be selected from primary research literature directly related to the field of bioinformatics, proteomics and genomics (BPG).

2) After completing the class, students will be able to read BPG scientific literature, understand key concepts, critically interpret BPG data contained in current journal articles and will be aware of recent scientific advances in BPG.

3) By integration of a series of 4 to 5 presentations by UT faculty and/or outside speakers on BPG topics, spaced throughout the semester, students will get a feel for the nuts and bolts of BPG analysis and be able to directly interact and network with those scientists intimately involved in working in the BPG field; these should facilitate a cohesion among BPG program students.

These “non-students” seminars, as well as the weekly student presentations (as outlined below) would also be open to attendance by all UT faculty and other graduate students, and to faculty and interested students from UT Main Campus and BGSU. These would be held during the first hour of the regularly scheduled class meeting time. For the “non-student” seminars, the second hour of the class will consist of discussions/small group learning among the BPG program students and faculty presenter. Outside of these 4-5 “non-student” seminar classes, the course will consist of student presentations and discussions as described below.

STUDENT LEARNING OUTCOMES
After completing the class, students will be able to read BPG scientific literature, understand key concepts, critically interpret BPG data contained in current journal articles and will be aware of recent scientific advances in BPG.

TEACHING STRATEGIES
1.) At the start of the term, students will select one or two papers each (depending on total enrollment) from a
list of approved articles. 

2) Chosen papers will be distributed to the class to be read one per week.

3) During the first hour of the class meeting, one student will deliver a detailed scientific presentation on his/her chosen primary research article to the rest of the class and any other attendees, followed by a question and answer session. Advanced students, as appropriated and dependent upon approval of the instructor, may choose to present his/her primary research data to the group.

4) Following this, the general audience will depart and the student presenter will lead a roundtable discussion of the work among the BPG students taking the class. Here, intellectual contributions by all class members are encouraged and facilitated by the instructor. A particular emphasis will be based on the understanding, interpretation and analysis of BPG data and concepts. As needed, in addition to the course instructor, another faculty member from The University of Toledo or Bowling Green State University may join in the roundtable format.

5) The student presenter will prepare a short half-page self-evaluation critique and shortly thereafter will meet with the instructor who will provide critical feedback on his/her scientific communication skills and grasp of scientific knowledge on his/her selected paper.

6) Formal coursework, in addition to classroom presentations and discussions will consist of a weekly quiz on the reading material at the start of the class meeting and one-to-two-page writing assignments (a total of 4 assignments), critiquing the primary scientific literature at hand.

PREREQUISITES AND COREQUISITES
None

REQUIRED TEXTS AND ANCILLARY MATERIALS
None

TECHNOLOGY REQUIREMENTS
None

UNIVERSITY POLICIES
Policy Statement on Non-Discrimination on the basis of Disability (ADA) The University is an equal opportunity educational institution. Please read The University’s Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.

Academic Accommodations
The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office

ACADEMIC POLICIES
The course follows the main UT policies.

COURSE EXPECTATIONS
After completing the class, students will be able to read BPG scientific literature, understand key concepts, critically interpret BPG data contained in current journal articles, and will be aware of recent scientific advances in BPG.
GRADING
Grading will be based on:
1) Ability to communicate on the key points and provide in-depth analysis of the chosen article, as demonstrated during the formal presentation (1/3).
2) Ability and willingness to analyze and discuss their scientific opinion of the data contained in the journal article or BPG seminars and the quality of these discussions as demonstrated during the roundtable discussions (1/3).
3) Written coursework comprised of the weekly quizzes and the 4 writing assignments (1/3).

COMMUNICATION GUIDELINES
The primary method of communication will be during weekly meetings, four days each week.

STUDENT SUPPORT SERVICES
Student Support Services can help students succeed in this course by providing academic services when needed in the areas of, advising, tutoring, financial resources, self-directed learning, and by directing students to other specific resources, as needed. Students can access these services by calling Student Services at, 419-383-6286.

COURSE SCHEDULE
The course will consist of weekly two-hour meetings, four days/week.

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