BIOL 5227
Biomarkers and Biotargets: Research and Commercialization (3 credits)

SYLLABUS

TEMPLE AND COVID-19
Temple University’s motto is Perseverance Conquers, and we will meet the challenges of the COVID pandemic with flexibility and resilience. The university has made plans for multiple eventualities. Working together as a community to deliver a meaningful learning experience is a responsibility we all share: we’re in this together so we can be together.

How This Course Will Be Taught
Thursday 5:30PM /7:15PM
Online class and Virtual Room (LIVE ZOOM SESSIONS): zoom link/information will be available on Canvas.

Instructor: Silvia Boffo, Ph.D.
Virtual Office hours: Please email instructors for appointments

Grading:
1. Midterm exam: 25%
   Assay on defined topics related to biomarker selection, validation and commercialization.
2. Participation and attendance: 25%
   Participation in weekly discussions and critical review of the assigned material is required. Attendance to live zoom sessions is mandatory, and punctuality is expected.
3. Portfolio presentation: 10%
   A final review of each portfolio will be presented at the end of the semester.
4. Final project: 40%
   A grant proposal or an assay on the use of innovative techniques to address selected health or environmental issues. The project will be delivered as a 5-8 page long paper and a 10 min PPT presentation.

Course description: This course focuses on the evolution of biomarker and biotarget research, with emphasis on biomarker validation and biotarget druggability. The students will differentiate between biomarkers and biotargets, analyze real-life examples of biomarkers and biotargets, especially those developed for clinical assessments and therapy. Therapeutic target databases and development of multi-target agents will be discussed. In addition, students will learn how important biotarget discoveries progress through the industry life cycle. Throughout the course, students will follow and report on a portfolio of selected biotech/pharmaceutical companies developing biological drugs. Brief updates on selected companies (new pipeline products, drug approvals, company management changes, stock fluctuations, etc.) will be conducted every week. All necessary reference materials will be provided by the instructor.

Silvia Boffo, PhD, a molecular biologist, has served as Assistant Professor in Biology at Temple University (Philadelphia) since 2015. She is originally from Venice, Italy and she has been at SHRO for more than five years, where she completed her PhD in Pharmacological Science. She received her Bachelor’s Degree and a Master’s Degree
from the University of Trieste in Italy. She also obtained a Master in Bioinnovation at Temple University in 2016. As a Postdoctoral Fellow at SHRO (Temple University, Philadelphia, PA), I carried out a project that focused on the *in vivo* study of the role of Pin1 in controls of tumor cell proliferation through the pRb and p53 proteins to develop a new drug that targets Pin1 and, in turn, affects tumor growth. In addition, she has administered another *in vivo* project for Prostate Cancer (PC), which is a heterogeneous and multifocal disease characterized by pRB function inactivation in prostate epithelium cells.

Text
No textbooks are required for this course. Material will be provided by the instructors.

Canvas
Announcements will be readily posted on Canvas. It is the student's responsibility to check Canvas periodically.

Attendance Protocol and Your Health
If you feel unwell, you should not come to campus, and you will not be penalized for your absence. Instructors are required to ensure that attendance is recorded for each in-person or synchronous class session. The primary reason for documentation of attendance is to facilitate contact tracing, so that if a student or instructor with whom you have had close contact tests positive for COVID-19, the university can contact you. Recording of attendance will also provide an opportunity for outreach from student services and/or academic support units to support students should they become ill. Faculty and students agree to act in good faith and work with mutual flexibility. The expectation is that students will be honest in representing class attendance.

Technology Requirements:
In order to participate in synchronous sessions (zoom sessions), you should have a computer, a webcam, headphones, and microphone. Recommended Internet Speed: 8mbps download & 5mbps upload. You can test your connection at [https://www.speedtest.net](https://www.speedtest.net) (Links to an external site.). Please note: Hard-wired connections are more consistent than Wi-Fi for Zoom sessions. This course may require the use of Microsoft Office (i.e., Word, Excel, PowerPoint). Students can gain access to these materials by visiting the [Computer Services Download Site](https://www.speedtest.net) (Links to an external site.). All students are required to comply with [Temple University's Computer and Network Security Policy](https://www.speedtest.net).

Limited resources are available for students who do not have the technology they need for class. Students with educational technology needs, including no computer or camera or insufficient Wi-Fi-access, should submit a request outlining their needs using the Student Emergency Aid Fund form. The University will endeavor to meet needs, such as with a long-term loan of a laptop or Wi-Fi device, a refurbished computer, or subsidized Internet access.

Academic Honesty
According to the University Student Code of Conduct, students must not commit, attempt to commit, aid, encourage, facilitate, or solicit the commission of academic dishonesty and impropriety including plagiarism, academic cheating, and selling lecture notes or other information provided by an instructor without the instructor's authorization. Violations may result
in failing the assignment and/or failing the course, and/or other sanctions as enumerated in the University Code of Conduct (Links to an external site.).

**Academic Rights and Responsibilities:**
The policy of the University that regulates “Student and Faculty Academic Rights and Responsibilities” (Policy # 03.70.02) is available at the following web link: https://www.temple.edu/secretary/sites/secretary/files/policies/03.70.02.pdf
This policy sets the parameters for freedom to learn and freedom to teach, which constitute the pillars of Academia.

**Online classroom etiquette**
Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Our differences, some of which are outlined in the University's nondiscrimination statement (Links to an external site.), will add richness to this learning experience. Please consider that sarcasm and humor can be misconstrued in online interactions and generate unintended disruptions. Working as a community of learners, we can build a polite and respectful course atmosphere.

It is expected that each student attends every class on time for the full duration of each class and behaves, in the same professional manner, as if you are in a regular classroom. This refers in particular to your location and attire. It is not appropriate to eat a large meal, drink alcohol, smoke, or get up often during an online class.

**Disability Disclosure Statement**
Please bear in mind that COVID-19 may result in a need for new or additional accommodations. Any student who has a need for accommodation based on the impact of a documented disability should contact Disability Resources and Services (DRS), Ritter Annex 100, (215) 204-1280 or 215-204-1786 (TTY) or drs@temple.edu, to make arrangements.
Students requesting accommodations should meet with the instructor as soon as possible after the start of classes to discuss their needs and to provide documentation from DRS.

**Recording and distribution of recordings of class sessions**
The course may be recorded for academic purposes. Students who do not wish to appear on the recording should speak with the instructor at office hours or before or after class. Any recordings permitted in this class can only be used for the student's personal educational use. Students are not permitted to copy, publish, or redistribute audio or video recordings of any portion of the class session to individuals who are not students in the course or academic program without the express permission of the faculty member and of any students who are recorded. Distribution without permission may be a violation of educational privacy law, known as FERPA as well as certain copyright laws.
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