



## *Faculty Fellows Program Supports Development of IPHY Learning Goals* by Jia Shi

The ASSETT<sup>1</sup> Faculty Fellows Program supports Arts and Sciences faculty members in sharing ideas and strategies to improve teaching. One of the goals of this program is to motivate educators to share pedagogy in order to reduce duplication of efforts.

During the spring 2017 semester – in the first round of this two-year program, 15 faculty fellows representing 15 individual departments met biweekly. At these meetings, faculty fellows discussed teaching, student learning, technology needs, and challenges within their departments. We shared learning exercises that individual departments had developed for their students. We realized that there are some common concepts that we need to teach students which are independent of the student's chosen field of study – such as information/data analysis and transferring knowledge to real world examples. As a result, faculty fellows decided to address these fundamental concepts in their courses.

For the remaining three semesters, faculty fellows worked and continue to work on this ASSETT supported program in their home departments. Each department selected different programs as determined by their department needs. In one program the MCDB and EBIO departments are working together to initiate a Faculty Learning Community that focuses on developing Course-based Undergraduate Research Experiences (CUREs). In another program, the ATOC department is developing teaching modules that emphasize quantitative analysis for general use across multiple courses. Additionally, the MCDB department is developing a student Journal that allows students to submit their research papers for peer review by MCDB faculty while the EBIO department is developing pedagogy training materials for undergraduate teaching assistants.

In the IPHY department, we implemented a program to develop learning goals for our lab courses and labs associated with core courses. There are two lab courses – Human Anatomy and Human Physiology plus three IPHY core courses that have labs – Biomechanics, Cell Physiology, and Exercise Physiology. With the exception of the Human Physiology Lab, none of these labs had learning goals.

We are currently in the process of developing learning goals for all our labs and we plan to share these developed learning goals with the IPHY faculty in the fall 2018 semester. These lab learning goals will help the teaching faculty to:

- 1) Understand what students need to learn in these labs
- 2) Develop specific assessment instruments to assess students' learning gain
- 3) Structure the labs to maximize learning gain
- 4) Provide cohesiveness between the labs
- 5) Visualize lab skills that may be overlapping between labs and/or need to be reinforced
- 6) Assess how the human physiology lab may affect learning gain in the other IPHY core courses that feature a lab

IPHY students will benefit from the lab learning goals as they can use these learning goals as a study tool to assess their own learning during a semester. As an example, one of the Human Physiology Lab learning goals is: "Develop a figure caption and table title that summarizes the experimental variables, comparator group/condition, methodology, sample being tested, sample size, and statistical information, as appropriate". This learning goal requires that students generate a complete figure caption and table title so that readers can identify the top-level information in the presented data prior to reading the entire lab experiment. This is an important skill as many scientists and researchers often read the figure captions and table titles first before reading a scientific journal article. This learning goal is in line with writing modern scientific journal articles where researchers often present their data with figures and tables.



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The ASSETT Faculty Fellows Program has provided a spark to ignite the lab learning goals program. Future work may involve collaborations between departments. For example, the three biology departments (IPHY, MCDB, and EBIO) are all interested in training undergraduate students in the area of teaching pedagogy. Here it would be beneficial if the three biology departments could work together – sharing resources to develop teaching materials and courses.

Our department will continue to participate in the Faculty Fellows Program as it helps to foster a greater sense of community around our educational mission.

<sup>1</sup>ASSETT: Arts and Sciences Support of Education Through Technology