Over the course of the 2019-2020 school year, CfAS staff and tutors have continued to develop our TLC Workshops for General Chemistry I, General Chemistry II, and Organic Chemistry I. The workshops are related to our existing reading enhancement programs, aka TLCs. While centered around chemistry content, these sessions continue to place an emphasis on learning strategies and critical thinking skills needed to succeed in STEM coursework.

These newly revamped workshops were first piloted in Fall 2018 for General Chemistry I followed by General Chemistry II in Spring 2019. The workshops for Organic Chemistry I were also restructured and piloted in Fall 2019. Those existing Organic Chemistry I workshops are currently undergoing further updates to be released in Fall 2020. The tutors, in conjunction with CfAS staff and Chemistry Department faculty, have learned about student challenges via peer reviewed articles and are working to adjust the sessions to meet these needs.

CfAS has collaborated with multiple faculty members in both general and organic chemistry who were seeking academic support outside of the classroom for their students. Skills emphasized in these workshops are essential for STEM majors who intend to pursue graduate school, medical school, or a variety of STEM-based careers.

When COVID-19 forced a transition to remote operations in March, CfAS continued to support our students via online sessions utilizing Zoom. When surveyed at the end of the spring semester about their workshop experience, students responded positively to this transition with 79% reporting the same level or a higher level of engagement than before the transition.
The Reading & Learning program has continued to make significant strides in developing students’ repertoire of strategies and skills. Data from the Office of Analysis and Information Management (AIM) reveals that passing rates of General Biology 1 students were higher when students completed 5 sessions in the TLC GB 1 workshop.

The Reading team has also helped students enhance their research, annotating, and paraphrasing & summarizing skills that are critical for success in the General Biology 1 lab. Data from AIM reveals that passing rates of General Biology 1 lab students were higher when students completed 5 sessions in the RWC (Read-Write-Cite) General Biology 1 workshop.

Significant strides in developing students’ repertoire of strategies and skills so they can learn how to think critically is essential. Data from AIM reveals that passing rates of General Biology 2 students were higher when students completed 5 sessions in the TLC GB 2 workshop.

The Reading & Learning program has also expanded its collaborative partnerships with the Psychology faculty, to create a 5-week series workshop. Students will learn valuable reading strategies and APA formatting skills that they can apply in their assignments for the Research Methods course.

**General Biology Lab Workshops:** the two highest concerns were related to writing the lab reports (85%) and doing research for the lab reports (68%)

**General Biology Workshops:** 90% of students who responded evaluated the workshops as a valuable tool.

### PASS RATES OF ATTENDEES VS. NON-ATTENDEES

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall '19</th>
<th>Spring '20</th>
<th>Fall '19</th>
<th>Spring '20</th>
<th>Fall '19</th>
<th>Spring '20</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSC 2010</td>
<td>97.03%</td>
<td>83.84%</td>
<td>92.04%</td>
<td>70.87%</td>
<td>95.24%</td>
<td>77.56%</td>
</tr>
<tr>
<td>BSC 2010 L</td>
<td>95.73%</td>
<td>91.73%</td>
<td>92.04%</td>
<td>80.40%</td>
<td>99.39%</td>
<td>91.73%</td>
</tr>
</tbody>
</table>

ASP students can be referred from various department on campus, including Fostering Panther Pride (FPP), Global First Year (G1Y), and the Disability Resource Center (DRC). Additionally, students are referred to activate an ASP by advisors within the College of Arts, Sciences, and Education.
CfAS has continued to offer one-on-one tutoring online after the transition to remote operations. Most undergraduate mathematics and statistics courses, and many courses in physics, computer programming, engineering, and economics are supported by the CfAS. Tutoring for Business Statistics and Analysis I and II is also available.

Research Methods and Data Analysis in Psychology I is a course that focuses on research methods and data analysis techniques in psychology. Development for academic support began in Spring 2020, addressing various concepts regarding statistical data manipulation and interpretation.

Study hall sessions are offered multiple times each week for the following courses: Trigonometry, Pre-calculus, Pre-calculus with Trigonometry, Calculus for Business, Calculus I, Calculus II, Multivariable Calculus, Calculus I for Engineering, Calculus II for Engineering, and Calculus III for Engineering, Physics with Calculus I, Physics without Calculus I, Physics with Calculus II, Physics without Calculus II, and many statistics courses.

One of the highlights of the year at CfAS was hosting the annual symposium. This year’s theme was titled, “Math-A-Morphosis: The Evolution of Perspectives in Math.” Keynote speaker, Dr. Deborah Hughes Hallett shared her expertise and insight as a Professor of Mathematics at Harvard University and the University of Arizona. She visited with CfAS for two days. The first day was dedicated to observing all the activity at the center and giving feedback on how to improve its services, particularly in the areas of mathematics. She facilitated discussions with many of the tutors and was able to share best practices from her own experiences in the classroom.

Symposium Day was an inter-departmental event that focused on how to support students from a variety of perspectives in the discipline of mathematics. Math Faculty, the Center for Advancement in Teaching, and many other presenters discussed how quantitative thinking was integral to so many aspects of academia.

Over the 2019-2020 academic year, CfAS tutors and staff members implemented the TLC for Physics I workshops and created learning strategies workshops for the Research Methods and Data Analysis in Psychology I course based on content to assist students.

FIU has launched a program, STEM STEP, that provides additional support for students in STEM majors who may not be calculus ready. For Fall 2020, CfAS created a series of workshops to address concepts that will benefit students prior to taking Calculus I or Calculus I for Engineering. These workshops will cover the vital topics from College Algebra, Trigonometry, and Pre-calculus that will be required for success in their respective calculus courses.