The Learning Resources Center (LRC) at UMBC is a campus-wide, multi-disciplinary learning center. Through our programs, we learn and succeed together by:

- Providing a dynamic location where students seek and receive academic support.
- Providing additional programs, such as Placement Testing, First-Year Intervention Alerts, and Academic Success Meetings, that support academic success throughout a student’s academic career.
- Providing training, mentoring, and opportunities for student staff to assist them in meeting their academic and career goals.
- Serving as a source of information by referring students to other campus services.
- Collaborating with our campus partners: faculty, staff, administration on research and innovations.

During our annual staff retreat, we set a strategic goal to increase our partnerships with faculty to improve our program outcomes. For example, we partnered with the Education Department to deliver two of our non-credit courses (LRC 101A and LRC 105) for academic credit (EDUC 113 and EDUC 114). Faculty from biology, physics, and chemistry partnered with us to deliver additional tutoring in the Math and Science Tutoring Center. Other faculty have a requirement that students attend a Writing Center session before turning in a written assignment.

An outcome of our FYI Advisory Committee (UMBC faculty and staff) was the Academic Success Meetings. Originally targeted to students who received an Alert from faculty through the First-Year Intervention (FYI) program when not doing well in a course, the meetings are now open to all students who want to work with an LRC staff member to improve academically.

The Supplemental Instruction/Peer-Assisted Study Session (SI PASS) program increased the number of classes that have an SI PASS component. SI PASS leaders gave a poster presentation and participated in a panel discussion at the International Supplemental Instruction Conference in Seattle, Washington this year, highlighting training for new SI PASS leaders. They described how working in the program assists them in their classes now, and how they will use the transferable leadership skills when they are applying for and attending medical school.

LRC supports students throughout their academic careers. Therefore, we encourage students to take advantage of our services so that they can succeed at UMBC and beyond.

The LRC supports UMBC students throughout their academic careers.
**Highlights**

**Math Lab becomes the Math and Science Tutoring Center**

The new name better describes the services offered in the Math and Science Tutoring Center, which includes drop-in tutoring for the following courses, based on tutor availability:

- Biology, Chemistry, Computer Science, Economics, Engineering, Math, Physics and Statistics.

Since the name change, the LRC has seen a **60% increase** in student visits for the fall semester.

**LRC 101a & 105 become EDUC 113 & 114**

These 2-credit courses will now count toward students' GPA and credits for graduation.

These “Academic Success for Lifelong Learning” courses helps students at-risk succeed at UMBC through coaching and reflection, understanding how they learn, and building study techniques and time management practices. Students are connected with campus resources and support, such as Advising and Financial Aid.

Students who participate in this “Academic Success” course are more likely to persist and graduate than similar students who do not take the course.

<table>
<thead>
<tr>
<th>Students with first semester GPA &lt; 2.0</th>
<th>No LRC 101a</th>
<th>LRC 101a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman (FY 11)</td>
<td>167</td>
<td>118</td>
</tr>
<tr>
<td>4 yr. persistence</td>
<td>29%</td>
<td>46%</td>
</tr>
<tr>
<td>6 yr. graduation</td>
<td>23%</td>
<td>31%</td>
</tr>
<tr>
<td>Transfer (FY 10)</td>
<td>163</td>
<td>55</td>
</tr>
<tr>
<td>4 yr. persistence</td>
<td>43%</td>
<td>50%</td>
</tr>
</tbody>
</table>

**BY THE NUMBERS**

**Tutoring**

10,394 Number of visits to LRC tutoring centers.

**Supplemental Instruction (SI PASS)**

21,605 Number of visits to SI PASS sessions.

**Tutors**

236 LRC employs and trains 236 tutors and SI PASS leaders.

**First Year Intervention Alerts (FYI)**

4207 Alerts sent by UMBC faculty, including resources for success.

70% of students read their alerts.
Students’ Perspectives

Top student responses to the survey question:
What have you learned in a tutoring session and used later on your own?

- New ways of studying
- New strategies for learning
- New ways of thinking about course concepts

“My tutor broke down the why of some concepts in chemistry so instead of memorizing a formula I understood why you would calculate everything.”

“The course has a lot of content and often times I didn’t grasp the information simply from the book. My tutor explained topics of the book a lot better.”

“My tutor told me to break down problems and do it step by step. I did that on the exams and I improved my score by 18 points!”
Appointment Tutoring

The LRC offers tutoring in small groups for all 100-200 level courses at UMBC. Students seeking in-depth support can make a 50-minute appointment with a tutor, and can schedule the appointments as needed or request weekly, ongoing appointments.

2747 Total Appointments
530 Unique Students

Most Often Requested Courses for Tutoring

<table>
<thead>
<tr>
<th>Course</th>
<th>Appointments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>443</td>
</tr>
<tr>
<td>Physics</td>
<td>440</td>
</tr>
<tr>
<td>Spanish</td>
<td>312</td>
</tr>
<tr>
<td>Biology</td>
<td>275</td>
</tr>
<tr>
<td>Computer Science</td>
<td>212</td>
</tr>
<tr>
<td>Math</td>
<td>158</td>
</tr>
<tr>
<td>Information Systems</td>
<td>154</td>
</tr>
<tr>
<td>Economics</td>
<td>125</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>102</td>
</tr>
<tr>
<td>French</td>
<td>60</td>
</tr>
</tbody>
</table>

Faculty Outreach

Each faculty member teaching a tutored course received communication from the LRC. Many faculty shared tutoring information in their syllabi, via Blackboard and through LRC campus visits.

Within the College of Natural and Mathematical Sciences, the faculty leading tutoring centers in Chemistry, Physics and Biology came together with the LRC staff to discuss how to best support UMBC STEM students. For example, the Biology Learning Center will support students in upper level Biology courses, while the LRC will tutor first and second year Biology courses.

Study Tree

The LRC worked with UMBC’s Department of Information Technology to pilot a smartphone-based app StudyTree, which puts scheduling tutoring sessions in students’ hands.

UMBC students download the app and log in using their MyUMBC credentials. StudyTree’s artificial learning assistant (Leon) helps students access their course schedule and available LRC resources, including tutoring and SI PASS.
Growth in Tutoring

From the beginning when tutoring occurred in hallways and the basement of the Library, to our current Math and Science Tutoring Center and Writing Center on the first floor of the Library and Appointment Tutoring rooms in Sherman Hall, student use of LRC services continues to grow.

“If you build it, they will come!”

**Growth in LRC Tutoring Contacts**

<table>
<thead>
<tr>
<th>Year</th>
<th>Appointment</th>
<th>Math Lab</th>
<th>Writing Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY 2017/18</td>
<td>2747</td>
<td>3983</td>
<td>3665</td>
</tr>
<tr>
<td>AY 2016/17</td>
<td>2763</td>
<td>3549</td>
<td>2994</td>
</tr>
<tr>
<td>AY 2015/16</td>
<td>2661</td>
<td>2664</td>
<td>3344</td>
</tr>
<tr>
<td>AY 2014/15</td>
<td>1818</td>
<td>1934</td>
<td>2926</td>
</tr>
</tbody>
</table>

**Individual Students Tutored by the LRC**

<table>
<thead>
<tr>
<th>Year</th>
<th>Appointment</th>
<th>Math Lab</th>
<th>Writing Center</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY 2014/15</td>
<td>1817</td>
<td>500</td>
<td>324</td>
<td>3030</td>
</tr>
<tr>
<td>AY 2015/16</td>
<td>2218</td>
<td>687</td>
<td>1222</td>
<td>490</td>
</tr>
<tr>
<td>AY 2016/17</td>
<td>2327</td>
<td>777</td>
<td>1368</td>
<td>530</td>
</tr>
<tr>
<td>AY 2017/18</td>
<td>1781</td>
<td>1028</td>
<td>1430</td>
<td>550</td>
</tr>
</tbody>
</table>
Math and Science Tutoring Center

The LRC offers drop-in tutoring designed to support the most high-demand math and science courses at UMBC. Tutors circulate between several students, typically offering 15 minutes of tutoring at a time, then students work independently and in groups on their work. Students can stay as long as they like, and ask questions when needed.

3983 Total Visits
1028 Unique Students

75% of visits focused on Math courses

<table>
<thead>
<tr>
<th>Top Five Most Requested Courses for Tutoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 101</td>
</tr>
<tr>
<td>MATH 150</td>
</tr>
<tr>
<td>MATH 152</td>
</tr>
<tr>
<td>MATH 155</td>
</tr>
<tr>
<td>MATH 151</td>
</tr>
</tbody>
</table>

These five courses account for 63% of all Math and Science Tutoring Center visits!

What students say after visiting the Math and Science Tutoring Center:

- 80% feel more confident in their ability for that course. (140/176)
- 82% had a better understanding of concepts covered in tutoring. (141/173)
- 81% feel better able to assess what they know and what they need to improve for that course. (141/175)

(from fall 2017 and spring 2018 surveys)

Students repeating a 100-level math course who attended the Math and Science Tutoring Center were more successful in their re-take of the course.

Other Often Requested Tutoring by Discipline

- Statistics
- Chemistry
- Computer Science
- Physics
- Economics
- Biology
- Chemistry
The LRC is dedicated to helping UMBC students with writing in any class. Students can get help at any stage in the writing process, through one-to-one tutoring sessions in person or online. The Writing Center is not an editing service, but a way for students to work on identifying areas for improvement in their writing.

3667 Total Visits
1774 Unique Students

2650 writing skills taught by tutors, applied by the students

Top skills tutored and then observed by tutors in tutoring session:

- Organization/Structure
- Thesis statements
- Citations
- Topic/Transition Sentences

87% of students stated they felt more comfortable accomplishing writing tasks independently after attending the Writing Center.

Writing Center tutors and the Writing Center Director presented in March at the Mid-Atlantic Writing Center Association Conference.

Olivia Hardy: A story session on creating a safe space in the Writing Center
Elaine MacDougall, Writing Center Director: "The Power of Silence and Stillness in Writing Center Conversations"
Supplemental Instruction (SI PASS)

The LRC partners with faculty who teach historically difficult courses to offer Supplemental Instruction, regularly scheduled Peer-Assisted Study Sessions. These informal seminars are taught by model students who have previously succeeded in the course, who attend each class, then hold weekly review sessions.

SI PASS Leaders Andrew Simpson & Dhruvil Patel

Presented at the International Conference for Supplemental Instruction in Seattle, WA

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Top student responses to the survey question:

What have you learned in a SI PASS session and used later on your own?

- New study skills
- How to practice
- How to make charts, diagrams, worksheets
- Usefulness of studying in a group

SI/PASS-Supported Courses

<table>
<thead>
<tr>
<th>BIOL 141</th>
<th>CHEM 101</th>
<th>MATH 150</th>
<th>PHYS 111</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 142</td>
<td>CHEM 102</td>
<td>MATH 151</td>
<td>PHYS 112</td>
</tr>
<tr>
<td>BIOL 302</td>
<td>CHEM 123</td>
<td>MATH 155</td>
<td>PHYS 121</td>
</tr>
<tr>
<td>BIOL 303</td>
<td>CHEM 124</td>
<td>ECON 121</td>
<td>PHYS 122</td>
</tr>
<tr>
<td>CHEM 351</td>
<td>ECON 122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SI PASS Leaders learn skills crucial for professional success, including how to:

- Explain complex concepts clearly
- Notice when people do not understand
- Train other leaders and build a team.

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21605 Total Visits
3591 Unique students
1662 Sessions Offered

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The LRC partners with faculty who teach historically difficult courses to offer Supplemental Instruction, regularly scheduled Peer-Assisted Study Sessions. These informal seminars are taught by model students who have previously succeeded in the course, who attend each class, then hold weekly review sessions.
Supplemental Instruction (SI PASS)

SI PASS Attendees have lower D/F/W rates than Non-Attendees
(% of SI PASS Attendees receiving D/F/W in course, compared to Non-Attendees, Fall 2017)

<table>
<thead>
<tr>
<th>Course</th>
<th>Treatment Effects</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 141</td>
<td>−.114 (p&lt;0.05)*  (N=307)</td>
<td>11.4 percentage points lower chance of D/F/W</td>
</tr>
<tr>
<td>CHEM 101</td>
<td>−.635 (p&lt;0.05)*  (N=787)</td>
<td>6.4 percentage points lower chance of D/F/W</td>
</tr>
<tr>
<td>PHYS 122</td>
<td>−.957 (p&lt;0.05)*  (N=209)</td>
<td>9.6 percentage points lower chance of D/F/W</td>
</tr>
</tbody>
</table>

Propensity Score Matching Estimates the Treatment Effects of Attending SI PASS on D/F/W Rates (Fall 2017)

The chance of receiving a D/F/W was reduced by attending SI PASS at least once

SI PASS is Growing
Total Contact Hours and Distinct Students

40% participation rate on average
First Year Intervention Alerts (FYI)

The LRC partners with faculty to send alerts to students who are in jeopardy of failing a course. Students receive the alert via MyUMBC, including a link to resources to help them make the necessary changes to improve their grade and become successful in their academic careers. Alerts can also be sent to non-first-year students.

**4207**
Total FYI Alerts Sent

**70%**
Alerts Read

**72%**
Faculty Section Participation

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>Average % of First Year Students Receiving Alerts</td>
</tr>
<tr>
<td>72%</td>
<td>Faculty Sections Reporting First Year Alerts</td>
</tr>
<tr>
<td>2573</td>
<td>Additional Alerts Sent to Students Enrolled Beyond the First Year</td>
</tr>
</tbody>
</table>

**Average Success Rate of FYI students**

- 60% (A, B, C, P, W)
- 41% (A, B, C, P)

**Top Student Actions**

1. Finding a tutor
2. Changing study habits
3. Studying in a group

**78%**
students surveyed named a specific strategy they employed to increase their academic standing

**35 individuals**
participated in **58 success meetings**

Academic Success Meetings

The Learning Resources Center offers on-to-one Academic Success Meetings as an intervention for students receiving alerts.

Academic Success Meetings focus on test anxiety, motivation, time management and connecting students to on-campus resources.
Tutors and Tutor Training

The Learning Resources Center staff trains almost 200 tutors each year to provide academic support to help UMBC students achieve their goals.

The LRC’s tutor training program is certified by the College Reading and Learning Association’s International Tutor Training Program Certification (ITTPC). Tutors can earn level 1, level 2 and level 3 certification.

Tutors can complete their training online or through in person coursework (Education 313/314 or English 321/323 for Writing Center Tutors).

Get to know LRC Tutors

Haythem Abdelkhalek, Information Systems major
Swimmer with UMBC’s NCAA Swimming and Diving Team

How and why did you get involved in being a tutor?
“When I transferred from the University of Rouen in France, in my first course, French 339, my professor advised me to join the Learning Resources Center as a French tutor. I thought this was a great opportunity for me to get more involved on campus, meet new people, and keep practicing my language skills.”

Kate Atwell, Math and Computer Science major
Meyerhoff Scholar, Center for Women in IT Affiliate, NSA Scholar

Why should students utilize tutoring?
“If you're not too confident about a certain topic, or don't fully understand it, we'll point you in the right direction and help you master it. Tutors can also give you advice on how best to prepare for quizzes and exams, and helpful tips to succeed in the class in general.”

Blake Hipsley, Physics major
McNair Scholar, Undergraduate Researcher with Dr. Hayden’s Research Group

Why should students utilize tutoring?
“Tutoring is a place to meet students who have succeeded where you may be struggling. Tutors are a great source of not only knowing the material for a course, but also great studying strategies and time management skills that a professor may not take the time to cover.”
Future Goals

The Learning Resources Center collaborates with faculty, staff and peer tutors/leaders to help support undergraduate student success. Currently the LRC is working with academic departments to improve the efficiency and accuracy of students’ placement into crucial first English and Math courses, and is expanding our support for Spanish courses, all of which are integral to student graduation.

The Learning Resources Center has achieved great success, with record numbers of students taking advantage of tutoring and supplemental instruction support. As UMBC grows, the Learning Resources Center must also grow to continue to offer resources supporting student success.

The Learning Resources Center is working in collaboration with campus leadership to create an Academic Success Center that will centralize learning support in one highly visible and accessible space at UMBC. UMBC’s Academic Success Center expands the LRC’s ability to work with departments to increase the number of students who take advantage of academic support, and thereby increase student persistence, graduation, and the timely completion of students’ educational plans.
The Learning Resources Center’s academic support programs provide the catalyst for students to achieve their academic goals and become independent, lifelong learners responsible for their success.