

# Using Collaboration to Support STEM

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By Marjie Simon and Jesse Rogers

# Palm Beach Gardens Student Learning Center (SLC)

- Math and Science Lab
- Supplemental Instruction (SI)
- Foreign Language
- Reading
- English/Writing
- Computer Lab (all areas)



# Math and Science Lab Strategies

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- Hire math tutors who also know science
- References from teachers for student tutors
- Schedules by subject
- Tables formed to promote group dynamics
- Computers plentiful
- Proposed satellite STEM Lab

### Chemistry, Physics, Science Tutor Schedule Spring 2015-2

Course	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>Chemistry I</b>	8:00-2:00 Sumya 8:30-3:00 Guy-Wesly 9:00-2:00 Navardo 9:30-1:30 Drew 9:30-12:00 Carlotta 10:00-3:00 Snezana 3:00-8:00 Jeffrey 3:00-8:00 Kim W	7:30-10:30 Kari 8:00-2:00 Sumya 9:30-1:30 Drew 11:00-4:00 Carlotta 12:30-2:00 Megan M 3:00-8:00 Jeffrey 6:00-8:00 Alaine	8:30-2:00 Sumya 9:00-2:00 Navardo 9:30-1:30 Drew 9:30-12:00 Carlotta 10:00-3:00 Snezana 12:30-4:00 Megan M 3:00-8:00 Kim W 4:30-8:00 Jeffrey 5:00-8:00 Brett W	7:30-10:30 Kari 8:30-12:30 Brett W 8:30-2:00 Sumya 9:30-1:30 Drew 11:00-4:00 Carlotta 1:00-8:00 Brett W 3:00-8:00 Jeffrey 3:30-8:00 Oscar 6:00-8:00 Alaine	7:30-12:00 Moaiad 9:00-2:00 Navardo 10:00-3:00 Snezana	9:00-2:00 Kari 9:00-2:00 Ruva
<b>Chemistry II</b>	8:00-2:00 Sumya	7:30-10:30 Kari 8:00-2:00 Sumya 6:00-8:00 Alaine	8:30-2:00 Sumya 5:00-8:00 Brett W	8:30-2:00 Sumya 1:00-8:00 Brett W 3:30-8:00 Oscar 6:00-8:00 Alaine	7:30-12:00 Moaiad	9:00-2:00 Kari 9:00-2:00 Ruva
<b>Organic Chem I</b>	8:00-2:00 Sumya	8:00-2:00 Sumya 6:00-8:00 Alaine	8:30-2:00 Sumya	8:30-2:00 Sumya 6:00-8:00 Alaine	7:30-12:00 Moaiad	9:00-2:00 Ashley 9:00-2:00 Ruva
<b>Organic Chem II</b>	8:00-2:00 Sumya	8:00-2:00 Sumya 6:00-8:00 Alaine	8:30-2:00 Sumya	8:30-2:00 Sumya 6:00-8:00 Alaine	7:30-12:00 Moaiad	9:00-2:00 Ashley 9:00-2:00 Ruva
<b>Biology I &amp; II</b>	8:00-2:00 Sumya 8:30-3:00 Guy-Wesly 10:00-4:00 Carlotta	7:30-10:30 Kari 8:00-2:00 Sumya 11:00-4:00 Carlotta	8:30-2:00 Sumya	7:30-10:30 Kari 8:30-2:00 Sumya 11:00-4:00 Carlotta 3:30-8:00 Oscar	7:30-12:00 Moaiad	9:00-2:00 Kari 9:00-2:00 Ruva
<b>Anatomy/ Physiology I &amp; II</b>	8:30-3:00 Guy-Wesly 10:00-4:00 Carlotta 3:00-6:00 Lori	7:30-10:30 Kari 4:30-8:00 Lori 11:00-4:00 Carlotta 12:30-2:00 Megan M	10:00-4:00 Carlotta 12:30-4:00 Megan M 3:00-6:00 Lori	7:30-10:30 Kari 11:00-4:00 Carlotta		9:00-2:00 Kari 9:00-2:00 Ruva

# Supplemental Instruction Courses

- Ophthalmology
- Biology/Microbiology
- Biotech
- Power Generation
- All Math Subjects
- Most Science Subjects



# SI at a Glance

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- 30 – 40 SI leaders (all but 2 support STEM courses)
- 3000+ contact hours/semester
- 84 – 89% pass rates for students who attend regularly (about 200 such students), compared with 60 – 70% pass rates for students who don't attend any sessions.

# Biotech Awareness Week brings local experts to Palm Beach Gardens campus

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The highlight of the week is the **Life Science Networking Reception and Career Panel** on Thursday, April 16 from 5:30 to 7:30 p.m. in the BioScience Technology Complex, Room SC127. The event will bring together industry leaders, K-12 and postsecondary educators, and PBSC graduates working in the field for an informative discussion about trends in STEM education and local biotech initiatives.

<https://palmbeachstatenews.wordpress.com/2015/04/07/biotech-awareness-week-brings-local-experts-to-palm-beach-gardens-campus/>

## **Palm Beach State awarded National Science Foundation grant to boost work-readiness for STEM fields**

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The grant-winning project is titled InnovATE, both as a reflection of its mission and a nod to the grantor: NSF's Advanced Technological Education (ATE) grant program. Designed for community colleges, the ATE program promotes partnerships between academic institutions and industry to improve the education of science and engineering technicians for high-technology fields.

<https://palmbeachstatenews.wordpress.com/2015/04/02/palm-beach-state-awarded-national-science-foundation-grant-to-boost-work-readiness-for-stem-fields/>

# STEM Lab Proposal

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1. Meet students where they are with a small presence in the Bioscience building.
2. Track and evaluate data on the courses students need the most assistance with. Ask students to vote on topics, and then host seminars based on their interest.
3. Repurpose an existing science room to be a satellite of the SLC, called the STEM Lab, and stock it with the equipment and materials from data driven decision making in step 2.

# Group Discussions

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- Q1: What is your institution currently doing to support STEM, and how effective are those efforts? Imagine anything could be changed about how you support STEM – what would you want that to be?

# Group Discussion

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“You don't have to be original to be creative. In fact, it sometimes helps to realize that no one is original. Even Mozart said that he never wrote an original melody in his life. His melodies were all recombinations of old folk melodies.”

-Steve Chandler, *100 Ways to Motivate Yourself*

Q2: What melodies can we recombine? How can we draw in ideas from other disciplines or contexts and use them to better support our STEM courses?

## Notes From Group Discussion

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John Pierson shared that Belle Glade campus of Palm Beach State does have some specialized STEM programs such as the agricultural/sugar technology program offered in partnership with FL Crystals. Additionally, the mathlab supports nursing, A&P, and physical and environmental sciences. The lab provides reviews for instrutors before tests, but John would like to see more buyin from instructors.

Paul Nolting recommended a tour of the Wolfson Campus at Miami Dade to see an impressive support lab geared to STEM. He also described the use of peer leaders, which are more on demand, are not in the class, use role play for interactions, and use STEM topics as the way to a goal. He also discussed math and science coaching using a tag team approach that appeals to auditory, visual, and kinesthetic learners.