

STEM Project Internal Evaluation June 17th, 2010

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 - I. August 4th 10:00 am – Room AD206
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 - VI. February 4th 10:00 am – Room AD206
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 - IX. May 6th 10:00 am – Room AD206
 - X. June 3rd 10:00 am – Room AD206

Math Success Center Usage Satisfaction Survey Result Report – Spring 2010

Total Participating Students: 62

Total Emails sent out: 514

Response Rate: 12.1%

Data Collection Dates: from May 17th to May 31st, 2010

Out of the 62 students who responded to the survey, 79.0% of them visited Math Success Center for Tutoring help and 21.0% of them visited the Center for Independent Study purpose.

Survey – Individual Tutoring:

1. Question 1:

Almost all of the students who responded in this question went to the Success Center for Math tutoring help (91.8%).

2. Question 2:

Out of the students who responded in this question, 65.3% of them expected either A or B for their classes, 26.5% of them expected C, and 6.1% of them expected Not Passing or Withdraw.

3. Question 3:

Out of the students who responded in this question, 26.5% of them visited the Center between 2 to 3 hours, 22.4% of them visited the Center between 1 to 2 hours, another 8.2% of them visited the Center between 3 to 4 hours, 22.4% of them visited the Center longer than 5 hours, and 20.4% of them visited the Center in less than 1 hour.

4. Question 4:

On average, 85.7% of the students who responded in this question went to the Success Center 1 to 3 times per week. At the same time, 8.2% of them visited 4 to 5 times per week and 4.1% of them visited 8 times or more per week.

5. Question 5:

The majority of the students (85.7%) felt the Success Center has helped them to improve their grades.

6. Question 6:

The majority of the students (85.7%) thought the tutors were knowledgeable in the subject they asked for help and only 2.0% of them disagreed that the tutors were knowledgeable.

7. Question 7:
Similarly, the majority of the students (79.6%) thought the tutors were helpful.
8. Question 8:
Out of the students who responded in this question, 30.4% of them thought the tutors were not friendly or not approachable. At the same time, 8.7% of them thought the tutors were not knowledgeable in the subject, 30.4% of them thought the tutors were not clear, and another 30.4% of them thought the tutors were not helpful for reasons such as language barriers, insufficient number of tutors, explained things differently from instructors, lack of patience, or talking to each other.
9. Question 9:
The majority of the students (81.6%) thought the front desk staff was friendly.
10. Question 10:
Out of the students who responded in this question, three quarters of them (75.5%) either agreed or strongly agreed that tutors were available, 20.4% of them were neutral about the availability of the tutors, and only 2.0% of them disagreed that tutors were available.
11. Question 11:
Out of the students who responded in this question, 38.8% of them did not use the textbooks, 49.0% of them agreed or strongly agreed that the textbooks were available when they requested them, and 6.1% of them disagreed or strongly disagreed that the textbooks were available when they requested them

Survey – Independent Study:

1. Question 1:
Out of the students who responded in this question, 30.8% of them visited the Center less than 1 hour, 7.7% of them visited between 1 to 2 hours, 23.1% of them visited between 2 to 3 hours, another 23.1% of them visited between 3 to 4 hours, and 15.4% of them visited longer than 5 hours.
2. Question 2:
On average, 61.5% of the students who responded in this question went to the Success Center 1 to 3 times per week, 38.5% of them visited 4 to 5 times per week, and none them visited 6 or more times per week.
3. Question 3:

The majority of the students (76.9%) felt the Success Center has helped them to improve their grades.

4. Question 4:

The majority of the students (92.4%) thought the front desk staff was friendly.

5. Question 5:

Out of the students who responded in this question, 23.1% of them did not use the textbooks, 53.9% of them either agreed or strongly agreed that the textbooks were available when they requested them, and none of them disagreed that the textbooks were available.

Survey – Tutoring (Total Response: 49 students) – Spring 2010

1. If you went to the Success Center for tutoring help, what was the main subject?

Answer	Response Percent	Response Count
Math	91.8%	45
Physics	4.1%	2
Chemistry	0.0%	0
Biology	2.0%	1
Other (statistics)	2.0%	1

2. What grade do you expect for this class this semester?

Answer	Response Percent	Response Count
A	34.7%	17
B	30.6%	15
C	26.5%	13
Not Passing	2.0%	1
Withdraw	4.1%	2
Missing	2.0%	1

3. On average, how many hours per week did you visit the Success Center?

Answer	Response Percent	Response Count
Less than 1 hour	20.4%	10
Between 1 to 2 hours	22.4%	11
Between 2 to 3 hours	26.5%	13
Between 3 to 4 hours	8.2%	4
Longer than 5 hours	22.4%	11

4. On average, how many times per week did you visit the Success Center?

Answer	Response Percent	Response Count
1 to 3	85.7%	42
4 to 5	8.2%	4
6 to 7	0.0%	0
8 or more	4.1%	2
Missing	2.0%	1

5. In general, do you feel the Success Center has helped to improve your grade?

Answer	Response Percent	Percent Count
Yes	85.7%	42
No	12.2%	6
Missing	2.0%	1

6. The tutors were knowledgeable in the subject you asked for help.

Answer	Response Percent	Response Count
Strongly Agree	59.2%	29
Agree	26.5%	13
Neutral	12.2%	6
Disagree	0.0%	0
Strongly Disagree	2.0%	1

7. The tutors were helpful.

Answer	Response Percent	Response Count
Strongly Agree	49.0%	24
Agree	30.6%	15
Neutral	16.3%	8
Disagree	0.0%	0
Strongly Disagree	4.1%	2

8. If the tutors were not helpful, what was the reason (23 Responses)?

Answer	Response Percent	Response Count
Not friendly or not approachable	30.4%	7
Not knowledgeable in the subject	8.7%	2
Not clear	30.4%	7
Other	30.4%	7

Other (please specify) (7 Responses)

- speak too fast, hard to understand accent.
- Sometimes they could not help me because my class had a new casio that does things in a very different way then you woud do Stats without it
- sometimes tutors are too busy. spends too much time on one person at the expense of another, maybe need at least three tutors, but overall good, if you can get help.
- didnt go by my notes
- For some it's been a while since they took 151 so they have to recall or ask another tutor. They are however very knowledgeable

- Tutors were great at math but were unsatisfactory at teaching it. Especially with patience
- Talking to each other and not paying attention to the students raising hands.

9. The front desk staff was friendly.

Answer	Response Percent	Response Count
Strongly Agree	40.8%	20
Agree	40.8%	20
Neutral	8.2%	4
Disagree	8.2%	4
Strongly Disagree	0.0%	0
Missing	2.0%	1

10. Tutors were available when you asked for help.

Answer	Response Percent	Response Count
Strongly Agree	28.6%	14
Agree	46.9%	23
Neutral	20.4%	10
Disagree	2.0%	1
Strongly Disagree	0.0%	0
Missing	2.0%	1

11. The textbooks were available when you requested them.

Answer	Response Percent	Response Count
N/A	38.8%	19
Strongly Agree	24.5%	12
Agree	24.5%	12
Neutral	2.0%	1
Disagree	4.1%	2
Strongly Disagree	2.0%	1
Missing	4.1%	2

Survey – Independent Study (Total Response: 13 students) – Spring 2010

1. On average, how many hours per week did you visit the Success Center?

Answer	Response Percent	Response Count
Less than 1 hour	30.8%	4
Between 1 to 2 hours	7.7%	1
Between 2 to 3 hours	23.1%	3
Between 3 to 4 hours	23.1%	3
Longer than 5 hours	15.4%	2

2. On average, how many times per week did you visit the Success Center?

Answer	Response Percent	Response Count
1 to 3	61.5%	8
4 to 5	38.5%	5
6 to 7	0%	0
8 or more	0.0%	0

3. In general, do you feel the Success Center has helped to improve your grade?

Answer	Response Percent	Response Count
Yes	76.9%	10
No	23.1%	3

4. The front desk staff is friendly.

Answer	Response Percent	Response Count
Strongly Agree	46.2%	6
Agree	46.2%	6
Neutral	7.7%	1
Disagree	0.0%	0
Strongly Disagree	0.0%	0

5. The textbooks were available when you requested them.

Answer	Response Percent	Response Count
N/A	23.1%	3
Strongly Agree	30.8%	4
Agree	23.1%	3
Neutral	23.1%	3
Disagree	0.0%	0
Strongly Disagree	0.0%	0

Question 13: Please tell us what we can do to serve you better:

Themes:

Tutor Related Issues

Approachability

Attitudes need improvement.

Some tutors have a very condescending attitude, please realize if we go there is for help and it is more frustrating when the tutors sigh and solve the problem without explaining. If I wanted the answers I can find them at the end of most math books.

I wish the tutors paid more attention to the people raising hands because they are either texting or talking to each other and often times, I have to wait a while before I can get help.

Most of your tutors are friendly and helpful. There are a couple who are arrogant and condescending.

First, make sure that the tutors look up and see if someone else is in need of help, not just the one they have been with for ten minutes plus.

Subject Knowledge

Make sure the tutors know the subject. Many say that they took the class before and forgot how to work the problem

Teaching Methods

Teach tutors better "teaching strategies"

Have more individual tutoring and clearer representation of tutors. Also when asked, the tutors would simply solve the problem asked of them, maybe if they would give different examples of how to solve the the problem instead of just giving an answer.

It would be nice for the tutor to not assume we understand everything they say.

make sure the tutors instruct in the same manner that the professors do

More Space Or More Tutors Or Longer Hours

I would like it if there were more stats tutors. Since there is only ever one stats tutor at a time when I am there on Tuesday and Thursday then if they are busy with another student I have to wait. Sometimes the wait is not very long at all and other times the wait can be long. I do understand though that many math majors (those who would choose to tutor usually) do not normally take stats and I also know that whoever the stats tutors are helping deserve their time just as much as anyone else in the center. It would just be nice to not be so limited in my options of who can and cannot help me.

more tutors for busy days

Have more tutors and have tutors that speak good English

The Math Center tends to get a bit loud at times with so many people talking. Some students think its a place to chat with friends. There needs to be more of a "library" structure where its quiet and conducive to study. Maybe there should be individual cubicals versus big tables. Also there needs to be more tutors available. I've seen only 2 turtors there at times when its full. Very difficult to concentrate with so many loud students and so little tutors.

I think you should have a fourth so that people can get help a lot faster than they would if there were only three.

If there was more space. At times it gets pretty full.

Longer hours! Needs to be open later, I work full time and it closes too early. It would be nice if it was open on a weekend day, even if only a few hours.

Positive Feedback

The math success center was very helpful to me this semester and I do credit it for being part of the reason that I am passing my stats class Overall I love the math success center and I am very thankful for its services.

overall tutoring is conducted by qualified individuals, and immensely helps with studies!

I think the tutors are great! They really helped me out a lot! I couldn't get through my math without them!

very helpful atmosphere to study and learn in!

Love the open door, walk-in policy. The tutors are great! Such an awesme service for students!

Everything is great in the math tutoring center, I do not recommend you change a thing. The tutors are very helpful and the desk staff is friendly. I have been going to the center for help since I started in math 150, now I am in math 210 and have gotten "A's" so far in all my math classes. Two tutors that have been very helpful to me are Tian and Matthew, these two tutors have given me the confidence to progress and do

well in future studies. Thank you for offering such a great resource to students.

Nothing, it's a well organized program.

I was very satisfied with all my tutors. Each one of them brought something personal to implement their knowledge of the subject. I am extremely grateful to the college for offering such a resource.

everything is good

Other

If the student forgets their id, they should still be able to sit down and do homework or study without a tutor.

I'd like to be able to use the teachers manual, as it has step by step directions and proves to be quite helpful when I am not sure how to approach a problem. I was told we could not check it out anymore because someone had stole one.

STEM Center Usage Satisfaction Survey Result Report – Spring 2010

Total Participating Students: 87

Total Emails sent out: 788

Response Rate: 11.0%

Data Collection Dates: from May 17th to May 31st, 2010

Out of the 89 students who responded to the survey, 66.7% of them visited the STEM Center for SI Review Sessions, 12.6% of them visited the Center for Tutoring help, 11.5% of them visited the Center for Independent Study, and 9.2% of them visited the Center for Focus-on-Calculus Peer Mentoring Program.

Survey – SI Review Sessions:

1. Question 1:

Out of the students who responded in this question, most students went to the STEM Center for BIOL105, Math150, Math130, BIOL200, and BIOL201 classes.

2. Question 2:

Out of the students who responded in this question, 60.4% of them attended SI sessions 2 or more times per week on average and 39.7% of attended SI sessions 1 time per week on average.

3. Question 3:

The majority of the students (84.5%) felt they achieved a better understanding of the course material as a result of attending SI review sessions.

4. Question 4:

The majority of the students (82.8%) felt they performed better on the class exams as a result of attending SI review sessions.

5. Question 5:

The majority of the students (89.6%) felt the SI Leaders for their classes were helpful.

6. Question 6:

Everyone (93.1%) thought the SI Leaders were knowledgeable.

7. Question 7:

The majority of the students (86.2%) enjoyed attending SI review sessions in the STEM Center.

8. Question 8:
Out of the students who responded in this question, over half of them (58.1%) used computers in the STEM Center and a quarter of them (23.3%) used textbooks.
9. Question 9:
The majority of the students (70.7%) thought the front desk staff was friendly.

Survey – Tutoring:

1. Question 1:
Out of the respondents, four went in for Biology help and one went in for Chemistry help.
2. Question 2:
The majority of the students who responded in this question went to the Center either between 1 to 2 hours, between 2 to 3 hours, or between 3 to 4 hours.
3. Question 3:
Over a quarter of the students (27.3%) visited a tutor twice a week.
4. Question 4:
The majority of the students (90.9%) thought the tutors were knowledgeable.
5. Question 5:
Similarly, the majority of the students (90.9%) thought the tutors were helpful.
6. Question 6:
One respondent answered this question and the reason is that the tutor was not friendly or not approachable.
7. Question 7:
The majority of the students (81.9%) thought the tutors helped them improve their grades.
8. Question 8:
Most respondents (83.3%) used computer in the Center.
9. Question 9:
The majority of the students (81.8%) thought the front desk staff was friendly.

Survey – Others:

1. Question 1:
Out of the students who responded in this question, 55.6% of them visited the Center either longer than 5 hour or between 3 to 4 hours.
2. Question 2:
The majority of the students (61.1%) visited the Center between 1 to 3 times a week.
3. Question 3:
The majority of the students (94.5%) thought the Center helped them improve their grades.
4. Question 4:
The majority of the students (94.1%) used computer in the Center and 41.2% of them used textbooks.
5. Question 5:
The majority of the students (88.9%) thought the front desk staff was friendly.

Survey – SI Review Sessions (Total Response: 58 students) – Spring2010

1. If you attended SI review sessions in the STEM Center in Spring2010, what class was this for?

Answer	Response Percent	Response Count
ASTR115	3.4%	2
ASTR116	3.4%	2
BIOL105	41.4%	24
BIOL200	8.6%	5
BIOL201	8.6%	5
BIOL220	5.2%	3
CHEM103	5.2%	3
CHEM 110	0.0%	0
CHEM 111	6.9%	4
CHEM 112	6.9%	4
MATH130	8.6%	5
MATH150	10.3%	6
MATH170	0.0%	0
PHYS110	1.7%	1
PHYS201	3.4%	2

8. On average, how many SI sessions did you attend PER WEEK in the STEM Center?

Answer	Response Percent	Response Count
One	39.7%	23
Two	46.6%	27
Three or more	13.8%	8

9. As a result of attending SI review sessions, I achieved a better understanding of the course material.

Answer	Response Percent	Response Count
Strongly agree	44.8%	26
Agree	39.7%	23
Neutral	8.6%	5
Disagree	5.2%	3
Strongly disagree	1.7%	1

10. As a result of attending SI review sessions, I performed better on the class exams.

Answer	Response Percent	Response Count
Strongly agree	46.6%	27
Agree	36.2%	21
Neutral	6.9%	4
Disagree	5.2%	3
Strongly disagree	3.4%	2

Missing	1.7%	1
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11. The SI leader for my class was helpful.

Answer	Response Percent	Response Count
Strongly agree	60.3%	35
Agree	29.3%	17
Neutral	5.2%	3
Disagree	1.7%	1
Strongly disagree	3.4%	2

12. The SI leader for my class was knowledgeable.

Answer	Response Percent	Response Count
Strongly Agree	65.5%	38
Agree	27.6%	16
Neutral	5.2%	3
Disagree	0.0%	0
Strongly Disagree	0.0%	0
Missing	1.7%	1

13. I enjoyed attending SI review sessions in the STEM Center.

Answer	Response Percent	Response Count
Strongly Agree	43.1%	25
Agree	43.1%	25
Neutral	5.2%	3
Disagree	5.2%	3
Strongly Disagree	1.7%	1
Missing	1.7%	1

9. What other services/resources did you take advantage of in the STEM Center? (36 respondents)

Answer	Response Percent	Response Count
Computers	69.4%	25
Human anatomy models and bones	16.7%	6
Textbooks	27.8%	10
Science DVDs and/or science periodicals	5.6%	2

12. The front desk staff was friendly.

Answer	Response Percent	Response Count
Strongly Agree	46.6%	27
Agree	24.1%	14
Neutral	24.1%	14
Disagree	1.7%	1
Strongly Disagree	1.7%	1
Missing	1.7%	1

Survey – Tutoring (Total Response: 11 students) – Spring 2010

1. If you were to the STEM Center for tutoring help in Fall09, what was the main subject?

Answer	Response Percent	Response Count
Biology	36.4%	4
Chemistry	9.1%	1
Missing	54.5%	6

2. On average, how many hours PER WEEK did you visit a tutor in the STEM Center?

Answer	Response Percent	Response Count
Less than 1 hour	9.1%	1
Between 1 to 2 hours	27.3%	3
Between 2 to 3 hours	27.3%	3
Between 3 to 4 hours	27.3%	3
Longer than 5 hours	0.0%	0
Missing	9.1%	1

3. On average, how many times PER WEEK did you visit a tutor in the STEM Center?

Answer	Response Percent	Response Count
Once a week	18.2%	2
Twice a week	27.3%	3
Three times a week	18.2%	2
Four times a week	18.2%	2
Five times a week or more	9.1%	1
Missing	9.1%	1

4. The tutor was knowledgeable.

Answer	Response Percent	Response Count
Strongly agree	72.7%	8
Agree	18.2%	2
Neutral	0.0%	0
Disagree	0.0%	0
Strongly disagree	0.0%	0
Missing	9.1%	1

5. The tutor was helpful.

Answer	Response Percent	Response Count
Strongly agree	54.5%	6
Agree	36.4%	4
Neutral	0.0%	0
Disagree	0.0%	0
Strongly disagree	0.0%	0
Missing	9.1%	1

6. If the tutor was NOT helpful, what was the reason? (1 respondent)

Answer	Response Percent	Response Count
Not friendly or not approachable	100.0%	1
Not knowledgeable in the subject	0.0%	0
Not clear	0.0%	0
Other	0.0%	0

7. In general, your visits with a tutor in the STEM Center helped improve your overall course grade.

Answer	Response Percent	Response Count
Strongly agree	45.5%	5
Agree	36.4%	4
Neutral	9.1%	1
Disagree	0.0%	0
Strongly disagree	0.0%	0
Missing	9.1%	1

8. What other services/resources did you take advantage of in the STEM Center? (6 respondents)

Answer	Response Percent	Response Count
Computers	83.3%	5
Human anatomy models and bones	16.7%	1
Textbooks	0.0%	0
Science DVDs and/or science periodicals	0.0%	0

9. The front desk staff is friendly.

Answer	Response Percent	Response Count
Strongly agree	54.5%	6
Agree	27.3%	3
Neutral	9.1%	1
Disagree	0.0%	0
Strongly disagree	0.0%	0
Missing	9.1%	1

Survey –Focus on Calculus Peer Mentoring Program and Independent Study (Total Response: 18 students) – Spring 2010

1. On average, how many hours PER WEEK did you spend in the STEM Center?

Answer	Response Percent	Response Count
Less than 1 hour	16.7%	3
Between 1 to 2 hours	0.0%	0
Between 2 to 3 hours	27.8%	5
Between 3 to 4 hours	16.7%	3
Longer than 5 hours	38.9%	7

2. On average, how many times PER WEEK did you the STEM Center?

Answer	Response Percent	Response Count
1 to 3	61.1%	11
4 to 5	16.7%	3
6 to 7	11.1%	2
8 or more	11.1%	2

3. In general, your visits to the STEM Center helped improve your grades.

Answer	Response Percent	Response Count
Strongly agree	38.9%	7
Agree	55.6%	10
Neutral	5.6%	1
Disagree	0.0%	0
Strongly disagree	0.0%	0

4. What other services/resources did you take advantage of in the STEM Center? (17 respondents)

Answer	Response Percent	Response Count
Computers	94.1%	16
Human anatomy models and bones	11.8%	2
Textbooks	41.2%	7
Science DVDs and/or science periodicals	17.7%	3

5. The front desk staff was friendly.

Answer	Response Percent	Response Count
Strongly agree	72.2%	13
Agree	16.7%	3
Neutral	5.6%	1
Disagree	5.6%	1
Strongly disagree	0.0%	0

Open Question: Please tell us what we can do to serve you better:

Themes:

Space Issue

The spacing was sometimes a bit to small. Different SI leaders were to close were it made it hard to hear. SI really helps. Thank you.

More SI classrooms

During Bio 201 SI sessions, there was another SI session going on behind us that was always loud and it made it difficult to hear or listen to my SI leader. I would suggest to give the SI leaders the power to terminate a session if the group cannot keep it down and also to make the SI leaders understand that they are in charge.

I feel that more sessions would mean more success. There were times when there would be an SI session behind us and sometimes those student would deviate from their topic and in doing so they would sometimes get a little loud with stories of their personal life. The noise would always interupt our sessions discussions. Other than that, our SI leader was excellent and extremely helpful in a group and one on one setting. I never left SI with unanswered questions.

Bigger stem center :)

if you use the stem center it to noisy to study I will not use. Or leader is lucky the professor let us use his class room.

More rooms

Session Time or Center Hours

I loved the SI for my Astronomy class, however I wish I could have attended SI for my Math 170 class, but the SI leader did not have a diverse schedule. It would be nice if he had at least one different time than right before class, which many of us could not make

Extend the axes to more hours, like Saturdays and earlier start times. This will benefit a lot of students!

overall stem center is good but sometimes the hours for tutors is very limited and cuts into other class times, but i guess it cant be helped. it would be nice to have more avaiable session times.

SI Leader

The stem center is great, and I believe that it is very helpful for a lot of people, however, I didn't feel like I had a good experience with the SI sessions due to a leader who wasn't prepared with HELPFUL information and who did not know the answers to some important & basic questions.

I have changed my studying to the Math Success Center I have not had much luck with the SI Assistant. He either ignores me or does not stay past an hour. I have had better success in the Tutorial Center and the Math Success Center.

Subject Issue

the times were difficult to attend and not all classes offer si. i wish it were available for math 165.

Keep STEM center up, and possibly add SI for different subjects

Positive Feedback

if it wasn't for SI I wouldn't be doing as well as I am. Thanks to Wendy and Cheri for all their patiences and support!

Continue to offer great SI leaders!!!

I am grateful for the SI leaders and all the hard work you do. I would try to see how to improve the sign in process

At this time I am not sure the STEM center can do anything better. So far I am very happy with the way its ran. When I transfer I will certainly look for a resource like this!

It is a perfect resource for students. Well organize and Good to have. Thanks.

You're doing a great job! Keep up the good work!

Keep the STEM center open! It is an amazing resource for science majors and I love all that the STEM center is about.

GREAT PROGRAM!! LUCIA RIDERER IS THE BEST!!!!

Others

some things more people, leader doesn't have more time to respond. because different people have different questions they need to solve. I think no more than 5 that will be better.

everything was great. Maybe get some new chalk pens and another chalk board.

nobody knows what the STEM center is

Make the room warmer.

Tutoring dates for chapters, that correspond to teachers syllabus

Some people like Preston and others continually distract my mentor and keep us from studying and helping me with the subjects. I feel like I learn less because it takes so long for my mentor to teach me something because Preston keeps on interrupting with meaningless chit chat.

MA 127 Math Success Center Usage Report Winter, Spring, Fall 2009, & Spring 2010

Table 1. Aggregated Usage Frequency Table for Math Success Center in Winter 09, Spring 09, Fall 09, Spring 2010 Semesters

	Average/Mean	Median	Minimum	Maximum
Winter 09 (Jan 20 th – Feb 12 th)	2 hrs + 57 mins	1 hr + 35 mins	2 min	18 hrs + 13 mins
Spring 09 (Feb 23 rd – June 2 nd)	7 hrs + 52 mins	2 hrs + 38 mins	1 min	132 hrs + 22 mins
Fall 09 (Aug 28 th – Dec 19 th)	7 hrs + 55 mins	3 hrs + 10 mins	1 min	136 hrs + 28 mins
Spring 2010 (Feb 16 th – June 12 th)	9 hrs + 1 mins	2 hrs + 56 mins	1 min	133 hrs + 57 mins

Table 2. Aggregated Usage Breakouts for Math Success Center in Winter 09, Spring 09, Fall 09, and Spring 2010 Semesters

	< 1 hour	1 to 3 hrs	3 to 6 hrs	6 to 10 hrs	10 to 20 hrs	20 to 40 hrs	40 to 80 hrs	80+ hrs	Total Students
Winter 09 (Jan 20 th – Feb 12 th)	37 (31.1%)	47 (39.5%)	19 (16.0%)	10 (8.4%)	6 (5.0%)	0	0	0	119
Spring 09 (Feb 23 rd – June 2 nd)	166 (24.0%)	199 (28.7%)	110 (15.9%)	60 (8.7%)	90 (13.0%)	43 (6.2%)	21 (3.0%)	4 (0.6%)	693
Fall 09 (Aug 28 th – Dec 19 th)	153 (21.5%)	190 (26.7%)	117 (16.4%)	87 (12.2%)	98 (13.8%)	42 (5.9%)	22 (3.1%)	3 (0.4%)	712
Spring 2010 (Feb 16 th – June 12 th)	141 (22.3%)	179 (28.3%)	90 (14.2%)	69 (10.9%)	73 (11.5%)	51 (8.1%)	22 (3.5%)	8 (1.3%)	633

Notes:

1. In Winter 09 semester, there are 2.8% usages in which students did not log out (N=10 out of 353). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=48).
2. In Spring 09 semester, there are 2.4% usages in which students did not log out (N=101 out of 4,165). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=62).
3. In Fall 09 semester, there are 4.9% usages in which students did not log out (N=211 out of 4,309). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=61).
4. In Spring 2010 semester, there are 3.3% usages in which students did not log out (N=141 out of 4,221). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=63).
5. There are 6 weeks in Winter 09 semester, 16 weeks in Spring 09 semester, 16 weeks in Fall 09 semester, and 16 weeks in Spring 2010 semester.

MA 130 STEM Success Center Usage Report Fall 2009, Winter 2010, and Spring 2010

Table 1. Aggregated Usage Frequency Table for STEM Success Center in Fall 09, Winter 2010, & Spring 2010 Semesters

	Average/Mean	Median	Minimum	Maximum
Fall 09 (Aug 28 th – Dec 19 th)	7 hrs + 30 mins	2 hrs + 45 mins	1 min	83 hrs + 24 mins
Winter 2010 (Jan 4 th – Feb 11 th)	1 hr + 34 mins	1 hr + 5 mins	1 min	9 hrs + 14 mins
Spring 2010 (Feb 16 th – June 12 th)	6 hrs + 37 mins	3 hrs + 26 mins	1 min	71 hrs + 56 mins

Table 2. Aggregated Usage Breakouts for STEM Success Center in Fall 09, Winter 2010, & Spring 2010 Semesters

	< 1 hour	1 to 3 hrs	3 to 6 hrs	6 to 10 hrs	10 to 20 hrs	20 to 40 hrs	40 to 80 hrs	80+ hrs	Total Students
Fall 09 (Aug 28 th – Dec 19 th)	155 (19.1%)	265 (32.7%)	118 (14.5%)	75 (9.2%)	114 (14.1%)	64 (7.9%)	19 (2.3%)	1 (0.1%)	811
Winter 2010 (Jan 4 th – Feb 11 th)	20 (33.9%)	32 (54.2%)	6 (10.2%)	1 (1.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	59
Spring 2010 (Feb 16 th – June 12 th)	180 (20.2%)	233 (26.1%)	178 (19.9%)	111 (12.4%)	122 (13.7%)	61 (6.8%)	8 (0.9%)	0 (0.0%)	893

Notes:

1. In Fall 09 semester, there are 4.4% usages in which students did not log out (N=246 out of 5,565). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=60).
2. In CI-Tracker, LocationID is MA130 and CategoryName is STEM Success Center, General_Course_work, and Math Success Center Tutoring.
3. In Spring 2010 semester, there are 10.2% usages in which students did not log out (N=545 out of 5,360). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=59).

A List of STEM Courses

Anthropology:

ANTH 212: Introduction to Physical Anthropology

Biology:

Bio 124: Principles of Biology

Bio 125: Principles of Biology II

Chemistry:

CHEM 111: General Chemistry

CHEM 112: General Chemistry

CHEM 210: Organic Chemistry

CHEM 220: Organic Chemistry

Earth Science:

ESCI 120: Physical Geology

ESCI 125: California Geology

Forestry:

FOR 101: Introduction to Forestry

FOR 102: Introduction to Forest Ecology

FOR 103: Plant Identification

FOR 104: Introduction to Outdoor Recreation

FOR 105: Wildland Fire Management

FOR 106: Principles of Wildlife Management and Ecology

Physics:

PHYS 201: Physics

PHYS 202: Physics

PHYS 203: Physics

How effective is the Supplemental Instruction program? *An evaluation study at a community college using mixed methods*

Association for Institutional Research Annual Forum
Chicago, Illinois
May 31st, 2010

Sunny Liu, Ph.D.

Lan Hao, Ph.D.

Office of Institutional Research

Citrus College



1

Introduction - Supplemental Instruction

- **Origin:** Developed by Dr. Deanna Martin in 1973 at the University of Missouri at Kansas City (UMKC)
- **Purpose:** To increase student performance and retention in traditionally difficult academic subjects (DFW rates greater than 30%)
- **Development:** According to the International Center of Supplemental Instruction at UMKC, SI programs have been implemented in over 1800 institutions in 30 countries so far.

2

Introduction - Continued

- Theoretical Pillars of SI:
 - Behavioral Learning Theory (e.g. Bandura)
 - Cognitive Developmental Theory (e.g. Piaget)
 - Social Interdependence Theory (e.g. Vygotsky & Erickson)
- Documented Benefits:
 - Short-term: increasing course academic performance (Feinn, 2004; Kochenour et al., 2007)
 - Long-term: increasing academic performance in subsequent courses (Gattis, 2000), graduation rates (Bowles, McCoy, & Bates, 2006), retention and persistence rates (Arendale, 1997; Peterfreund, Rath, Xenos, & Bayliss, 2008), study strategies (Eberling, 1998), and motivation and engagement (Mack, 2008; Peacock, 2008)

3

Study Purpose

- The collaboration between IR and SI program personnel in continuously improving the implementation of the SI program
- The use and benefits of multiple-stage-exploratory mixed methods in the evaluation process
- The unique characteristics of community college students and their impact on the implementation of the SI Program

4

Research Questions

- **Short-term benefits:**
 - Do SI attendants achieve better academic performance than non-SI attendants?
 - Is the retention rate higher among SI attendants than non-SI attendants in the course they enroll?
- **Long-term benefits:**
 - Are the persistence rates higher for SI attendants?
 - Do SI attendants achieve better academic performance than non-SI attendants in subsequent science courses?
 - Is it more likely for SI attendants to transfer?
 - Is it more likely for SI attendants to get an associate degree (AA/AS)?
- What are SI attendants' experiences with this program?

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SI At Citrus College

- Supported by the CCRAA HSI STEM grant, SI has been implemented as part of the effort to build a STEM pathway for students.
- SI Program:

SI Supervisor
SI Mentor
SI Leader
Students
- Implemented in Five Semesters:
 - Spring 2009, Summer 2009, Fall 2009, Winter 2010, & Spring 2010
- Evaluation Team

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Program Structure

Term	Courses	Sessions	Personnel
Spring 2009	Biology (General & Microbiology)	12	Supervisor: 1 SI Leaders: 9
Fall 2009	Astronomy (Planetary Astronomy) Biology (General & Anatomy) Chemistry (College & General) Mathematics (Elementary Algebra)	28	Supervisor: 1 SI Leaders: 24
Spring 2010	Astronomy (Planetary & Stellar) Biology (General, Anatomy, Physiology, & Microbiology) Chemistry (College & General) Mathematics (Elementary, Intermediate, & College Algebra) Physics (Intro to college Physics & Physics)	46	Supervisor: 1 SI Mentors: 2 SI Leaders: 26

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Data

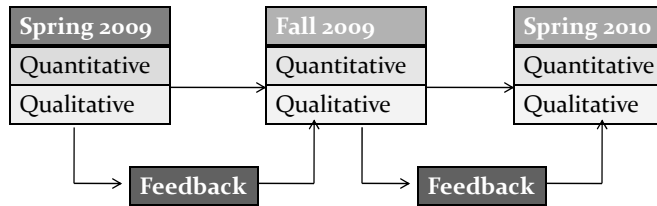
Quantitative: Students enrolled in courses with SI

	Spring 2009	Fall 2009	Spring 2010
SI Participants:	150 (27.5%)	553 (42.2%)	573 (sci.) (39.3%)
Non SI:	395 (72.5%)	758 (57.8%)	885 (sci.) (60.7%)
Total:	545 (100%)	1,311 (100%)	1458 (sci.)

Qualitative: SI Attendants and SI Leaders who signed up for the interviews

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Methodology



- Qualitative: In-depth Interview
- Quantitative: Descriptive Statistics, Chi-square Test, Logistic Regression, etc.

9

Spring 2009 Quantitative Study Results – Short-term (1)

	Non-SI (n=395)	SI (n=150)		
Frequency of Attendance	0	<3	3-16	17-49
		81	60	9
		54%	40%	6%
Success Rate*	65.6%	74.7%		
Retention Rate	91.9%	95.3%		

Note: *The Chi-square test is significant at the 95% level with a small effect ($\phi=0.087$)

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Spring 2009 Quantitative Study Results – Short-term (2)

Descriptive Statistics for the Variables in the Logistic Regression

		Non-SI		SI	
		Freq	%	Freq	%
Gender	Male	156	39.4%	51	34.2%
	Female	235	59.3%	95	63.8%
Ethnicity	Asian	48	12.1%	19	12.8%
	Hispanic	144	36.4%	53	35.6%
	White	123	31.1%	45	30.2%
	Other	44	11.1%	19	12.8%
SES	Low	85	21.5%	33	22.1%
	Not Low	311	78.5%	116	77.9%
		Mean	SD	Mean	SD
	Age	22.8	4.4	26.5	8.1
	Pre GPA	2.45	0.97	2.72	0.96
	Unit Load	10.9	3.7	10.5	3.9

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Spring 2009 Quantitative Study Results – Short-term (3)

Predictor	B	SE	Exp (B)
Intercept	-1.923	.916	
Gender	.145	.231	1.157
Asian	-.662	.397	.516
Hispanic**	-.873	.269	.418
Other**	-1.387	.367	.250
Age*	.058	.028	1.060
LowSES	-.222	.260	.801
Pre GPA**	.830	.127	2.294
Unit Load	-.013	.033	.987
Participating in SI	.228	.271	1.256

Note:

*Significant at the 95% level

**Significant at the 99% level

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Spring 2009 Quantitative Study Results – Short-term (4)

Predictor	B	SE	Exp (B)
Intercept	-1.841	.915	
Gender	.159	.232	1.173
Asian	-.739	.401	.478
Hispanic**	-.876	.269	.416
Other**	-1.436	.371	.238
Age	.054	.028	1.056
LowSES	-.209	.262	.812
Pre GPA**	.806	.126	2.240
Unit Load	-.011	.033	.989
SI Frequency*	.128	.065	1.136

Note:

*Significant at the 95% level

**Significant at the 99% level

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Spring 2009 Quantitative Study Results – Long-term

	Non-SI	SI
Persistence Rate ¹	32.1%	33.6%
Success Rate in Subsequent Science Courses	69.2%	72.6%

Note:

1. Persistence rate is the percent of students who enrolled in a science course in Summer 2009 or Fall 2009.

2. Neither the persistence rate nor the success rate is significant.

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Spring 2009 Qualitative Study Results – Positive Experience

- **Better performance**

"Usually I got like Bs in all my classes. But now it's no way. It's like I always get As in all my tests." (Mary Kay)

- **Better understanding of the course materials**

"I like it because it helped to explain the materials better. Teachers just give out the information, but they (SI leaders) explain things more in detail." (Sam Warner)

- **Learning from different perspectives**

"I think it's nice to have different perspectives also ... It's kind of ways to open up your mind to your study and look at different ways to really understand it. It's a nice thing ... So it was not the book who took me one step beyond." (Vivian Mighty)

- **Staying more focused**

"Yes, because at home when I study, I easily got distracted. But I know when I was there, that's all I was focused on. So it really helps." (Mary Kay)

- **Increasing confidence**

"I'm always kind of pessimistic at the first, because it sounds so overwhelming. But once you go through it, then you feel better about it as you go through it." (Mike Orchard)

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Spring 2009 Qualitative Study Results – Contributing Factors to a successful SI program

- **Self-motivation**

"So I think people who really go to the sessions are the ones who really are interested in understanding the stuff and who are going to get a better grade. It's really hard to tell because giving you a better grade or she or he is the kind of person to begin with." (Vivian Mighty)

- **Frequency of attendance**

"At least two or three (times per week)." (Sam Warner)

- **SI leaders' styles**

"Yeah, I crave [for] the structure and consistency, that's why I go to the same SI leader. I crave consistence whenever I learn something. I went deeply in every single bit of detail before I can get it." (Mike Orchard)

- **SI session strategies**

"For me, she handed out outlines and materials that are most helpful." (Neal Shepherd)

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Qualitative Study Results – Suggested Improvement for Future SI Sessions

- **Flexible session times**

“No, you can go three days... And I only go Mondays and Wednesdays because I work. I work around my schedule.” (Mary Kay)

- **Better advertising**

“Just make it sound like more important because you know I feel like not enough people thought it is important enough. You know saying that it improves your grade 10% by going to five times at the end.” (Mike Orchard)

- **Promoting favorable SI leaders’ styles**

“I think there are certain SI leaders that come with more for you to kind of do. Like Emily, she comes with her sheets, so we have lots of more things we get to work together.” (Vivian Mighty)

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Addressing Challenges in Fall 2009

- **Recruitment**

- Convenient Session times (Either immediate before or after class lectures)
- New STEM Center
- STEM Open House
- STEM Guest Speaker Series
- Distributed SI informational brochure on the first day of classes in the Fall semester using the quotes obtained from the SI interview
- Generated an SI promotional video describing our SI program here at Citrus

- **SI Leaders**

- SI Leader Training
- Increased Interactions among Students and SI-Leaders

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Fall 2009 Quantitative Study Results – Short-term (1)

		Non-SI	SI
Astronomy	Success Rate*	53.1% (n=147)	73.8% (n=84)
	Retention Rate*	81.6%	95.2%
Biology	Success Rate**	59.9% (n=342)	76.5% (n=293)
	Retention Rate*	93.0%	95.9%
Chemistry	Success Rate	79.6% (n=86)	81.9% (n=95)
	Retention Rate	93.5%	97.4%
Math	Success Rate	55.3% (n=161)	61.7% (n=60)
	Retention Rate	87.6%	93.3%

Note:
 *Significant at the 95% level
 **Significant at the 99% level

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Fall 2009 Quantitative Study Results – Short-term (2)

Descriptive Statistics for the Variables in the Logistic Regression

		Non-SI		SI	
		Freq	%	Freq	%
Gender	Male	338	46.2%	188	35.2%
	Female	375	51.2%	333	62.4%
	Unknown	19	2.6%	13	2.4%
Ethnicity	Asian	58	7.9%	43	8.1%
	Hispanic	236	32.2%	177	33.1%
	White	138	18.9%	119	22.3%
	Other /Unknown	300	41%	195	36.5%
SES	Low	115	15.7%	122	22.8%
	Not Low	617	84.3%	412	77.2%
		Mean	SD	Mean	SD
	Age	22.1	5.02	24.61	7.72
	Pre GPA	2.35	1.03	2.53	1.01
	Unit Load	10.8	3.7	10.96	3.9

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Fall 2009 Quantitative Study Results – Short-term (3)

Predictor	B	SE	Exp (B)
Intercept	-.574	.533	
Gender	-.248	.159	.780
Asian	-.086	.307	.917
Hispanic*	-.535	.199	.586
Other	-.264	.234	.768
Age	-.005	.014	.995
LowSES	-.326	.176	.722
Pre GPA**	.437	.077	1.549
Unit Load*	.049	.022	1.050
Astronomy	.004	.227	1.004
Math	.058	.225	1.060
Chemistry*	.559	.222	1.749
Participating in SI**	.546	.160	1.727

Note:

*Significant at the 95% level

**Significant at the 99% level

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Fall 2009 Quantitative Study Results – Short-term (4)

Predictor	B	SE	Exp (B)
Intercept	-.449	.550	
Gender	-.293	.161	.746
Asian	-.101	.312	.904
Hispanic*	-.545	.201	.580
Other	-.295	.238	.745
Age	-.011	.014	.989
LowSES	-.318	.179	.728
Pre GPA**	.428	.079	1.534
Unit Load*	.051	.022	1.053
Astronomy	.092	.229	1.096
Math	.084	.229	1.087
Chemistry*	.593	.224	1.809
SI Frequency**	.093	.018	1.097

Note:

*Significant at the 95% level

**Significant at the 99% level

22

Fall 2009 Quantitative Study Results – Long-term

	Non-SI	SI
Persistence Rate ^{1**}	31.7%	45.5%
Success Rate in Subsequent Science Courses ²	NA	NA

Note:

1. Persistence rate is the percent of students who enrolled in a science course in Winter 2010 or Spring 2010.
2. The success rate of courses offered in Spring 2010 is not available yet.

** Significant at the 99% level

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Fall 2009 Qualitative Study Results

- The features of a typical successful SI-Leader
 - Enjoying helping others
 - Communication skills
 - Knowledge
 - Patient
 - Organized
 - Creative
 - Confident
 - Encouraging and supportive
 - Collaborative
 - Flexible and Adaptive
- Concerns and issues
 - Space
 - Interaction between SI leaders and the instructors

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Initial Results and Further Improved Planning in Spring 2010

- Improved Attendance Rates in Fall 2009
 - Increased the attendance rate from 27% in Spring 2009 to 42% in Fall 2009
- Further Improved Planning in Spring 2010
 - Space: moved larger SI sessions to a different room
 - SI Mentors
 - Pre-class testing for previous performance
 - Motivated Strategies for Learning Questionnaire (MSLQ)
 - Other issues based on Fall 2009 evaluation results

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Summary

- Unique characteristics of community college students and strategies for addressing their needs
- Recommended methods for assessing the SI program
- Assessment and implementation processes are dynamic and impacting each other

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Thank you!

Contact Us if you have Questions or Concerns...

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