MATH JAM YOUR STUDENTS TO SUCCESS

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Kristy Woods and Rajinder Samra, Las Positas College
WELCOME!

- What brings you here? Think-Pair-Share
LEARNING OUTCOMES FROM THIS WORKSHOP!

- What essential components are needed to offer a successful Math Jam at your campus, and
- Key elements of evaluation
- Strategies to fund and institutionalize a Math Jam on your campus.
EVOLUTION OF MATH JAM
Math Jam was institutionalized in July 2016 and is now funded through our college funds. The program now lives in the Learning Center!
The model has now spread across the state. *NOTE: A study could be done on this!*

**Math Jam is designed to help students achieve their math goals ...**

- from providing them with a rigorous, personalized review to prepare them for their upcoming math course and/or

- prepare them to re-take the Math Assessment (Placement) Test to ensure they start their studies at the right spot.
- Mitigate the impact of ‘under-placement’.
- Address low completion of remedial sequence to transferable mathematics (attrition).
- Increase utilization of support services.

Students are TWICE as likely to successfully complete a transfer-level math course within three years if they BEGIN in a course one level higher.
Math Jam is a FREE one week intensive math preparation program for students, where they have the option to re-take a placement test.

HOW?
- Just in time remediation.
- Build campus-level ‘social capital’ by connecting students to faculty, staff, tutors, classmates
- Low-stakes collaborative practice (CAP Design principles)
More Objectives:

- Improving preparedness and increasing course success rates
- Improve student awareness of STEM majors and resources
- Increase student knowledge of college success skills
- Develop a community of learners among program participants
- Provide Math Tutors with structured experience and contextual support with tutoring math
One key aspect of numerous interventions, including statistics, accelerated pre-calculus, along with numerous others.
CHARACTERISTICS OF A MATH JAM
Math Jam’s are FREE for all students.

- One-week intensive math preparation program
- Coffee, snacks and FOOD are provided!
- Option to retake Placement test
Students who attend generally have one of two goals...

- Preparing for their upcoming math course, or
- Studying to re-take the Math Placement Test, offered at the end of the week
CHARACTERISTICS OF MATH JAM

Day-time model: 6 hours a day for 5 straight days with work starting at 9 AM, students attended lunch-time workshops, and continued studying until 3pm.

Night Time model: 3 hours an evening for 5 straight days. Starting at 6 p.m. and ending at 9:00 p.m.
CHARACTERISTICS OF MATH JAM

Students are given rigorous pre- and post- Math Jam assessments.

These are used to generate personalized study plans.

Participants have the option of attending student-tutor run workshops offered throughout Math Jam on key content.
Daily lunch time workshops have included the following:

- Problem-Solving
- Growth Mindset
- Time Management
- Math Anxiety
- Test Taking Strategies
- Calculator Programming
- Financial Aid
- Career Development, including resume and interview skills
What did you like most?
“The opportunity to expand my math mind.”

What did you like least?
“The headaches after 6 hours of math.”

“I reviewed more in one week than I feel like I have in any other class....

I learned much more than I thought possible, and all in all, this was a great way to spend my time before the semester started.”
“YOU LEFT... FEELING LIKE THERE WAS HOPE, LIKE EVERYTHING YOU HAD TOLD YOURSELF ABOUT YOUR LACK OF SKILLS IN MATH WERE UNTRUE.”

MATH JAM STUDENT
WHAT THE DATA TELLS US
CAÑADA MATH JAM DATA

**TRANSFER-LEVEL MATH COURSE SUCCESS**

- **Math Jam Participants**
  - Trigonometry (MATH 130): 74%
  - Calculus I (MATH 251): 69%
  - Minority Students: 71%
  - Non-Minority Students: 74%

- **Non-Math Jam Students**
  - Trigonometry (MATH 130): 51%
  - Calculus I (MATH 251): 65%
  - Minority Students: 59%
  - Non-Minority Students: 70%

**BASIC SKILLS MATH COURSE SUCCESS**

- **Math Jam Participants**
  - All Students: 51%
  - Minority Students: 46%
  - Non-Minority Students: 62%

- **Non-Math Jam Students**
  - All Students: 54%
  - Minority Students: 48%
  - Non-Minority Students: 64%
CAÑADA MATH JAM DATA

Percentage of Basic Skills Math Students Enrolled in Transfer-Level Math by Fall 2016

1 LEVEL BELOW IN 2013-14
- Math Jam Participants: 90% (n=63)
- Non-Math Jam Students: 51% (n=1477)

2 LEVELS BELOW IN 2013-14
- Math Jam Participants: 50% (n=46)
- Non-Math Jam Students: 19% (n=966)

3 LEVELS BELOW IN 2013-14
- Math Jam Participants: 33% (n=15)
- Non-Math Jam Students: 10% (n=381)

Transfer-level Math Course Success (2013-2014 cohort)
- TRIGONOMETRY (MATH 130):
  - Math Jam Participants: 74% (n=22)
  - Non-Math Jam Students: 51% (n=26)
- CALCULUS I (MATH 251):
  - Math Jam Participants: 69% (n=15)
  - Non-Math Jam Students: 65% (n=356)
- MINORITY STUDENTS:
  - Math Jam Participants: 71% (n=36)
  - Non-Math Jam Students: 59% (n=348)
- NON-MINORITY STUDENTS:
  - Math Jam Participants: 74% (n=78)
  - Non-Math Jam Students: 70% (n=811)

Source: American Society for Engineering Education (ASEE) 2015 conference presentation.
Note: New majority students include Black/African American, Hispanic, American Indian, and Pacific Islanders.
Our participants are set up for success!

- Pre- and Post- Math Jam Assessments
- Objectives mastered
- Pre- and Post- Surveys
- Increase of students requesting tutors
  - Tutorial Center has seen an increase of 34% more students requesting math tutoring
  - Many requesting their “Math Jam Tutor”
What we know at LPC...

Everyone was encouraged to retake the ACCUPLACER exam on Friday.

Approximately 50 students out of 200 participants “jump” 1, 2 or 3 levels in placement at the end of the week.

Characteristics of Math Jam participants is almost identical to our student body population in every way!

Math Jam is making a DIFFERENCE!!
Thanks to **100% cooperation** in the Math Department and Student Services...

Every student that was eligible to “jump” a class and had a seat to give up was registered for their new level on Friday.
## LPC MATH JAM DATA

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Success Rate</th>
<th>Non-Success Rate</th>
<th>Withdrawal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BaSk Math Jam</strong></td>
<td>273</td>
<td>65%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td><strong>MATH Jumpers</strong></td>
<td>64</td>
<td>61%</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Pre-Algebra Non-Jumper</strong></td>
<td>209</td>
<td>67%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>To Intermediate Algebra No Math Jam</strong></td>
<td>13382</td>
<td>56%</td>
<td>19%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>13928</td>
<td>56%</td>
<td>19%</td>
<td>25%</td>
</tr>
</tbody>
</table>
## LPC MATH JAM DATA

<table>
<thead>
<tr>
<th>Category</th>
<th>Group</th>
<th>Total</th>
<th>Success Rate</th>
<th>Non-Success Rate</th>
<th>Withdrawal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM</td>
<td>Math Jam</td>
<td>171</td>
<td>68%</td>
<td>11%</td>
<td>20%</td>
</tr>
<tr>
<td>Transfer</td>
<td>Jumpers</td>
<td>38</td>
<td>50%</td>
<td>18%</td>
<td>32%</td>
</tr>
<tr>
<td>Math</td>
<td>Non-Jumper</td>
<td>133</td>
<td>74%</td>
<td>9%</td>
<td>17%</td>
</tr>
<tr>
<td>Trig/Pre-Calculus</td>
<td>No Math Jam</td>
<td>2108</td>
<td>60%</td>
<td>16%</td>
<td>24%</td>
</tr>
<tr>
<td>Business Calculus</td>
<td>Grand Total</td>
<td>2279</td>
<td>61%</td>
<td>15%</td>
<td>19%</td>
</tr>
</tbody>
</table>
Math Jam Program
AA & AS: Pathway to AA/AS Program

designed to specifically provide a supportive, noncredit pathway for students into the credit math courses required at Las Positas to earn an AA/AS degree

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Department Name</th>
<th>Name</th>
<th>Hours</th>
<th>Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Core</td>
<td>MATH 201</td>
<td>Math Jam for Pre-Algebra</td>
<td>27 – 54</td>
<td>Year 1, Fall</td>
</tr>
<tr>
<td></td>
<td>MATH 202</td>
<td>Math Jam for Elementary Algebra</td>
<td>27 – 54</td>
<td>Year 1, Spring</td>
</tr>
<tr>
<td></td>
<td>MATH 203</td>
<td>Math Jam for Intermediate Algebra</td>
<td>27 – 54</td>
<td>Year 2, Fall</td>
</tr>
</tbody>
</table>
Math Jam Program Transfer: Math College Preparation Program designed to specifically provide a supportive, noncredit pathway for students into the credit math courses required to transfer.

<table>
<thead>
<tr>
<th>Requirement(s)</th>
<th>Department Name</th>
<th>Name</th>
<th>Hours</th>
<th>Sequence</th>
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<tbody>
<tr>
<td>Required Core</td>
<td>MATH 201</td>
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</tr>
<tr>
<td></td>
<td>MATH 202</td>
<td>Math Jam for Elementary Algebra</td>
<td>27 – 54</td>
<td>Year 1, Spring</td>
</tr>
<tr>
<td></td>
<td>MATH 203</td>
<td>Math Jam for Intermediate Algebra</td>
<td>27 – 54</td>
<td>Year 2, Fall</td>
</tr>
<tr>
<td>Choose at least one</td>
<td>MATH 204</td>
<td>Math Jam for Statistics &amp; Probability and Mathematics for Liberal Arts</td>
<td>27 – 54</td>
<td>Year 2, Spring</td>
</tr>
<tr>
<td></td>
<td>MATH 205</td>
<td>Math Jam for Trigonometry, College Algebra for STEM or Business Calculus</td>
<td>27 – 54</td>
<td>Year 2, Spring</td>
</tr>
</tbody>
</table>
Certificates of Completion Details

- Students would not have to complete all of the noncredit courses to complete – you can “assess out of” the lower level courses.

- These certificates would get approved at the State level for CDCP (Enhanced noncredit funding!) as the courses within are at Secondary Education level.

- If Math Jam were expanded to a preparation for Calculus I and beyond or to a tutor training course, it would not qualify for CDCP.
READY FOR MATH JAM AT YOUR COLLEGE?
STARTING A MATH JAM

- Branding is important.

- **Institutionalize:**
  - Work closely with existing programs especially the tutoring center.

- Pay Teachers and Tutors!

- Ask us any questions
- Visit Math Jam!
- [Math Jam Toolkit](#) Available at
### Cañada College Inquiry Process

<table>
<thead>
<tr>
<th>Situation</th>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes/Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>What problems are you trying to solve?</td>
<td>What resources go into the program?</td>
<td>What activities will the program undertake?</td>
<td>What is produced through those activities?</td>
<td>The changes or benefits that result from the program?</td>
</tr>
</tbody>
</table>

**Assumptions:**

1. **Question 1**
   - What is the situation we are trying to change?

2. **Question 2**
   - What is our dream outcome?

3. **Question 3**
   - What activities will we use to achieve our dream outcome?

4. **Question 4**
   - What are the outputs gained from the activities?

5. **Question 5**
   - What do we need to do to make it successful?

### Your Team Activity

1. Choose your situation or problem
2. Choose a recorder and a group leader
3. Choose a group name
4. Ask yourselves questions 1-5
5. Complete your logic models
6. Reflect on what might happen when you engage in the inquiry cycle
7. Choose one person to report out on your project
<table>
<thead>
<tr>
<th>WHO MAPPING WHAT MAPPING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What already exists that you could already build on?</strong></td>
</tr>
<tr>
<td>On campus</td>
</tr>
<tr>
<td>Off Campus</td>
</tr>
<tr>
<td><strong>What resources can support your work?</strong></td>
</tr>
<tr>
<td>On Campus</td>
</tr>
<tr>
<td>Off Campus</td>
</tr>
<tr>
<td><strong>What questions do you still have?</strong></td>
</tr>
<tr>
<td>Question</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>Who has relevant knowledge</td>
</tr>
<tr>
<td>Who needs to be actively involved?</td>
</tr>
<tr>
<td>Who needs to be aware of what is happening</td>
</tr>
<tr>
<td>Who could provide support?</td>
</tr>
</tbody>
</table>
MATH JAM

Michael Hoffman and Diva Ward, Cañada College

Kristy Woods and Rajinder Samra, Las Positas College
Thank You!
Please complete the evaluation.

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