Advancing Research through COM-SOM Collaborations

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Medical Student Research Program for:

1\textsuperscript{st} year, 3\textsuperscript{rd} semester Pre-Clerkship Students
GOALS:

- Provide research opportunities at nearby facilities
- Guide students through the research process
- Link students with preceptors
- Encourage academic medicine as a career path
Our program was developed without making changes to the curriculum or increasing the overall length of training

Despite the location of MSUCOM-DMC in a research-intensive area...
Barriers may be still be encountered...
Our Main Barriers were:

**Time**
Course-free time to devote to research

**Money**
Reimbursement funds for preceptors, costs associated with poster printing, travel to meetings, and publication charges

**Preceptor Pool**
Finding preceptors, keeping them
Questions for the AUDIENCE: How many...
Already have a research program?
Intend to establish one?

<table>
<thead>
<tr>
<th>Pre-Clerkship Research Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>TBD</td>
</tr>
</tbody>
</table>
Any obstacles?

1. Students
2. Faculty
3. Preceptors
4. Administration
5. Time available
6. Funding
Motivation?

Students?

Preceptors?

Faculty?
What Motivates Students?

**Relevance** (= topic of interest)
“This is one of my passions…”

**Convenience** (= ease of access)
“It’s right across the street, it doesn’t interfere with my schedule…”

**Necessity** (= to become more competitive)
“I need to have research on my transcript”

**Exciting** (= travel to meetings)
“We’re presenting a poster at the ….”
OPPORTUNITIES to

...connect to other student researchers

...showcase their projects

...attend national meetings, conferences

...have authorship on a paper
Who are your preceptors?
Where are they located?

Hospitals
Colleges/Universities
Communities
Industry
Distant partners
Are available preceptors:

- Located nearby?

- Able to supervise short-term projects for pre-clerkship students?
Role of Faculty Mentors:

• Establish, maintain, and enlarge the preceptor pool

• Match students with preceptors

• Ensure adherence to regulatory standards; good research conduct

• Project oversight and progress
• Are your students research ready?
• Are their expectations realistic?
• Should I keep a Lab notebook?
• What if I’m only interested in Sports Medicine?
Sequence of Events

Informational meeting

↓

Selection of Student Researchers

↓

Student-Preceptor matching

↓

Completion of regulatory training, CITI

↓

Research Elective* Application

↓

Begin Research Project
**RESEARCH ELECTIVE**

- Provides an additional level of oversight
- Formalizes the research experience
- Mandates:
  
a) Written Research Plan
b) NIH-style Summary & Progress Report
Medical Student Researchers who were polled up to 18 months after completing the program indicated perceived improvements in the following:

- Problem-solving skills
- Confidence Levels
- Time-Management
I found that my research experience...
1. Was clinically relevant
2. Very meaningful
3. Increased in my problem-solving ability
4. Raised my confidence level
5. Improved my time-management skills
6. Heightened my sense of professionalism
7. Improved my sense of responsibility
8. Led to boredom
9. Involved excessive technical requirements
10. Was overwhelming
11. Had unrealistically high expectations

Participant responses are shown as percentages and no. of respondents (above colored bars); survey questions (1-11) are grouped and shown below.
Student comments:

“It helped me understand how research is completed in the health-care setting”

“This research experience enhanced my medical training immensely”

“Being a medical student researcher allowed me to strengthen my critical thinking”
Focus areas for student research projects
## Research Focus

<table>
<thead>
<tr>
<th>Research Focus</th>
<th># Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Dis/Transplantation</td>
<td>8</td>
</tr>
<tr>
<td>Triple Negative Breast Cancer</td>
<td>6</td>
</tr>
<tr>
<td>High Throughput for Drug Discovery</td>
<td>5</td>
</tr>
<tr>
<td>Musculoskeletal; Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>3</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>2</td>
</tr>
<tr>
<td>Neurocognitive changes in HIV</td>
<td>1</td>
</tr>
<tr>
<td>Menopause; Reproductive</td>
<td>1</td>
</tr>
</tbody>
</table>
Information Available
(by request: janice.schwartz@hc.msu.edu)

1. Faculty Mentor – Student Meeting (key points)
2. Preceptor Announcement (recruitment)
3. Informational Meeting (power point)
4. Written Research Plan (Form 1)
5. Summary & Progress Report (Form 2)
6. Scholarly Activity (tracking table)
Questions?
Thank you for your participation!
Session Hand-Outs

**PRECEPTOR RECRUITMENT**

**PRECEPTOR** = a funded investigator who supervises medical student research projects

**Directions:**
Select your top 3 choices from the answer options below, and rank them in order of importance.

**QUESTION #1:** What would a funded PI want to serve as a preceptor in the supervision of short-term research projects for medical students?

A. To qualify for a clinical faculty appointment
B. To improve the likelihood of tenure
C. To be reimbursed for the cost of supplies
D. To receive honoraria for the time invested
E. To foster collegiate interactions with outside colleges/universities
F. To obtain ‘free labor’
G. To add strength to a CV

Answer:

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**QUESTION #2:** What are the most important factors to keep in mind when recruiting new preceptors?

A. The nature of the invitation – content and usable information
B. Follow-up and timely email communications
C. Rapid replies to inquiries
D. The reputation of the faculty mentor
E. The reputation of the student
F. One-on-one meetings
G. The promise of a professional relationship

Answer:

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**QUESTION #3:** What factors are most likely to detract from a successful research endeavor?

A. Responsibilities outside of medical school (family/personal)
B. Extracurricular interests, sports, clubs
C. Level of maturity, reliability, and independence
D. Expectations for a research project
E. Other: ______________________

Answer/Discussion

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**success = completion of the assigned research project, participation in academic activities (seminars, conferences), generation of scholarly products (abstracts, posters)**

**What traits predict success?** (as defined above)

**QUESTION #1:** What traits are most likely to predict success in students who engage in research during medical school?

A. Previous research experience
B. Higher degree in a scientific- or medically-related field
C. Higher degree in an unrelated field
D. Academic rank or class standing in medical school
E. Scores on national tests
F. Inquisitive personality and deep learning style
G. Industrious and patient
H. Other: ______________________

Answer/Discussion

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**QUESTION #2:** When selecting a preceptor to supervise short-term research projects, what are the top 3 considerations?