Introduction to Summer Research

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Associate Dean, Physician Scientist Development

www.uab.edu/medicine/physci
UASOM research experiences

MS1

Summer

Leave of Absence

MS2

MS3

Scholarly Activity

MS4

Elective
Physician Scientist Development Office (PSDO)

Who is a Physician Scientist?
- One who has the passion of solving a patient's medical struggles while pursuing research that may define the mechanism of that patient’s disease and may ultimately translate into a clinical cure for the disease (AAMC.org)

Areas of Research Interest
- Biomedical laboratory disciplines: cell biology, biochemistry, genetics, immunology, pharmacology, physiology, pathology, neuroscience, and biomedical engineering
- Non-laboratory disciplines: Computational biology (bioinformatics), epidemiology, health care policy, or public health

Career Pathways
- Residency Programs
- Research Residency Programs
  - Integrated research and clinical training (Medicine, Pediatrics, Radiology, Radiation Oncology, Pathology, Dermatology)
The physician scientist population is in decline

Figure 3.1. Number of Physicians Reporting Medical Research, Medical Education as Primary Practice Areas (2003-2012)
Academic Career in Medicine

RESEARCH

CLINICAL SERVICE

TEACHING

SUCCESS

TEACHING

SERVICE

RESEARCH
Motivation to pursue research

Residency application 70%  Program requirement 63%
Interest in a specialty 42%  Interest in a research topic 39%
Passion for research 25%
**Physician Scientist Development Office (PSDO)**

- Why do research?
  - Intellectual challenge
  - Summer stipend
  - **Close interaction with faculty member(s)**
  - Improve problem solving skills
  - Strengthen residency application
  - Learn about writing and submitting manuscripts for publication
  - Improve skills in searching and critically analyzing scientific and clinical literature
  - Help identify future careers in academic medicine
    - Do you have a passion for research and inquiry?
<table>
<thead>
<tr>
<th>Characteristics of medical school research</th>
<th>N=92 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical school research experiences</strong></td>
<td></td>
</tr>
<tr>
<td>Summer research between MS1/2</td>
<td>72 (78%)</td>
</tr>
<tr>
<td>Year-out or Masters program</td>
<td>19 (21%)</td>
</tr>
<tr>
<td>Scholarly Activity rotation</td>
<td>49 (53%)</td>
</tr>
<tr>
<td>Elective research in MS4</td>
<td>17 (18%)</td>
</tr>
<tr>
<td>Multiple experiences</td>
<td>47 (51%)</td>
</tr>
<tr>
<td><strong>Type of research</strong></td>
<td></td>
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<tr>
<td>Clinical</td>
<td>35 (38%)</td>
</tr>
<tr>
<td>Basic science</td>
<td>19 (21%)</td>
</tr>
<tr>
<td>Public health or education</td>
<td>14 (15%)</td>
</tr>
<tr>
<td>Multidimensional</td>
<td>24 (26%)</td>
</tr>
<tr>
<td>Authored a publication</td>
<td>41 (45%)</td>
</tr>
<tr>
<td>Authored an extramural presentation</td>
<td>43 (47%)</td>
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</table>
Physician Scientist Development Office

Who is a Physician Scientist?
Why should I do research?

Medical Student Summer Research Opportunities at UAB: Single PSDO Application
• Medical Student Summer Research Program (MSSRP)
• O’Brien Center for Research in Nephrologic and Urologic Diseases Fellowship
• Department of Surgery Summer Research Program
• Department of Anesthesiology and Perioperative Medicine

Medical Student Summer Research Opportunities at UAB: Individual Application
• *Koopman Medical Student Research Excellence Award (Medicine)
• *Comparative Effectiveness and Patient-Centered Outcomes Research
• *Functional Neurorehabilitation Research Opportunities
• *Russell Cunningham Memorial Research Program (Pediatrics)
• Cancer Research Experiences for Students (CaRES)
• *Diabetes Research Center Summer Research Fellowship
Physician Scientist Development Office (PSDO)

Medical Student Summer Research Opportunities at UAB

Single PSDO Application

Apply at www.uab.edu/medicine/physci

- Medical Student Summer Research Program (MSSRP)
- O’Brien Center for Research in Nephrologic and Urologic Diseases Fellowship
- Department of Surgery Summer Research Program
- Department of Anesthesiology and Perioperative Medicine
PSDO Summer Research Programs

- Funded by either the National Institutes of Health (MSSRP, O’Brien) or UAB Departmental Funds (Surgery, Anesthesiology)
- The goal of these training programs is to introduce medical students to the principles of scientific experimentation, the proper methods of data analysis, and the interpretation and application of research results.
- Online training and case studies to help students understand the ethics of performing research and need for reproducibility in research.
Logistics: PSDO Programs

- Full time research (40+ hours) for 8 or 10 weeks in a laboratory at UAB
  - June-July
- Stipend of ~$1948/month
- Required to present at Medical Student Research Day
- Applications Due by in March of your MS1 year
FAQ: PSDO Programs

• Can I do part-time research?
  • The only program that pays for research that is not full-time is the CAReS Program
  • http://www.soph.uab.edu/cares/home

• Can I be an Orientation Leader for incoming MS1 SOM students and participate in summer research
  • Yes, but you need to notify the program that you are participating as an orientation leader and get permission from your faculty mentor

• Can I do full-time research for less than 8-weeks?
  • No
How to Find a Research Project

• Contact faculty members working in an area in which you may have an interest
  • See UAB APSA website
    • https://www.uab.edu/medicine/mstp/academics/mstp/uab-apsa-chapter
  • See Medical Student Summer Research Program Website
    • www.uab.edu/mssrp
  • Look at faculty on UAB department websites
  • Search PubMed for Birmingham Alabama and your keywords of interest
  • Contact Dr. Lorenz or one of the other summer research program directors for advice
  • Select a faculty sponsor and write a research proposal
How to Find a Research Project

<table>
<thead>
<tr>
<th>Audience</th>
<th>Research Type</th>
<th>Research Summary</th>
<th>Department</th>
<th>Research Site</th>
<th>Date Posted</th>
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</thead>
<tbody>
<tr>
<td>Medical - Summer</td>
<td>Clinical Research, Health</td>
<td><strong>Transplant Outcomes</strong> Research Summer Intern</td>
<td>Surgery</td>
<td>Birmingham Campus</td>
<td>January 6, 2016 7:53:38 AM CST</td>
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<tr>
<td></td>
<td>Research, Health Outcomes</td>
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<tr>
<td>Multiple</td>
<td>Basic science, Translational</td>
<td><strong>Identification and characterization of novel factors in insulin secretion in type 2 diabetes and obesity</strong></td>
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<td>Birmingham Campus</td>
<td>November 4, 2015 12:49:12 PM CST</td>
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<td></td>
<td>science</td>
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<tr>
<td>Undergraduate - Summer,</td>
<td>Basic science, Translational</td>
<td><strong>The role of bone microenvironment in myeloma metastasis to bone</strong></td>
<td>Pathology</td>
<td>Birmingham Campus</td>
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<td>Medical - Summer, Medical</td>
<td>Research, Clinical</td>
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<tr>
<td>Scholarly Activity, Graduate or MD/PhD, Resident</td>
<td>Research</td>
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Required Project Proposal

- Specific Aims (limited 1 page)
  - Goals
  - Expected Outcomes
- Introduction/Background
- Research Strategy
  - Significance
  - Approach
- Literature Cited (3-10 papers)
- No longer than 5 pages
Physician Scientist Development Office (PSDO)

Medical Student Summer Research Opportunities at UAB

Individually-Based Application Process

Application information can be found at www.uab.edu/medicine/physci

- *Koopman Medical Student Research Excellence Award
- *Comparative Effectiveness and Patient-Centered Outcomes Research
- *Functional Neurorehabilitation Research Opportunities
- *Russell Cunningham Memorial Research Program
- Cancer Research Experiences for Students (CaRES)
- *Diabetes Research Center Summer Research Fellowship
Southeastern Medical Scientist Symposium
Physician Scientist Symposium

www.southeasternmdphd.org
Physician Scientist Development Office (PSDO)

- Medical Student Research Day (MSRD)
  - Fall 2017
    - Hill University Center
    - Poster Session
    - Awards Reception

- Southeastern Medical Scientist Symposium and Physician Scientist Symposium
  - Fall 2017 (Atlanta, GA)
    - Collaboration among UAB, Emory, and Vanderbilt
    - [www.southeasternmdphd.org](http://www.southeasternmdphd.org)

- New Medical Student Travel Awards for 2017
Questions

• Robin Lorenz, MD, PhD, PSDO Director
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  • 934-0676
  • SHEL 121C

• Jackie Bennett, Program Coordinator, Medical Student Summer Research Program
  • jackiebennett@uab.edu
  • 934-0440
  • SHEL 121J

• www.uab.edu/medicine/physci/