University of Pittsburgh School of Medicine

Physician Scientist Training Program (PSTP)
Clinical Scientist Training Program (CSTP)

Information Session
August 2011
What is the PSTP?

- A highly competitive 5 year academic physician training program tailored to a student’s specific research interests
- Integrated with School of Medicine curriculum
- An additional year of laboratory-based research training
What is the CSTP?

- **Clinical Scientist Training Program**
  - 5 year merit scholarship program with the opportunity to complete a dual degree
  - Earn 2 degrees in 5 years! (MD/MS)

- **Competitive merit-based scholarship program**
  - $25,000/year for MD (MS-1, MS-2, MS-3, MS-4)
  - Full tuition coverage for MS during Research Year (RY) between MS-3 and MS-4
  - At least $10,000 living stipend during RY
NIH Funding

Out of 3400 Institutions nationwide that receive funding:

- University of Pittsburgh ranked 5th (2009)

- University of Pittsburgh ranked 4th in individual grants received (2006)

“Our university’s consistently high ranking among the top recipients of competitively awarded NIH funds is clear evidence of the pioneering research being completed by our faculty, and we are extremely proud of this record.”

Chancellor Mark A. Nordenberg, Pitt Chronicle January 2, 2008
What Does This Mean?

Pitt has invested significantly in new research infrastructure in disciplines such as:

- Developmental biology
- Cellular biology
- Structural biology
- Computational biology
- Faculty recruitment
Areas of Research

- Drug discovery & design
  - Organ transplantation / Immunology
    - Stem cell therapy
  - Tissue engineering & regenerative medicine
  - Artificial organ & medical device development
  - Cancer diagnostics & therapy
    - Cardiology
    - Gene therapy
- Bioinformatics & computational biology
- Psychiatry
- Neuroscience
  - Neurological surgery
  - Vaccine development
- Hemostasis & vascular biology
  - Structural biology
  - Developmental biology
  - Clinical trials management
Current Centers of Research

- Alzheimer Disease Research Center
  - Arthritis Institute
  - Center for Biological Imaging
  - Center for Computational Biology & Bioinformatics
  - Center for Image-guided Neurosurgery
  - Center for Minority Health
  - Center for Molecular Analysis
  - Center for the Neural Basis of Cognition
- Center for Neuroscience
  - Department of Bioinformatics
  - Magee-Womens Research Institute
  - McGowan Institute for Regenerative Medicine
  - Pittsburgh Supercomputing Center
  - Robotics Institute
  - University of Pittsburgh Cancer Institute
  - Western Psychiatric Institute and Clinic
City of Pittsburgh

- “America’s Most Livable City” (Places Rated Almanac 2007)
- 10th Cleanest City (Forbes 2007)
- 13th Best City for Young Professionals to Live (Forbes 2008)
- Economy based on healthcare, education, technology, robotics, & financial services
- Housing market is relatively stable despite economic crisis
- Economy has added jobs despite national recession
- Extensive county & city parks offer miles of bicycle & walking trails
- Vibrant symphony, ballet, opera, & Broadway series
- Amateur & professional sports teams
- Well known attractions (museums, zoo, aviary, theaters)
- Home to 90 distinct neighborhoods (including Oakland, Shadyside, Squirrel Hill, Point Breeze, Highland Park – all are a quick walk or bus ride away from the university)
Medical Student Opportunities

- Medical Scientist Training Program (MSTP)
- Clinical Scientist Training Program (CSTP)
- Physician Scientist Training Program (PSTP)
Physician Scientist Training Program (PSTP)

- Scholarship Program
- Complete in 5 years
- MD
- Stipend support *
- Focused on academic medicine & basic research
- Could transfer to MSTP (MD/PhD) -1 student
- Apply at onset and during 2\textsuperscript{nd} year

* Stipend support during research year and summer lab rotations
PSTP Student Attributes

• Stood out in undergraduate years
• Have medical and research training
• Interested in generating biomedical breakthroughs
• Highly motivated
• Curious
• Focused
# PSTP Curriculum - MS1

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Laboratory Rotation 1</td>
<td>Research Integrity Course</td>
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<tr>
<td>Professional Development 1 Course (formally Molecular Medicine)</td>
<td>Research Basis of Medical Knowledge 1</td>
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<tr>
<td>Attend Retreat</td>
<td>Required SOM Courses (includes Scholarly Project)</td>
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<tr>
<td>ETHICS COURSE (T.W.A.N.N.)</td>
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<tr>
<td>Meet with Career Advisor</td>
<td>Meet with Career Advisor</td>
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<tr>
<td>Work in Progress Seminar (WIP) - Monthly</td>
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# PSTP Curriculum – MS2

<table>
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<tr>
<th>Summer</th>
<th>Fall</th>
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<tbody>
<tr>
<td>Laboratory Rotation 2</td>
<td>Required SOM Courses (includes Scholarly Project)</td>
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<tr>
<td>Professional Development 2</td>
<td>Research Basis of Medical Knowledge 1</td>
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<tr>
<td>Course</td>
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<tr>
<td>Attend Retreat</td>
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<tr>
<td></td>
<td>Ethics Course (twice annually)</td>
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<tr>
<td></td>
<td>Meet with Career Advisor</td>
<td>Meet with Career Advisor</td>
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<tr>
<td></td>
<td>Work in Progress Seminar (WIP) - Monthly</td>
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</table>
## PSTP Curriculum – Research Year

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Project Proposal (3 months in advance)</td>
<td>Progress Report (Oct)</td>
<td>Progress Report (Feb)</td>
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<tr>
<td>Attend Retreat</td>
<td></td>
<td>Final Report (May)</td>
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<td></td>
<td>Ethics Course (twice annually)</td>
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<td></td>
<td>Meet with Career Advisor</td>
<td>Meet with Career Advisor</td>
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<tr>
<td>Work in Progress Seminar (WIP) - Monthly</td>
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## PSTP Curriculum – MS3

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Required SOM Courses (includes Scholarly Project)</td>
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<td></td>
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<tr>
<td>Attend Retreat</td>
<td>Ethics Course (twice annually)</td>
<td></td>
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<tr>
<td>Meet with Career Advisor</td>
<td>Meet with Career Advisor</td>
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<tr>
<td>Work in Progress Seminar (WIP) - Monthly</td>
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<tr>
<td>Summer</td>
<td>Fall</td>
<td>Spring</td>
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<tr>
<td>Required SOM Courses (includes Scholarly Project)</td>
<td>Attend Retreat</td>
<td>Ethics Course (twice annually)</td>
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<tr>
<td></td>
<td>Meet with Career Advisor</td>
<td>Meet with Career Advisor</td>
</tr>
<tr>
<td>Work in Progress Seminar (WIP) - Monthly</td>
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Why PSTP?

- Enhanced SOM curriculum
- Summer laboratory rotations
- Research related courses
- Year devoted to basic biomedical research
- Tuition scholarship & stipend support*
- Customized & guided program by a Career Advisor
- World renowned facilities & faculty
- Phenomenal collection of programs
Application Process

- Apply individually to SOM & PSTP
- Very important to complete MD & PSTP applications as soon as possible
- Must apply online to PSTP (including letters of recommendation)
- Deadline – February 1
- Expect to receive 60 applications
- Maximum of 4 positions available (includes 2 internally)
Application Criteria

- Written PSTP Application
- Outstanding academic record (~ GPA 3.7 & MCAT 36)
- 2 Letters of Recommendation
- Prior research experience
- Evidence of commitment to a career as a physician scientist
Interview Process

- Review application & letters of recommendation
- Approximately 20 applicants will be offered interviews (which is required and in addition to SOM interview)
- Must be accepted/waitlisted to SOM by Feb 15 to be considered for interview
- PSTP Interviews are at our expense
# Application Statistics

<table>
<thead>
<tr>
<th>Academic Year 2008-2009</th>
<th>Academic Year 2009-2010</th>
<th>Academic Year 2010-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 Applicants</td>
<td>63 Applicants</td>
<td>41 Applicants</td>
</tr>
<tr>
<td>18 Interviewed</td>
<td>19 Interviewed</td>
<td>21 Interviewed</td>
</tr>
<tr>
<td>12 Accepted</td>
<td>6 Accepted / 3 Waitlisted</td>
<td>6 Accepted / 3 Waitlisted</td>
</tr>
<tr>
<td>7 Matriculated (3.88 GPA / 11.17 MCAT)</td>
<td>6 Matriculated (3.70 GPA / 12.11 MCAT)</td>
<td>6 Matriculated (3.93 GPA / 12.17 MCAT)</td>
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PSTP Contacts

Richard Steinman, MD, PhD
Director, Physician Scientist Training Program

Clayton Steup, MS
Program Coordinator

Contact Information:
412-624-6074
pstp@medschool.pitt.edu
www.pstp.pitt.edu
Medical Student Opportunities

- Medical Scientist Training Program (MSTP)
- Clinical Scientist Training Program (CSTP)
- Physician Scientist Training Program (PSTP)
What is clinical research?

- Clinical Research is distinguished from basic science research by its reliance upon human subjects.
  “patient-oriented research conducted with human subjects, or research on the causes and consequences of disease in human populations involving material of human origin (such as tissue specimens and cognitive phenomena) for which an investigator or colleague directly interacts with human subjects in an outpatient or inpatient setting to clarify a problem in human physiology, pathophysiology or disease, or epidemiologic or behavioral studies, outcomes research or health services research, or developing new technologies, therapeutic interventions, or clinical trials.” [NIH]

- Goal of Clinical Research: advance translation of basic biomedical research discoveries into treatments, preventions, and cures that will improve human health
Clinical Scientist Training Program (CSTP)

- Upon completion of the program students will have the following competencies:
  - Research Methods
  - Data Management and Analysis
  - Ethical Conduct of Research
  - Research Communication/ Dissemination
  - Professionalism and Teamwork
## CSTP Curriculum: MS-1

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Pittsburgh School of Medicine course work</td>
<td>Apply for summer research program</td>
</tr>
<tr>
<td>CSTP Seminar: Introduction to Clinical and Translational Research</td>
<td>Annual Review</td>
</tr>
<tr>
<td>CSTP Seminar: Seminar for Understanding Principles and Practices of Research Techniques (SUPPORT)</td>
<td></td>
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<tr>
<td>(1) Saturday Survival Skills and Ethics Workshop</td>
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CSTP Curriculum MS-2

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentored research project</td>
<td>University of Pittsburgh School of Medicine course work (exempt from Scholarly Project)*</td>
<td>CSTP Seminar: Seminar for Understanding Principles and Practices of Research Techniques (SUPPORT)</td>
</tr>
<tr>
<td></td>
<td>(1) Saturday Survival Skills and Ethics Workshop</td>
<td>Annual Review</td>
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*All CSTP students meet the Scholarly Project requirement through their MS thesis. CSTP students are exempt from all Scholarly Project monitoring and paperwork.*
## CSTP Curriculum MS-3

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>University of Pittsburgh School of Medicine course work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keep in touch with CSTP program director and mentor(s)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Apply for a competitive research fellowship to provide more funding during research</td>
<td>Annual Review</td>
</tr>
</tbody>
</table>
# CSTP Curriculum Research Year (RY)

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Take core classes towards MS</td>
<td>CSTP Seminar: Seminar for Understanding Principles and Practices of Research Techniques (SUPPORT)</td>
<td></td>
</tr>
<tr>
<td>(2) Office of Academic Career Development Workshops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICRE courses- MS electives and specialty track (30 credits to complete MS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-point Review</td>
<td></td>
<td>Annual Review</td>
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CSTP Curriculum MS-4

<table>
<thead>
<tr>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>University of Pittsburgh School of Medicine course work</td>
<td>Defend Thesis for MS</td>
</tr>
<tr>
<td></td>
<td>Complete exit survey</td>
<td></td>
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</table>
Why CSTP?

- 2 degrees in 5 years (MD/MS)
- Build a lifelong relationship with an NIH-funded mentor
- Small, supportive cohort of fellow CSTP students with similar interests
- Debt reduction
  - Allows for future career flexibility
- More Competitive for residency
  - MS and 2 first author publications
- Year off between MS-3 and MS-4
  - Reflect on specialty choice before having to apply for residency
Application Process

- Apply individually to SOM and CSTP
- Must complete CSTP application by February 1
- Application includes:
  - demographic and administrative data
  - two short essay questions
  - personal statement
  - curriculum vitae
  - two letters of recommendation
  - two references
- No formal interview process; applicants are encouraged to schedule a phone conversation with Associate Program Director
- Maximum of 5 positions available per year
What are we looking for?

- Prior activities demonstrating leadership, creative thought, and/or innovative research
- Compelling personal statement
  - Enthusiasm/investment in your prior research
  - Commitment to academic medicine
  - Details regarding your particular interest in potential Pitt mentors
- Excellent academic performance
  - Average MCAT: 12.0
  - Average GPA: 3.76
- Strong letters of recommendation
  - We are interested in your commitment to a career in clinical investigation, not whether you would be a good doctor
“In addition to breadth of clinical research exposure, the CSTP provides a group of colleagues who with I can share research frustrations, advice, and the difficulty of integrating longitudinal research into medical school curriculum.” – Ben Sprague class of 2013

“I have been involved with like-minded individuals equally set on careers in clinical research and have better developed my writing and presentation skills through the CSTP seminars.” – Tiffany Behringer class of 2012

“Between the formal program activities and the mentored research experience, the CSTP has tremendously enriched my time in medical school, intellectually, professionally, and socially.” – Sarah Ramer class of 2012

“I cannot adequately express the extent to which the CSTP has fostered and shaped my academic development, helping me to think like a researcher and empowering me to become one.” – Reva Pomerantz class of 2011
CSTP Contacts

Wishwa N. Kapoor, MD, MPH  
Director, Institute for Clinical Research Education

Amber E. Barnato, MD, MPH, MS  
Director, Clinical Scientist Training Program for Medical Students

Debra Bogen, MD  
Associate Director, Clinical Scientist Training Program for Medical Students

Jennifer Holliman, MPA  
Degree Program Coordinator

Tara Rohall  
Program Coordinator, Clinical Scientist Training Program for Medical Students

For more information, please visit our website:  
http://www.icre.pitt.edu/cstp-m/index.aspx

All inquiries may be directed to:  
cstp@pitt.edu