

DOS Research Toolkit Lecture

How to Plan Your Research Years and Find a Mentor(s) – for PGY 1-3

1 October 2022

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Director of Resident Research

Overview

- Why do research?
 - Why do research during residency?
- What is the **Physician Scientist Training Program (PSTP)**?
- What's the timeline?
- How do I find a faculty mentor(s)?
- How do I get funded?
- What are important upcoming events?
- Where can I get more information?

What's the value of research to patients and surgery?

- The medical profession is defined by curiosity, critical thinking, and humanitarianism
- Research leads to advancements in mechanisms of disease and the translation of these advancements to patients
- Research allows for rigorous evaluation of current practices and for quality improvement
- Surgery has always been a research-driven and evidence-based field
 - History is replete with surgeons who have transformed the practice of medicine

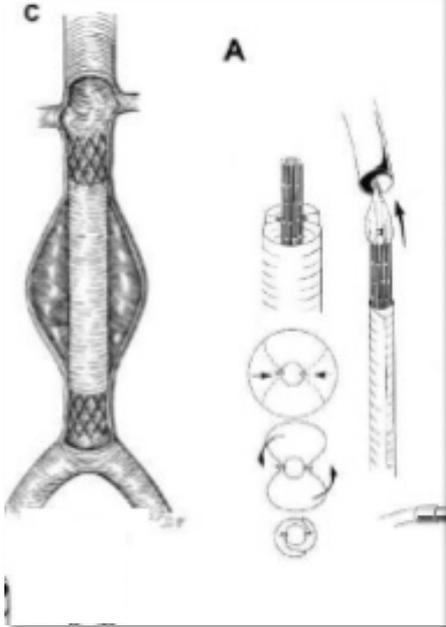
Surgeon-scientists who have won Nobel Prizes

Surgeons	Country	Year	Accomplishments
Theodore Kocher	Switzerland	1909	Physiology, pathology, and surgery of the thyroid
Alexis Carrell	USA/France	1912	Vascular suture, transplantation of blood vessels and organs
Sir Frederick Banting	Canada	1923	Insulin
Werner Forssmann	Germany	1966	Heart catheterization
Charles Huggins	USA	1956	Hormonal treatment of prostate cancer
Joseph Murray	USA	1990	Organ transplantation

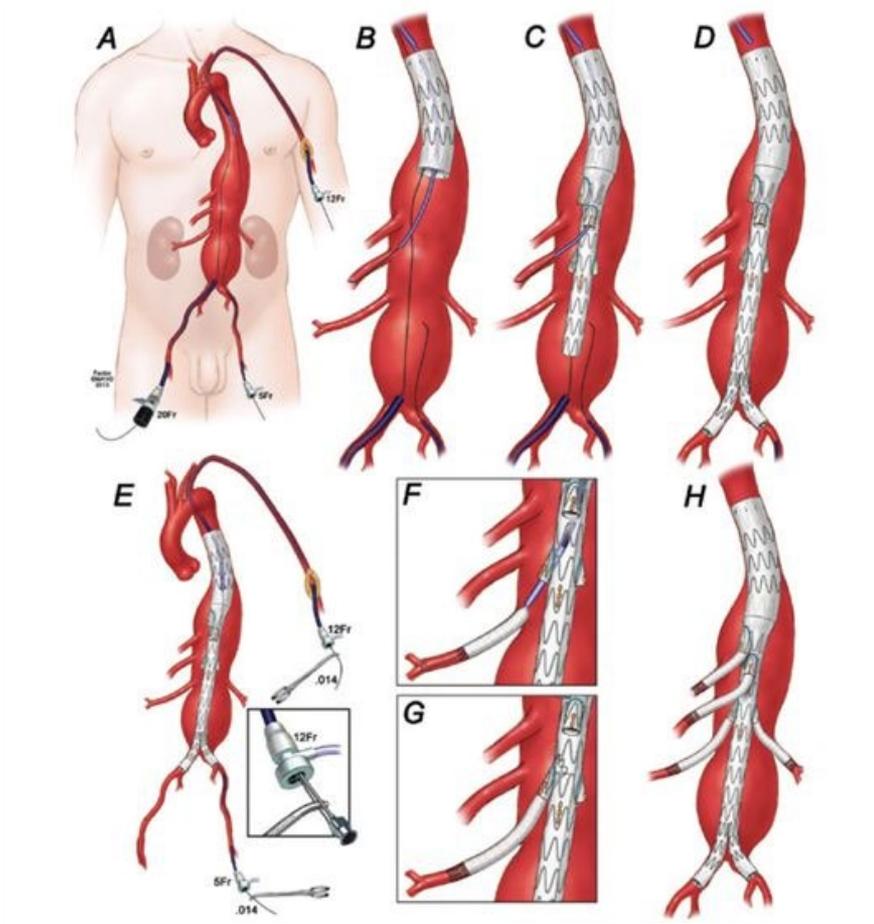
Examples

- Cardiopulmonary

1991



TODAY



ts in surgery

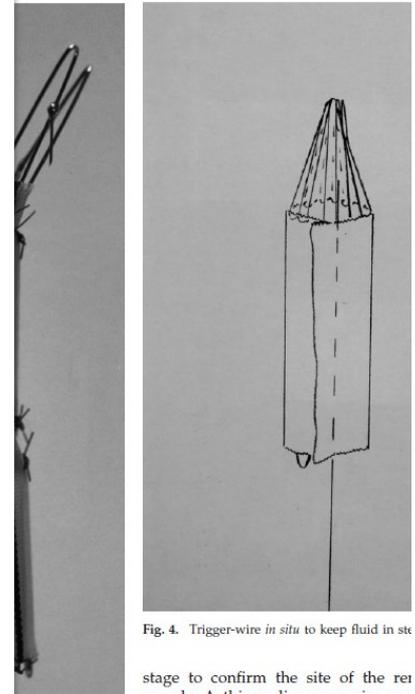


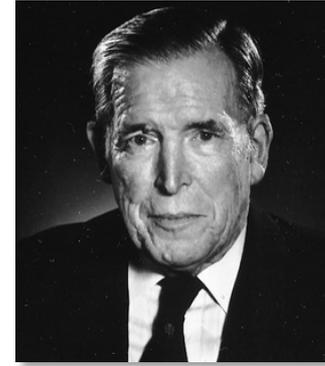
Fig. 4. Trigger-wire *in situ* to keep fluid in site

stage to confirm the site of the ret

- TPN



Stanley Dudrick and “Stinky”
SURGICAL RESIDENT



Jonathan Rhoads Harry Vars
(University of Pennsylvania)

Other examples of recent research accomplishments in surgery

- Effect of hormones on cancer
- Minimally invasive surgery (first lap chole – 1985; first robotic-assisted aortic surgery - 2006)
- Fetal surgery
- Extracorporeal gas exchange
- Immune therapy for cancer

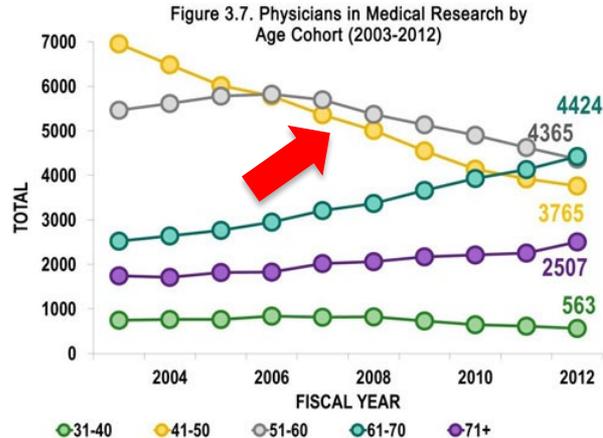
... and the list goes on and on!!

Why do research during residency?

- Residency is a time to explore personal and professional interests
 - Intellectual curiosity
 - Explore potential career options within academia or a subspecialty
 - Complete a program requirement
 - Develop CV or other credentials
- Structured research training during residency enhances scholarly success and leads to a greater appreciation for evidence-based medicine
 - Absence of a research curriculum is a barrier to completion of research projects

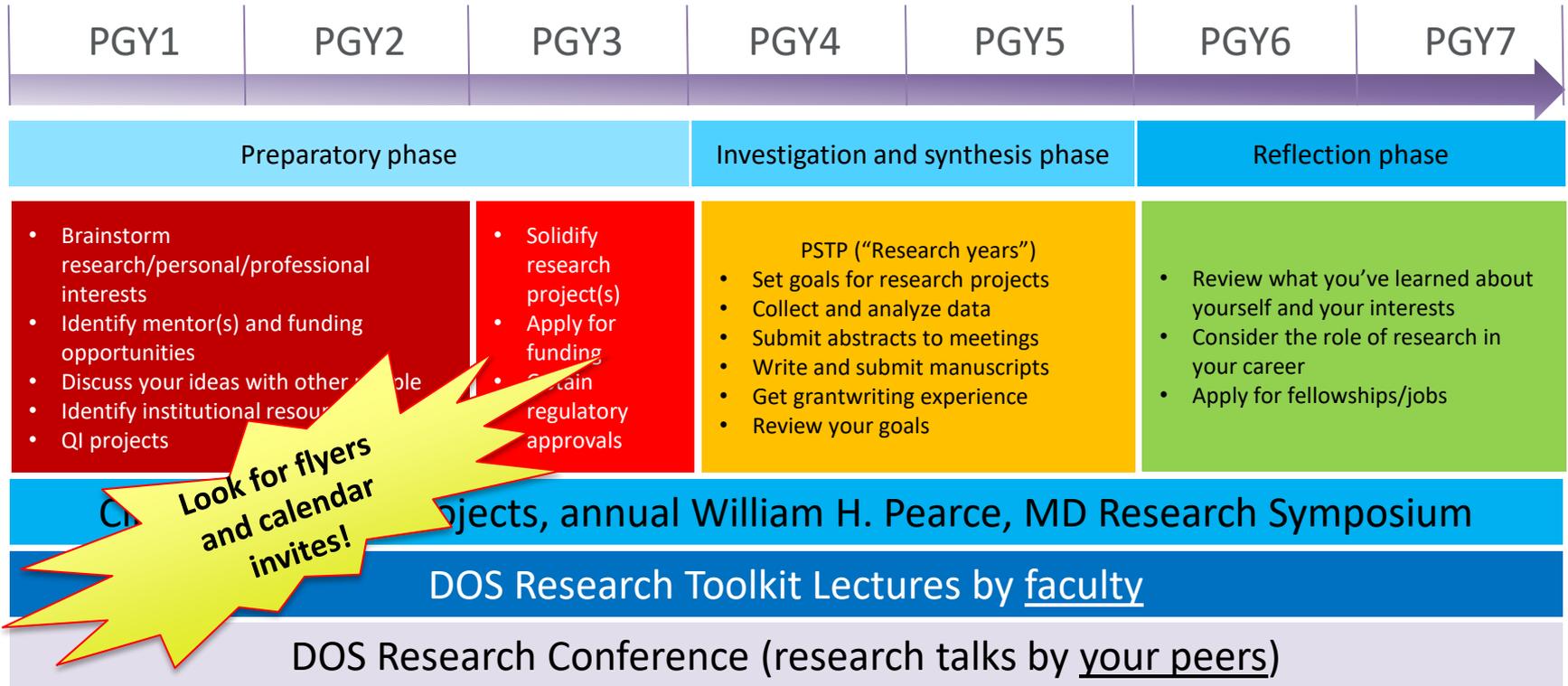
What is the Physician Scientist Training Program (PSTP)?

- The Physician-Scientist Training Program (PSTP) experience is designed to facilitate the development of surgical residents into clinician-investigators
 - Name given to the pathway that combines research training with clinical training
 - For most surgery residents, this means 5 years of residency + 2 years of research



- According to the 2014 NIH Physician-Scientist Workforce Report, physician-scientists are becoming an endangered species!
- In the DOS, we hope that all PSTP scholars will emerge with the tools and training needed to engage in research at the highest levels
 - PSTP plans are highly individualized!

What's the timeline?



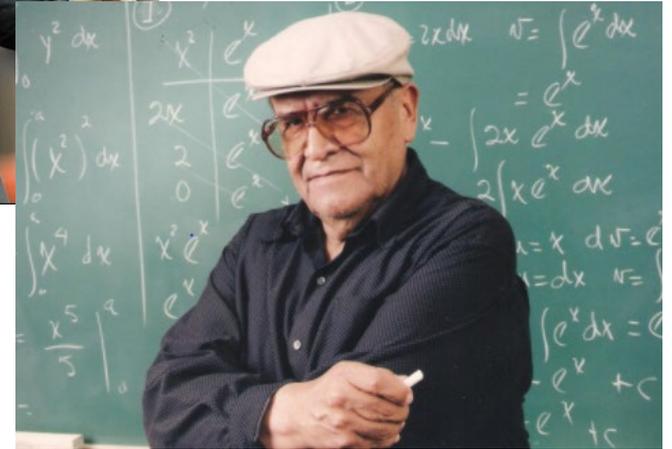
How do I find a faculty mentor(s)?

- Who or what is a mentor?
 - Not a coach
 - Not a teacher



A mentor is someone who helps you develop your interests and realize your potential

- Mentorship roles are dynamic over time
 - Consider the medical student versus the mid-career surgeon



What can/should a mentor do?

Tactical

- Recommend funding opportunities, journals for submission
- Provide funding
- Define research project, review data
- Help refine manuscripts, grant applications, talks
- Sponsor/support/nominate for applications, awards, career development activities
- Help develop timelines
- Support networking and collaboration

Conceptual

- Help clarify career and research interests
- Aid in goal setting
- Identify strengths to develop
- Identify weaknesses and areas for improvement
- Challenge you. . .

How do you find a good mentor?

Start with introspection:

- Know yourself (at least a little bit)
- Know your goals (at least a few of them)

Do your homework:



- Actively seek out mentors you suspect will be receptive to your values, ideas and goals; mentor also needs to have time, expertise, and funding
 - Talk to senior residents, fellows, and peers
 - Set up a meeting to discuss your personal, research, and career interests
- If you don't "click" with someone, keep looking!
- Professional society resources
 - [ACS Young Fellows Association Mentor Program](#)
- Think broadly – you can have > 1 mentor and/or have a mentor outside DOS: mentoring TEAM!

DOS faculty research descriptions

<https://www.surgery.northwestern.edu/education/residency/resident-research/faculty-mentors-and-research-descriptions.html>

Department of Surgery

Search web or people

About Us ▾ Education ▾ Research ▾ Patient Care Divisions ▾ Faculty ▾



Faculty Mentors and Research Descriptions

Research Area: Search by Keyword:



Hasan B Alam, MD
Professor of Surgery (Trauma and Critical Care) and Cell and Developmental Biology
[@DrHasanAlam on Twitter](#)
[Dr. Alam's Faculty Profile](#)

Research Type



Amir M Alhajjat, MD
Assistant Professor of Surgery (Pediatric Surgery) and Pediatrics
[@amirhajjat on Twitter](#)
[Dr. Alhajjat's Faculty Profile](#)

Research Type

Northwestern Scholars

<https://www.scholars.northwestern.edu/>

Northwestern University | NORTHWESTERN SCHOLARS

Welcome to Northwestern Scholars



Advanced search

Northwestern researchers are contributing to the Coronavirus (COVID-19) pandemic response in multiple fields and disciplines.

Explore all our related research and expertise



4882

Experts



350

Organizations



252149

Research Output



24824

Grants



55

Core Facilities

Northwestern Scholars is a searchable database of research expertise across all disciplines at Northwestern University. Explore the profiles and research output (publications, visual works, performances, [patents](#), etc.), citations, altmetrics, and [grants](#) of thousands of scholars. Learn about core research facilities at Northwestern. Discover the research expertise of Northwestern's wide-ranging schools, departments, institutes, centers, and graduate programs, and view collaboration networks among researchers within Northwestern and with external scholars.

Northwestern Scholars is managed by the **Research Analytics** unit within the **Office for Research** at Northwestern University.

FSM websites

- Departments

<https://www.feinberg.northwestern.edu/depts/index.html>

- Institutes & Centers

<https://www.feinberg.northwestern.edu/centers/index.html>

How do I get funded?

- Broad categories:
 - NIH institutional research training grants
 - DOS: Transplant, Surgical Oncology, Vascular
 - DOM
 - Individual postdoctoral research fellowships (e.g., ACS, NIH F32)
 - Intramural (e.g., Stryker endowment)
 - Mentor
- You need to plan ahead and pay attention to deadlines!



Start funding by July 1, 2024
Submit grant by December 2023
Start writing by August 2023
Identify project and Aims by July 2023
Identify mentor and discuss funding by January 2023

PGY 3

PGY 2

For example: NIH F32 application cycles are 3 times/year

Application deadline	Earliest start date for funding
April 8	September <u>of following year</u>
August 8	April <u>of following year</u>
December 8	July <u>of following year</u>

List of funding opportunities + links

<https://www.surgery.northwestern.edu/education/residency/resident-research/funding-opportunities.html>

Department of Surgery Search web or

About Us ▾ Education ▾ Research ▾ Patient Care Divisions ▾ Fac

Feinberg Home > Home > Education > Residents > Resident Research > Funding Opportunities

Education

- Education Overview
- NU Surgical Education Center
- Medical Students
- Residents ▾
 - Residents Overview
 - General Surgery
 - Plastic Surgery
 - Thoracic Surgery
 - Vascular Surgery
- Resident Research ▾
 - Resident Research Overview
 - Projects
 - Surgical Conferences Calendar
 - **Funding Opportunities**
 - Physician-Scientist Training Program
 - Resources
 - Research Toolkit Lecture Series



Funding and Training Opportunities for Residents & Students



For Residents

- Steven J. Stryker, M.D., Gastrointestinal Surgery Research and Education Endowment - Please contact Melanie Mkrdichian (mblaszak@nm.org) for more information
- Association of Academic Surgeons / AACS / AACS Foundation Trainee Research



For Students

- American Heart Association Predoctoral Fellowship
- American Heart Association Student Scholarships in Cardiovascular Disease and Stroke
- American Society of Transplant Surgeons

What are important upcoming events?

- Thursday, 10/6, 6-8 PM
 - **Resident recruitment dinner** at Francesca's on Chestnut
 - Faculty and lab residents will talk to PGY1s and 2s about research in small groups
- Thursday, 10/13, 9-10 AM
 - **Training Grant Directors will talk about their programs**
 - Surg Onc – Dr. Seema Khan, Dr. Julie Johnson, Dr. Ryan Merkow
 - ACS Clinical Scholars – Dr. Ryan Merkow
 - Vascular – Dr. Mark Eskandari
 - Transplant – Dr. Daniela Ladner
 - VA CRQS – Dr. Dave Bentrem
- Please sign up for **1:1 meetings with me** – check your email next week to sign up on Google sheet!

Where can I get more information?

- [DOS Resident Research website](#)

<https://www.surgery.northwestern.edu/education/residency/resident-research/index.html>

- [Current and former PSTP research scholars and projects](#)
- [Faculty mentors](#)
- [Funding opportunities](#)
- [Surgical conferences calendar + abstract deadlines](#)
- [Recordings and slides of Research Toolkit Lectures](#)
- [SURGE-N Newsletters](#)
- [Link to Edelstone-Bendix Day and William H. Pearce, MD Research Symposium](#)
- [Other resources](#)



SURGE  **N** 

Names to know



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DO NOT IGNORE HER EMAILS!



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*Help with grant submissions, onboarding,
DOS research event planning, awards administration*

DOS Research Conference emails, website updates



Thank you

QUESTIONS?