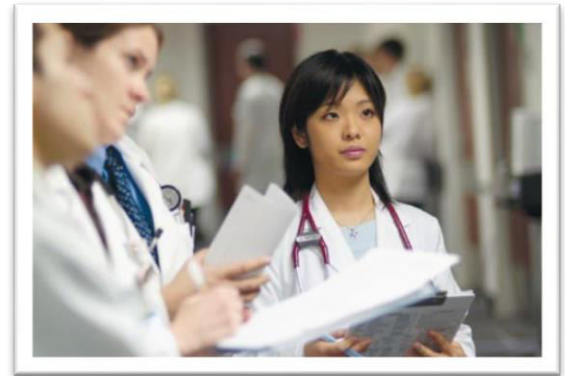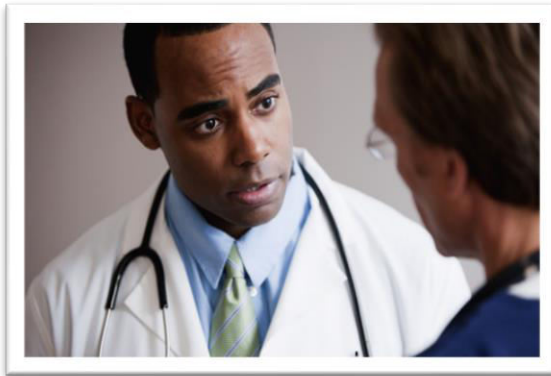# Residency Driven Research Curriculum Expansion

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AAIM Chief Residents Meeting
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Objectives

Participants in today's workshop will:

- Learn about existing evidence for effective components of resident education in research

- Analyze their own program's strengths and weaknesses in research education

- Identify barriers to research success in their program

- Plan implementation of evidence-based interventions to support research productivity and participation

Importance of Research Education in Residency

- Resident participation in scholarship is an ACGME requirement

- Research participation is a valuable learning experience, regardless of career interests
  - Provides hands-on learning in the scientific process
  - Assists residents with forming their own process for analyzing medical evidence

- Supports career goals of residents with aspirations of future education, fellowship, leadership and administrative positions

- Helps housestaff discover what they truly enjoy about medicine

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Resident Motivation for Research Participation

1) Interest in a research or academic career
2) To learn the scientific method
3) To learn to critically appraise the literature
4) To be competitive for fellowship application
5) To take a break from clinical activities
6) To determine if they would enjoy research
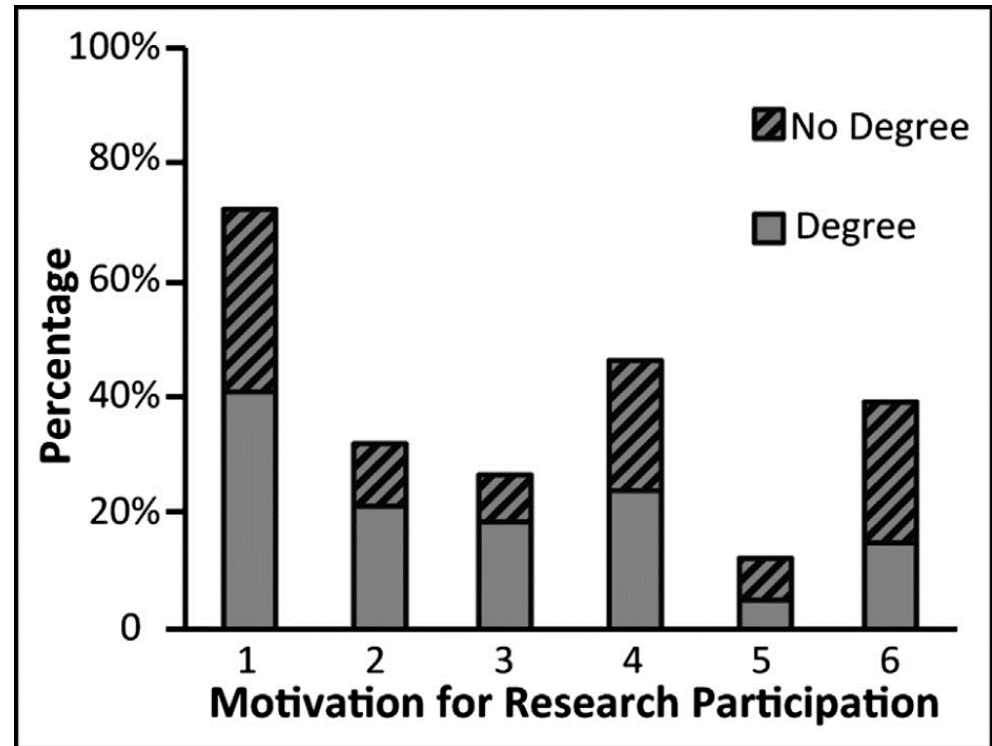
H. Hsieh et al. 2014 (Degree = M.S.; Ph.D.)

Evidence Based Approach

- Multiple studies have looked at algorithmic approaches to developing research curricula
  - Stevenson MD, et.al. Increasing Scholarly Activity Productivity During Residency: A Systematic Review. 2017 Feb
  - Hsieh, Helen, et. Al. Formal research training during surgical residency: scaffolding for academic success. January 2014
  - Forough, Farrokhyar PhD, Impact of the Surgical Research Methodology Program on Surgical Residents' Research Profiles. July 2014

- Outcomes: Housestaff who participate in formal research curricula have more publications and have greater funding success than those who don't

Evidence Based Approach

- Developing an evidence based approach includes addressing barriers and developing key elements:
- Barriers
    1) Time
    2) Mentorship
    3) Funding
    4) Resident Attitude
    5) Culture of Program

- Elements:
    1) Research Director/Advocate
    2) Research Track
    3) Protected Time
    4) Curriculum
    5) Requirement for Participation

SWOT Analysis

	Strengths	Weaknesses
Internal Forces	• What does your program do well?	• What program-specific challenges and obstacles are you facing currently?
External Forces	**Opportunities** • What assets does your program have access to that you may not be fully utilizing? • Are there any institutional or ACGME goals or directives that you could be better meeting?	**Threats** • Are there institutional obstacles outside of your specific program that threaten the development or improvement of a research program? • Do divisions and faculty members support an increase in resident research involvement?

Example SWOT Analysis – Ohio State

Internal Forces	**Strengths** • **Block scheduling with clinic** • **Career Development Blocks, research blocks, and extended research blocks are available**	**Weaknesses** • **Disconnect between mentors, available projects, and specific resident research interests**
External Forces	**Opportunities** • **Many divisions have very active projects** • **Research emphasis in the SOM, students have an interest in participating as well** • **Division-specific funding available**	**Threats** • **Multiple competing, time-consuming requirements for resident time (modules, ACGME mandated activities, etc.)**

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SWOT Analysis – Breakout Session

Internal Forces	**Strengths** • What does your program do well?	**Weaknesses** • What program-specific challenges and obstacles are you facing currently?
External Forces	**Opportunities** • What assets does your program have access to that you may not be fully utilizing? • Are there any institutional or ACGME goals or directives that you could be better meeting?	**Threats** • Are there institutional obstacles outside of your specific program that threaten the development or improvement of a research program? • Do divisions and faculty members support an increase in resident research involvement?

Identifying Barriers

Time	• Are blocks available that are less service/clinically heavy? • Does the program structure allow for designated research time?
Mentorship	• How to residents go about finding a mentor? • Does the program facilitate linking potential mentors with interested residents?
Funding	• Available from the program? From subspecialty divisions? • Do residents understand how to obtain?
Resident Attitude	• Do the program's residents have an interest in research? • Do residents understand the importance of scholarly activity?
Program Culture	• Does the program support time off for conferences? Reimbursement for travel?

Overcoming Barriers – Ohio State

Time	Up to 12 Weeks Allowed by ACGME: Research Elective Blocks Clinic Subspecialty Blocks used for Research
Mentorship	Career Guides Fellowship/Attending Conference Groups Research Faculty Project/Mentor Database
Funding	Department of Internal Medicine Funding for National Conference Subspecialty Funding for Journal Submissions
Resident Attitude	Residency Research Interest Database
Program Culture	Residency Research Interest Database Research Requirement Research Faculty Project/Mentor Database

Identifying & Overcoming Barriers - Breakout Session

Time	• Are blocks available that are less service/clinically heavy? • Does the program structure allow for designated research time?
Mentorship	• How to residents go about finding a mentor? • Does the program facilitate linking potential mentors with interested residents?
Funding	• Available from the program? From subspecialty divisions? • Do residents understand how to obtain?
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Implementation

Research Director	• Chief, PD or separate permanent faculty position • Compensation
Research Track	• Requirements, Sample Time Frames, Design • Outcomes/Expectations
Protected Research Time	• Continuous or in blocks • Logistics of 12 week allotment • Outpatient vs. Inpatient Rotations
Curriculum	• Includes didactics and workshops • Faculty experienced in research able to present content? • Direct assistance with resident's personal work
Requirement for Participation	• ACGME requirement already. Use this • Create Culture change and change resident attitude as it is now "expected"

Example Implementation – Ohio State

Research Director	• Chief resident, with faculty support from Department of Medicine Education and Research Chairs
Research Track	• Development in progress via aPD's and Career Guides, • Increased planning prior to research blocks
Protected Research Time	• Available in single or multiple blocks • Both opportunities for electives and as part of outpatient rotations
Curriculum	• CCTS (Centers for Clinical & Translational Sciences) Lecture Series • Small Group IRB/Poster/Paper Writing Seminars
Requirement for Participation	• ACGME Requirement for Scholarly Activity • Research requirement residency wide for national conference poster presentation or podium presentation at local conference as minimum. • If not meeting research requirement: formal didactic lecture to residency class required.

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Implementation - Breakout Session

Research Director	• Chief, PD or separate permanent faculty position • Compensation?
Research Track	• Requirements, Sample Time Frames, Design • Outcomes/Expectations
Protected Research Time	• Continuous or in blocks • Partitioning out 12 week allotment • Outpatient vs. Inpatient Rotations
Curriculum	• Includes didactics and workshops • Faculty experienced in research able to present content? • Direct assistance with resident's personal work.
Requirement for Participation	• ACGME requirement already. Use this • Create Culture change and change resident attitude as it is now "expected"

Putting It All Together

- Measure Inputs and Outcomes
  - Survey prior to initiating curriculum and after to determine strengths, weaknesses prior to start
  - Survey after interval implementation to determine areas of growth

- Create buy in at both the faculty level and resident level from the start
  - Ensure residents are invested and allow them input into the process

- Step by Step Approach
  - Start with strengths to achieve initial success.
  - Target weaknesses once buy in achieved.

- Commit: Choose One area today that you can improve

Questions/Comments?

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Thank You!

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Residency Driven Research Curriculum Expansion Action Plan
Goal: Develop a plan to guide implementation of a successful research curriculum

SWOT Analysis

Internal Forces	**Strengths**	**Weaknesses**
External Forces	**Opportunities**	**Threats**

Identifying Barriers

Time	
Mentorship	
Funding	
Resident Attitude	
Program Culture	

Implementation Plan

Research Director	
Research Track	
Protected Research Time	
Curriculum	
Requirement for Participation	