

*Assessing Impact of Mentorship  
in  
Academic Medicine*

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# What is *MENTORSHIP*?



- **A mentor is described as someone who doesn't quit until the advisee, student or mentee succeeds.**
  - ❑ **an active partner in an ongoing relationship**
  - ❑ **provides guidance and advice**
  - ❑ **positive or influential effect**
  - ❑ **vested interest in the success and accomplishments of the promising developing faculty**

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# Definition of Successful Mentorship

- **“There is no established definition of what constitutes good [scientific] mentoring”**
  - **Nature 447:791-797, 2007.**
- **If it is that hard to define it will be at least that hard to assess mentorship.**



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# How Should Mentorship Be Measured?

- **Subjective criteria?**
    - **Overall happiness with career and life choices?**
    - **Feeling of success?**
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# How Should Mentorship Be Measured?

- **Objective criteria?**
    - **Publications?**
    - **Academic advancement?**
    - **Funded grant proposals?**
    - **Administrative advancement?**
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# Who Should Measure the Impact of Mentorship?

- **Mentor?**
  - **Mentee?**
  - **Independent observer?**
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# Studies Assessing Impact of Mentorship

- **One year assessment of CFD Mentorship Program**
  - **Career Development Survey, BIDMC 2006-07**
  - **Review in JAMA 2006**  
*(269(9):1103-1115)*
  - **CFD New Faculty Survey, 2007**
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# CFD Mentorship Program Design

- **Formal Match program**
  - **Open to all faculty**
  - **Interested faculty completed a Personal Information Data questionnaire**
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# CFD Mentorship Program Design

- **Match performed on the basis of mentees preference:**
    - **Department, division, race, gender, degree, administrative role, academic rank, teaching, research interests, clinical interests, marital status, children, HMS committees, hospital committees**
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# **CFD Mentorship Program Guidelines**

- **Commit to one year**
  - **Meet within one month of the match**
  - **Meet monthly for six months**
  - **Meet twice for second six months**
  - **Complete program assessment surveys**
  - **Call any of the CFD director if problems**
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# One-Year Survey: Comparison of Responses

<i>Question</i>	<i>Mentee</i>	<i>Mentor</i>
<b>Satisfied with Match?</b>	<b>87%</b>	<b>82%</b>
<b>Set Goals?</b>	<b>87%</b>	<b>73%*</b>
<b>Goals Realized?</b>	<b>77%</b>	<b>63%</b>
<b>Valuable to M/M?</b>	<b>31%</b>	<b>90%**</b>
<b>Valuable to You?</b>	<b>93%</b>	<b>60%**</b>
<b>Average times Met:</b>	<b>4.6</b>	<b>4.3</b>
<b>Aware of academic credit</b>	<b>n/a</b>	<b>50%</b>

\* p=0.05

\*\* p<0.001

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# One-Year Survey - Comments

- **Great opportunity**
  - **Mentees should be receptive to mentoring and should have a brief psychological assessment**
  - **Let each pair decide on frequency of meetings**
  - **Mentee felt they failed their mentor**
  - **Encourage more senior faculty to participate as mentors**
  - **Make it a part of the job, not a community service project!**
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# CFD Survey: Impact of Mentorship on Career Goals and Success



- **Conducted in Fall, 2006**
- **Electronic**
- **Anonymous**
- **Preliminary data presented**

# Do you have at least one mentor?

<b>Mentor*</b>	<b>Yes</b>	<b>Significance</b>
<b>Gender</b>		<b>p= NS</b>
<b><i>Male</i></b>	<b>53.7%</b>	
<b><i>Female</i></b>	<b>46.3%</b>	
<b>Race</b>		<b>p=0.001</b>
<b><i>Caucasian</i></b>	<b>52.5%</b>	
<b><i>All others</i></b>	<b>77.6%</b>	

\* n=228

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# Do you have a mentor?

## *By Degree*

<b>Degree</b>	<b>% with a Mentor</b>
<b>MD</b>	<b>52.1</b>
<b>PhD</b>	<b>71.0</b>
<b>MD, PhD</b>	<b>72.2</b>
<b>MD, MPH</b>	<b>58.3</b>
<b>OTHER</b>	<b>100</b>

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# Do you serve as a mentor?

- **93.5% of all those with a mentor serve as a mentor**
  - **83.2% of all responders serve as a mentor**
  - **no statistical difference in mentoring responsibilities between men and women faculty**
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# What is the impact of a mentor?

- **Series of seven questions assessing career achievements attributed to a mentor.**
  - **Responders could indicate if question did not apply to them.**
  - **Provided no definition of “mentor”**
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<b>Was your Mentor Effective in your....</b>	<b>YES</b>
<b>Reaching your career goals?</b>	<b>78.5%</b>
<b>Published clinical or research papers?</b>	<b>64.2%</b>
<b>Improved or advanced research skills?</b>	<b>56.8%</b>
<b>Improved or advanced clinical skills?</b>	<b>54.8%</b>
<b>Advancement in academic rank?</b>	<b>50.6%</b>
<b>Secured peer reviewed research funding?</b>	<b>44.9%</b>
<b>Improved or advanced teaching skills?</b>	<b>42.9%</b>

<b>Was your Mentor Effective in your....</b>	<b>Gender</b>		<b>Race</b>	
	<i>Men</i>	<i>Women</i>	<i>Caucasian</i>	<i>All Others</i>
<b>Reaching your career goals?</b>	<b>74.0</b>	<b>83.9%</b>	<b>75.8</b>	<b>85.0</b>
<b>Published clinical or research papers?</b>	<b>66.3</b>	<b>61.3</b>	<b>60.2</b>	<b>77.5</b>
<b>Improved or advanced research skills?</b>	<b>62.8</b>	<b>49.3*</b>	<b>55.8</b>	<b>60.0</b>
		<b>p=0.055</b>		
<b>Improved or advanced clinical skills?</b>	<b>59.1</b>	<b>49.3</b>	<b>50.9</b>	<b>66.7</b>
<b>Advancement in academic rank?</b>	<b>56.7</b>	<b>42.4*</b>	<b>52.1</b>	<b>45.9</b>
		<b>p=0.055</b>		
<b>Secured peer reviewed research funding?</b>	<b>47.8</b>	<b>41.2</b>	<b>45.2</b>	<b>44.1</b>
<b>Improved or advanced teaching skills?</b>	<b>45.7</b>	<b>39.2</b>	<b>43.4</b>	<b>41.0</b>

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# Mentored faculty:

*more likely to agree that:*

- **Academic promotion “very important”**
  - **OR 3.53 [1.05,11.93], p=0.042**

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# Mentored faculty:

*more likely to be:*

- **Actively working towards an academic promotion**
  - **OR 1.57 [1.14, 2.16], p=0.006**

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# Mentored faculty:

*more willing to work:*

- **additional hours/reduce vacation time for academic advancement\***
  - **OR 1.43[1.04,1.98], p=0.029 /**  
**OR 1.51[1.10,2.06],p=0.011**

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\* men willing to work more hours than women, p=0.001

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# **No difference between mentored and non-mentored faculty:**

- **Current level of career satisfaction**
- **Satisfaction with current academic rank**
- **Current academic rank appropriate for current academic achievements**
- **Awareness of requirements for academic promotion\***
- **Satisfaction with workplace**
- **Satisfaction with supervisor**

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# No difference between mentored and non-mentored faculty:

- **Personal happiness**
  - **Definition of success**
  - **Work life balance**
  - **Relationships with family and friends**
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# **Mentoring in Academic Medicine: A Systematic Review**

**JAMA, 296:1103-1115, 2006**

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# Review:

## *Mentoring in Academic Medicine*

### ■ **Methods**

- **Review of the literature**
    - **Medline**
    - **Current Contents**
    - **Cochrane Databases**
      - **Systematic Reviews**
      - **Central Register of Controlled Trials**
    - **Database of Abstracts**
    - **PsycINFO**
    - **Scopus databases**
  - **All data until 2006**
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# Review:

## *Mentoring in Academic Medicine*

### ■ Data

- 3640 citations
  - 142 full text articles
    - 42 articles described 39 studies selected for review
      - 34 cross sectional self reports
        - Response rates from 5 to 99%
        - One case controlled study
        - One cohort study with small sample size and large loss to follow-up
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# Review:

## *Mentoring in Academic Medicine*

### ■ Results

- ❑ Many studies with methodological limitations
  - ❑ Only 5 studies provided information on how a mentorship was formed
    - Match
    - Self identified
  - ❑ Four studies described general importance of mentorship
  - ❑ Studies include medical students, residents, faculty
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# Results <sub>2</sub>

## Personal Development

- **8 studies reported on the influence of mentorship**
    - **5 found mentors important as career enhancing**
    - **1 found mentorship increased confidence**
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# Results <sub>3</sub> Professional Development

## 2 studies described effect of academic mentoring

### ■ *Stanford*

- ❑ Voluntary with formal schedule of meetings
- ❑ 52% improvement in research
- ❑ 26% improvement in teaching
- ❑ 6% improvement in patient care

### ■ *UCSD*

- ❑ Included professional development workshops, career planning, counseling, formal mentoring
  - ❑ increase in self-efficacy scores:
    - 52% improvement in professional development
    - 33% improvement in education skills
    - 76% improvement in administrative skills
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# Results <sub>4</sub> Differences by Gender

- **Ten studies cited**
    - **3 explored mentorship experiences of women**
    - **6 explored differences between men and women**
    - **1 evaluated impact to eliminate differences**
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# Results <sup>4a</sup> Differences by Gender

- **Relationship with mentor a positive experience:**
    - **Men 3X more than women**
  - **Research mentor influencing career**
    - **Men = Women**
  - **White women less often report mentor than any other group**
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# Results <sup>4b</sup> Differences by Gender

- **Women 2X cite a lack of mentor as a barrier to their promotion**
  - **Women (< 50 years) – no correlation between having a mentor during residency and academic rank**
  - **Women 2.7X more likely to cite lack of mentor as obstacle to a successful academic career**
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# Results <sub>5</sub> Mentors

- **Predominantly white men**
  - **Majority of mentors for both men and women are men**
  - **Junior women faculty more likely to have a women mentor**
  - **80% of women faculty felt gender concordance not important**
  - **Women residents more likely to prefer a woman mentor**
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# Results 6 Pitfalls with Mentors

- **Study from Johns Hopkins**
  - **Mentor used mentees work to advance mentor's career**
    - **32% women**
    - **10% men p=0.004**
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# Results <sub>7</sub>

## Interventions to Improve Mentorship

- **Interventions to improve resulted in:**
    - **More women with mentors**
    - **Reduced isolation**
    - **Reduced career structural impediments**
    - **Fewer women and men leaving academic medicine**
      - **183% increase women c/w 57% men**
    - **Recognized improvement by both men and women**
    - **Increase in % of women and men who expected to be promoted**
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# Conclusions:

## *Mentoring in Academic Medicine*

- **Mentorship perceived as important**
    - **Some scientific evidence to support this**
  - **Women report more difficulty finding mentors than men**
  - **Mentorship reported to have**
    - **influence on personal development**
    - **career guidance**
    - **career choice**
    - **research productivity**
      - **Publications and grant access**
-

# New Faculty Survey



- **Assess impact of mentorship on new full time academic faculty**
  - **Longitudinal survey**
- **Will *prospectively* address:**
  - **Career goals**
  - **Career accomplishments**
  - **Success**
  - **Objective measurements of mentorship**
  - **Subjective measurements of mentorship**

# 2007 New Faculty Survey Mentorship - Prospective



- **Response: 71/96 = 75%**
  
- **Mentors:**
  - **64.7% have at least one**
    - **61.8% of men**
    - **67.6% of women**
  
  - **8.8% would like one**

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# Gender of Primary Mentor

- **52.2% of all Mentors are Women**
  - **Men junior faculty**
    - **Male mentor**                      **54.1%**
    - **Female mentor**                      **45.9%**
  - **Women junior faculty**
    - **Male mentor**                      **14.3%**
    - **Female mentor**                      **85.7%**
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# Mentorship relationships

- **69.8% same department**
  - **56.8% meet *at least* monthly**
  - **71.4% feels mentor's advice is *always* sound**
  - **52.4% follow mentors advice *at least 75%* of  
the time**
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# Quality of mentorship

## ■ Quality of advice:

- Excellent 14.3%
- Very good 52.4%
- Good 19.0%

## ■ Quality of meetings:

- Excellent 19.0
  - Very good 38.1
  - Good 14.3
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## New Faculty Survey 2007

<i>Has your Mentor helped you secure .....</i>	<b>Total % Yes Response</b>	<b>Gender</b>	
		<i>Men</i>	<i>Women</i>
<b>research funding?</b>	<b>32.6</b>	<b>42.9</b>	<b>22.7</b>
<b>scientific laboratory publication?</b>	<b>18.6</b>	<b>23.8</b>	<b>13.6</b>
<b>scientific clinical research publication?</b>	<b>53.5</b>	<b>57.1</b>	<b>50.0</b>
<b>clinical review, book chapter or other similar type of publication?</b>	<b>34.1</b>	<b>57.1</b>	<b>13.0</b>
<b>a leadership position?</b>	<b>23.3</b>	<b>28.6</b>	<b>18.2</b>
<b>your clinical practice?</b>	<b>46.5</b>	<b>38.1</b>	<b>54.5</b>
<b>teaching opportunities at HMS?</b>	<b>22.7</b>	<b>28.6</b>	<b>17.4</b>

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# Comparison of CFD studies and JAMA Review

## ■ CFD

### □ Differences:

- Higher per cent of faculty with mentors
- No significant differences between men and women having a mentor
- More women serve as mentors

### □ Similarities

- More women have women mentors
  - Greater career satisfaction for mentored faculty
  - Academic promotion is enhanced with mentorship
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# Future Directions



- **Survey five years of new faculty 2007-2012**
- **Re-survey at 5 year intervals**
- **Assess impact of mentorship**
  - **Objective criteria**
  - **Subjective criteria**

*Thank you.*

