



# Metrics of Successful Mentoring

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# Mentoring in Academics - Origin of “Mentor”

- Homer’s Odyssey
- Odysseus placed his old friend Mentor in charge of his son Telemachus when he left for the Trojan war
- “one who imparts wisdom to and shares knowledge with someone less experienced”



# Contemporary Definition of Mentoring in Academic Setting

- A dynamic, collaborative, reciprocal and sustained relationship focused on a junior colleague's acquisition of the values and attitudes, knowledge and skills, and behaviors necessary to develop into a successful independent faculty member

Adapted from Abedin Z...,Feldman M, ... et al.

Clin Transl Sci. 2012; 5: 273-280

# Key Mentoring Responsibilities

- Communication
- Content Mentoring – Research, Education, Clinical
- Career and Professional Development
- Psychosocial Support

# Key Mentoring Responsibilities

## ○ Communication

- Establish expectations
- Frequency of meetings
- Listening skills
- Prompt feedback
- Manage disagreements and conflict
- Foster trust

# Key Mentoring Responsibilities

- **Content Mentoring – Research, Education, Clinical**
  - Identify gaps in knowledge and skills
  - Identify training opportunities
  - Identify resources
  - Help formulate aims
  - Help design and develop plan to accomplish aims
  - Monitor progress
  - **Step aside to allow independence**

# Key Mentoring Responsibilities

## ○ Career and Professional Development

- Facilitate opportunities and connections
- Promote mentee in and out of institution
- Help understand promotion requirements and fiscal realities
- Help ensure sufficient protected time
- Help navigate the system
- Model and instruct on ethical behavior

# Key Mentoring Responsibilities

## ○ Psychosocial Support

- Discuss work-life balance
- Effective time management
- Demonstrate leadership skills
- Be sensitive to cultural diversity
- Encourage peer mentoring (often similar issues for colleagues at same level of training)
- Serve as role model



Acad Med. 2013 Jan;88(1):82-9. doi: 10.1097/ACM.0b013e31827647a0.

## **Characteristics of successful and failed mentoring relationships: a qualitative study across two academic health centers.**

Straus SE, Johnson MO, Marquez C, Feldman MD.

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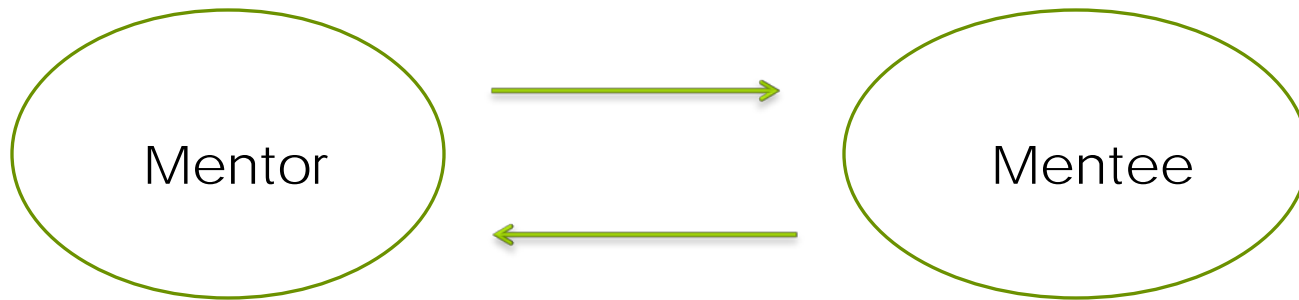
### **Abstract**

**PURPOSE:** To explore the mentor-mentee relationship with a focus on determining the characteristics of effective mentors and mentees and understanding the factors influencing successful and failed mentoring relationships.

**METHOD:** The authors completed a qualitative study through the Departments of Medicine at the University of Toronto Faculty of Medicine and the University of California, San Francisco, School of Medicine between March 2010 and January 2011. They conducted individual, semistructured interviews with faculty members from different career streams and ranks and analyzed transcripts of the interviews, drawing on grounded theory.

**RESULTS:** The authors completed interviews with 54 faculty members and identified a number of themes, including the characteristics of effective mentors and mentees, actions of effective mentors, characteristics of successful and failed mentoring relationships, and tactics for successful mentoring relationships. Successful mentoring relationships were characterized by reciprocity, mutual respect, clear expectations, personal connection, and shared values. Failed mentoring relationships were characterized by poor communication, lack of commitment, personality differences, perceived (or real) competition, conflicts of interest, and the mentor's lack of experience.

# Evaluating Effectiveness of A Mentoring Relationship

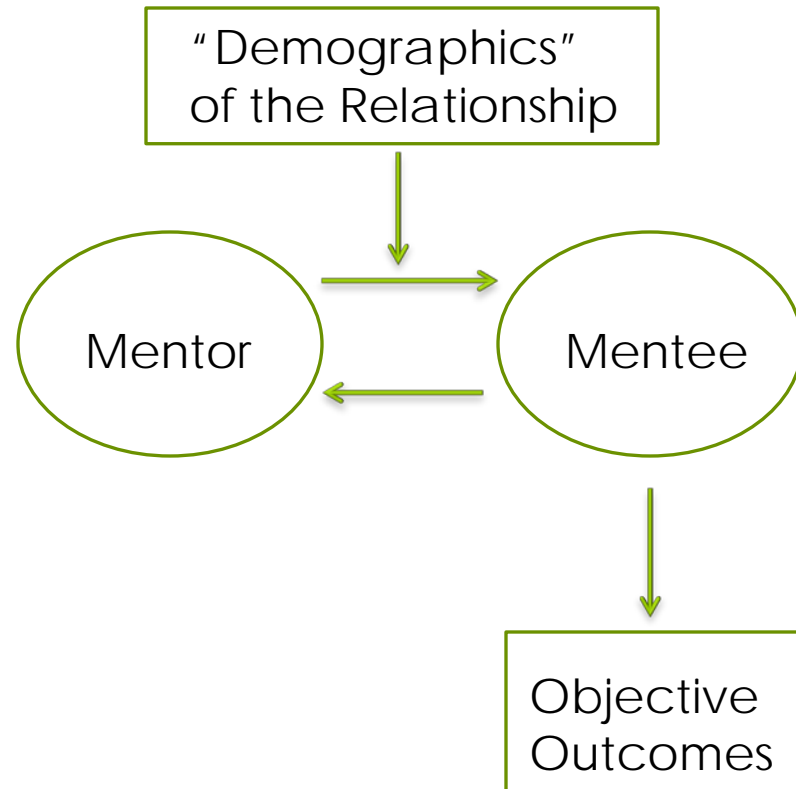


**Complex Relationship Consisting of Multiple Interactions  
Across a Broad Spectrum of Activities**

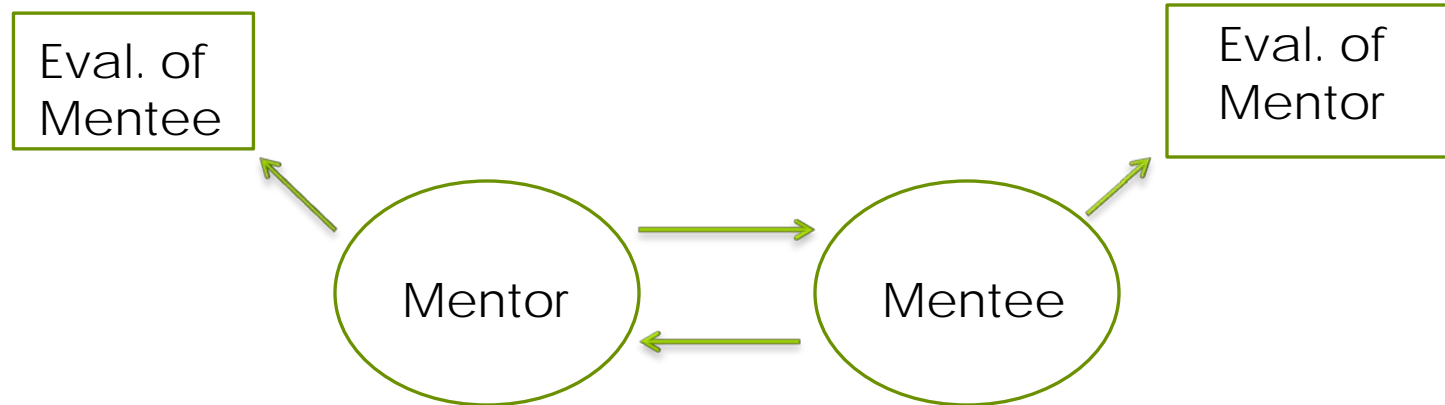
# Measuring the Effectiveness of Mentoring

- Multiple Outcomes - Some Difficult to Measure
- Quantitative and Qualitative Outcomes
- Both Important

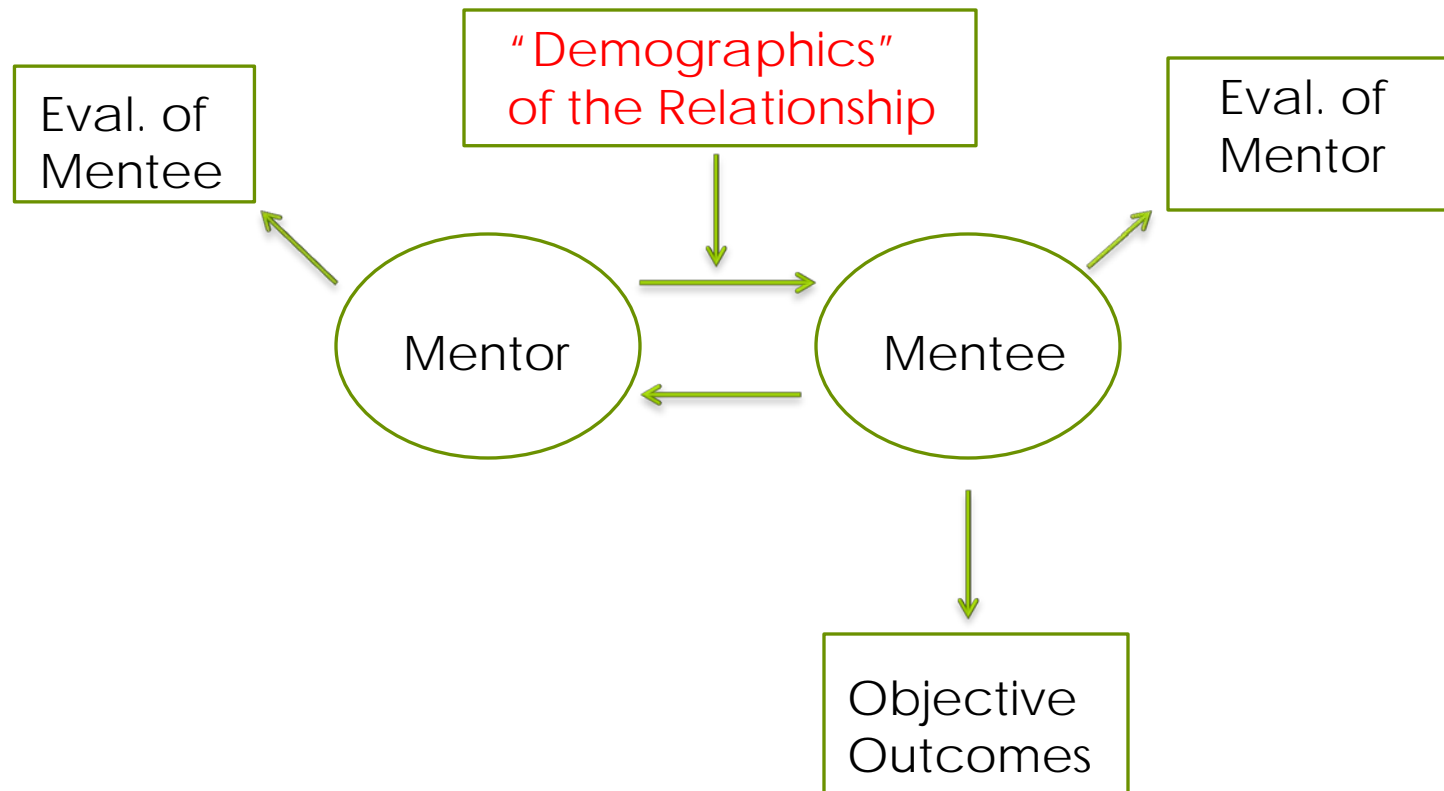
## Quantitative Metrics of A Mentoring Relationship



## Qualitative Metrics of A Mentoring Relationship



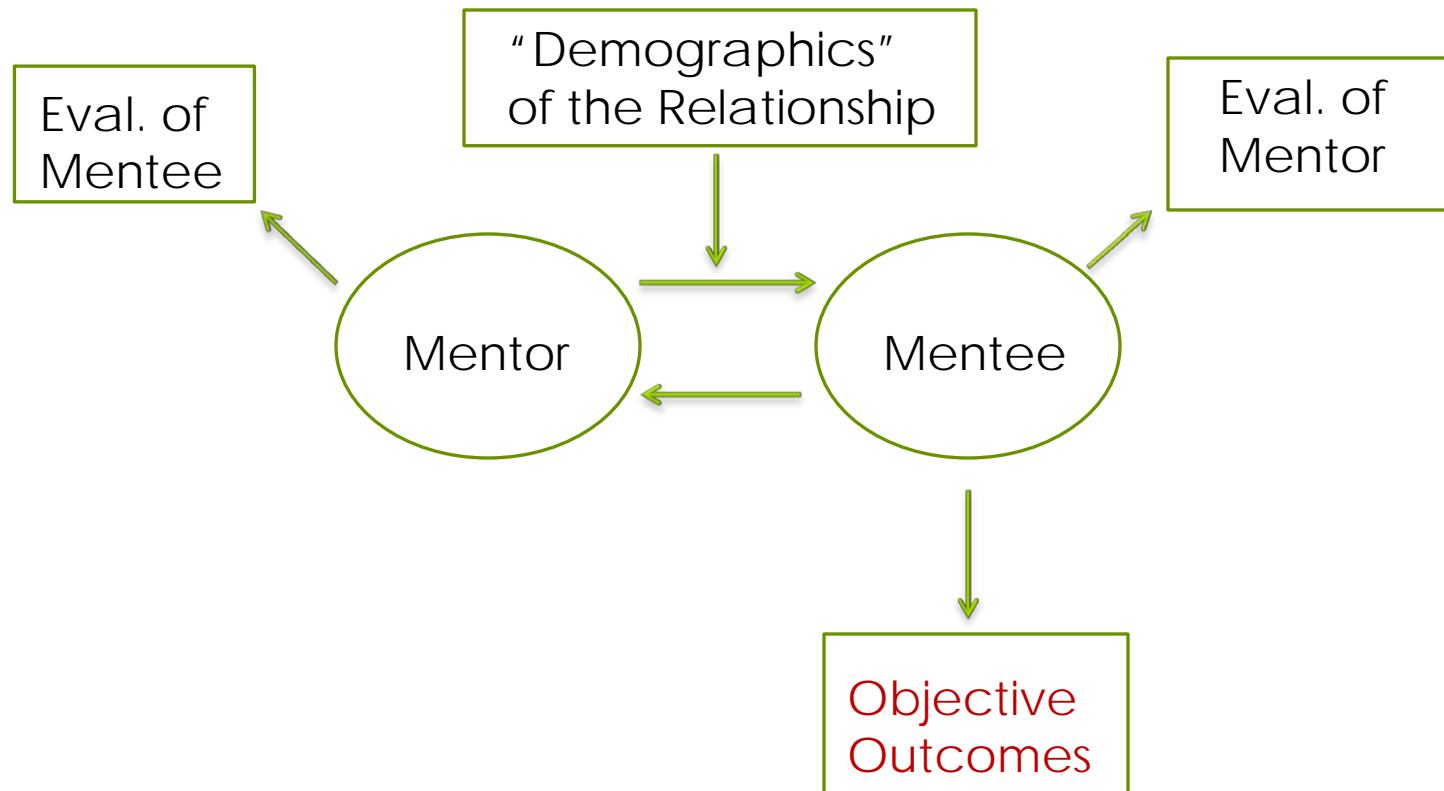
# Evaluating Effectiveness of A Mentoring Relationship



## “Demographics” of the Relationship

Characteristic	Measure
Mentee Dept, Rank, Track, Gender, Race, Age	ENT, Assistant Prof, Academic –Clinician, Female, White, 35yr
Mentor Dept, Rank, Track, Gender, Race, Age	ENT, Prof, Academic – Clinician, Female, Black, 57yr
Mentor Contract Established?	Yes
Career Development Plan Established?	Yes
Frequency of Meetings	Weekly
Duration of Typical Meeting	1 hour
Length of Relationship	18 months
More than 1 mentor? If yes, specify number and who	1 other. Dr. X assists with research mentoring

# Evaluating Effectiveness of A Mentoring Relationship





# What is the Ultimate Goal of Mentoring?

- Career Development and Advancement
- Probably Best Measured by Progress to Promotion
- Requirements for Promotion Are Measurable >>> Quantitative Metrics of Mentoring Should be Linked to Promotion Criteria

<b>Professor</b>	<b>Academic Inv</b>	<b>Academic Inv/Ed</b>	<b>Academic Cl</b>	<b>Clinician Ed</b>
Continues to meet all the criteria for Associate Professor with major accomplishments in research, teaching, and/or clinical service	R	R	R	R
Distinguished career exemplifying scholarship. Excellence & productivity in research, outstanding success as a teacher, and/or outstanding service contributions are required.	R	R	R	R
Principal investigator on significant research grants	R	S	S	
Co-investigator on research grants.		R	R	
Direct involvement in research.	R	R	R	R
Key individual in training of students and/or post-graduates.	R	R	R	R
Serves as Course Director for one or more major courses		R		
Continues to carry a heavy clinical or teaching load		R		R
Continued publication of reviews, chapters, textbooks, peer reviewed papers, and/or innovative teaching materials (new curricula, educational programs, syllabi, video materials, computer programs, etc.) that influence the science and practice of medicine at the regional & national levels	R	R	R	R
Continued publication of important and original clinical and/or laboratory investigations with significant authorship.	R		R	
Total publications with significant authorship since promotion to Associate Professor and in total (line 2)	≥10 ≥30		≥10 ≥30	
Total publications with authorship since promotion to Associate Professor and in total (line 2)		≥5 ≥10		≥5 ≥10
National recognition, as evidenced by election to generalist or specialty societies, service on national committees, study sections, editorial boards, visiting professorships and/or invitations to speak in CME courses.	R	R	R	R
Leadership roles in appropriate department, hospital and college		R	R	R



# Mentoring Metrics for Research Oriented Faculty

Professor	Academic Inv	Academic Inv/Ed	Academic Cl	Clinician Ed
Continues to meet all the criteria for Associate Professor with major accomplishments in research, teaching, and/or clinical service	R	R	R	R
Distinguished career exemplifying scholarship. Excellence & productivity in research, outstanding success as a teacher, and/or outstanding service contributions are required.	R	R	R	R
Principal investigator on significant research grants	R	S	S	
Co-investigator on research grants.		R	R	
Direct involvement in research.	R	R	R	R
Key individual in training of students and/or post-graduates.	R	R	R	R
Serves as Course Director for one or more major courses		R		
Continues to carry a heavy clinical or teaching load		R		R
Continued publication of reviews, chapters, textbooks, peer reviewed papers, and/or innovative teaching materials (new curricula, educational programs, syllabi, video materials, computer programs, etc.) that influence the science and practice of medicine at the regional & national levels	R	R	R	R
Continued publication of important and original clinical and/or laboratory investigations with significant authorship.	R		R	
Total publications with significant authorship since promotion to Associate Professor and in total (line 2)	≥10 ≥30		≥10 ≥30	
Total publications with authorship since promotion to Associate Professor and in total (line 2)		≥5 ≥10		≥5 ≥10
National recognition, as evidenced by election to generalist or specialty societies, service on national committees, study sections, editorial boards, visiting professorships and/or invitations to speak in CME courses.	R	R	R	R
Leadership roles in appropriate department, hospital and college		R	R	R

# Mentoring Metrics for Research Oriented Faculty

- # grants submitted by mentee
- # grants funded
- # first authored original publications by mentee
- # senior authored publications by mentee
- Importance of original publications (e.g., impact factor, editorial written on paper)
- Career development progress of mentee, e.g., number of presentations of research at national / international meetings, invited presentations at meetings or other universities, election to study sections or specialty societies,

## Mentoring Metrics for Research Oriented Faculty

- Mentee's role as a mentor (for promotion to Professor): # of individuals mentored, achievements of these mentees
- Mentee's contributions to research-oriented committees at department, college, university, community, state, regional, national and international levels
- Leadership roles in research in appropriate department, college, or university
- Other, e.g., Research awards of mentee
- Did mentee get promoted?



# **Mentoring Metrics for Clinician-Educators And Academic Educators**

Professor	Academic Inv	Academic Inv/Ed	Academic CI	Clinician Ed
Continues to meet all the criteria for Associate Professor with major accomplishments in research, teaching, and/or clinical service	R	R	R	R
Distinguished career exemplifying scholarship. Excellence & productivity in research, outstanding success as a teacher, and/or outstanding service contributions are required.	R	R	R	R
Principal investigator on significant research grants	R	S	S	
Co-investigator on research grants.		R	R	
Direct involvement in research.	R	R	R	R
Key individual in training of students and/or post-graduates.	R	R	R	R
Serves as Course Director for one or more major courses		R		
Continues to carry a heavy clinical or teaching load		R		R
Continued publication of reviews, chapters, textbooks, peer reviewed papers, and/or innovative teaching materials (new curricula, educational programs, syllabi, video materials, computer programs, etc.) that influence the science and practice of medicine at the regional & national levels	R	R	R	R
Continued publication of important and original clinical and/or laboratory investigations with significant authorship.	R		R	
Total publications with significant authorship since promotion to Associate Professor and in total (line 2)	≥10 ≥30		≥10 ≥30	
Total publications with authorship since promotion to Associate Professor and in total (line 2)		≥5 ≥10		≥5 ≥10
National recognition, as evidenced by election to generalist or specialty societies, service on national committees, study sections, editorial boards, visiting professorships and/or invitations to speak in CME courses.	R	R	R	R
Leadership roles in appropriate department, hospital and college		R	R	R



# Mentoring Metrics for Clinician-Educators And Academic Educators

- Clinical load of mentee (e.g., RVUs)
- Innovative clinical care developed by mentee, e.g., telemedicine, new surgical technique
- Organization of clinical services to foster clinical care, medical education or research (e.g., developing a data base for clinical research)
- Documentation of teaching activities including formal courses taught, course materials developed, innovative teaching methods developed
- Evaluations of teaching by students, residents, fellows, peers, course directors and department chairs

## Mentoring Metrics for Clinician-Educators And Academic Educators

- Participation in research
- # first authored original publications by mentee (clinical, education or research)
- # senior authored publications of mentee (clinical, education or research)
- Importance of original publications (e.g., impact factor, editorial written on paper)
- # grants submitted (education or research) by mentee
- # grants awarded

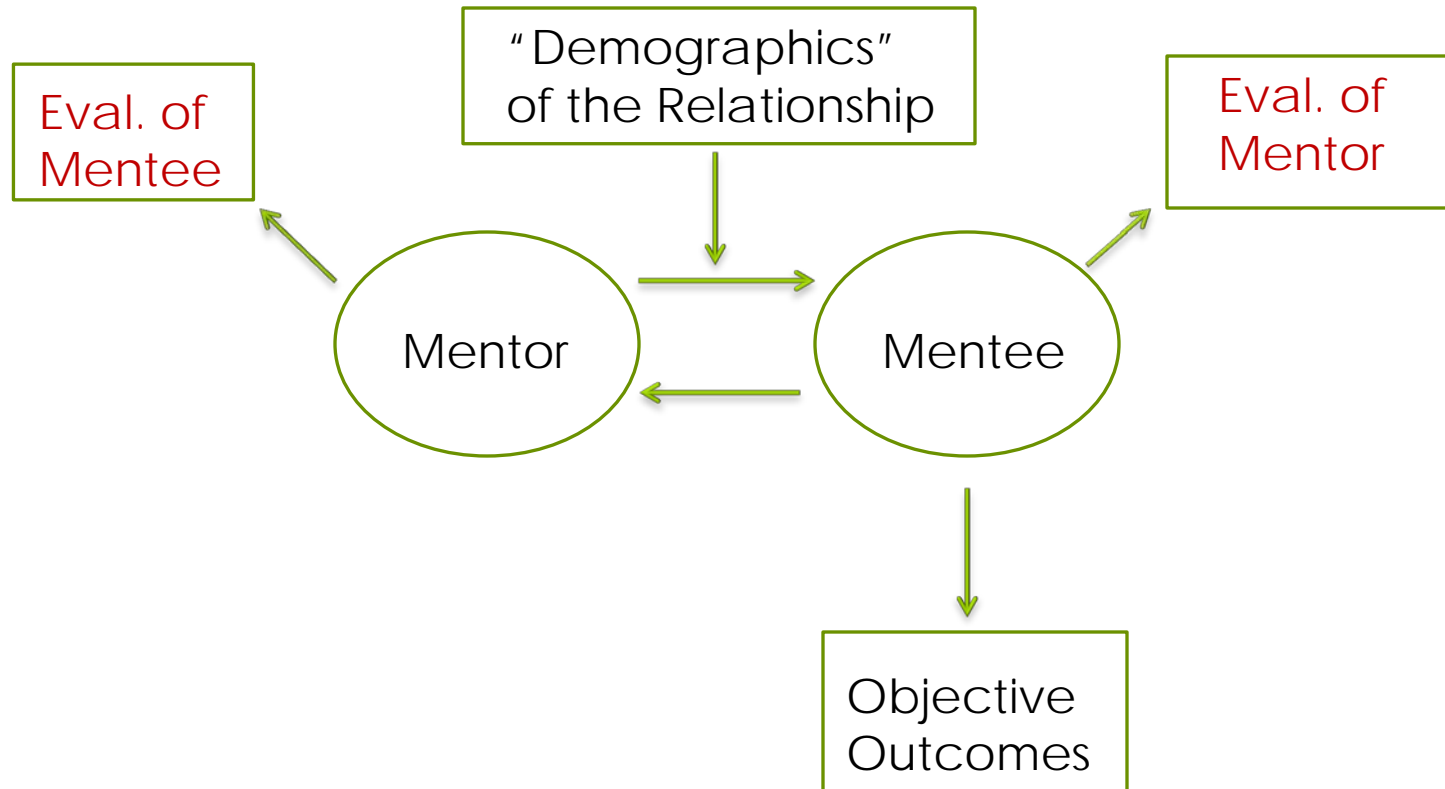
## Mentoring Metrics for Clinician-Educators And Academic Educators

- Career development of mentee, e.g., # presentations at national / international meetings, invited presentations at meetings or other universities, election to specialty societies
- Mentee 's role as a mentor (for promotion to Professor): # of individuals mentored, achievements of these mentees
- Mentee's contributions to clinical – educational committees and leadership at department, college, university, community, state, regional, national and international levels
- Other: honors and awards for teaching
- Was mentee promoted?

# Are “Products” The Most Important Metric of Mentoring?

- Product s key measure of effectiveness, e.g., successful grant submissions, leading educational program at a national meeting, etc
- If mentee productive, mentor presumed to be doing a good job
- But
  - Could have poor mentorship and successful scholar and vice versa
  - Product metrics do not provide an opportunity for early evaluation of relationship to solve problems

# Evaluating Effectiveness of A Mentoring Relationship



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## Measuring the Effectiveness of Faculty Mentoring Relationships

Ronald A. Berk, PhD, Janet Berg, MS, RN, Rosemary Mortimer, MS, MEd, RN, Benita Walton-Moss, DNS, RN, and Theresa P. Yeo, MSN, MPH, RN

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### Abstract

"Mentor" is a term widely used in academic medicine but for which there is no consensus on an operational definition. Further, criteria are rarely reported for evaluating the effectiveness of mentoring. This article presents the work of an Ad Hoc Faculty Mentoring Committee whose tasks were to define "mentorship," specify concrete characteristics and responsibilities of mentors that are measurable, and develop new tools to

evaluate the effectiveness of the mentoring relationship. The committee developed two tools: the Mentorship Profile Questionnaire, which describes the characteristics and outcome measures of the mentoring relationship from the perspective of the mentee, and the Mentorship Effectiveness Scale, a 12-item six-point agree-disagree-format Likert-type rating scale, which evaluates 12 behavioral characteristics of the mentor. These in-

struments are explained and copies are provided. Psychometric issues, including the importance of content-related validity evidence, response bias due to acquiescence and halo effects, and limitations on collecting reliability evidence, are examined in the context of the mentor-mentee relationship. Directions for future research are suggested.

*Acad Med.* 2005; 80:66-71.

**Mentorship Effectiveness Scale Developed by the Ad Hoc Faculty Mentoring Committee, Johns Hopkins University School of Nursing**

Your name: \_\_\_\_\_

**Directions:** The purpose of this scale is to evaluate the mentoring characteristics of \_\_\_\_\_, who has identified you as an individual with whom he/she has had a professional, mentor/mentee relationship. Indicate the extent to which you agree or disagree with each statement listed below. Circle the number that corresponds to your response. Your responses will be kept confidential.

- 0 – Strongly Disagree (SD)
- 1 – Disagree (D)
- 2 – Slightly Disagree (SID)
- 3 – Slightly Agree (SIA)
- 4 – Agree (A)
- 5 – Strongly Agree (SA)
- 6 – Not Applicable (NA)

SAMPLE: My mentor was hilarious.	0	1	2	3	4	5	⑥
	<u>SD</u>	<u>D</u>	<u>SID</u>	<u>SIA</u>	<u>A</u>	<u>SA</u>	<u>NA</u>
1. My mentor was accessible.	0	1	2	3	4	5	6
2. My mentor demonstrated professional integrity.	0	1	2	3	4	5	6
3. My mentor demonstrated content expertise in my area of need.	0	1	2	3	4	5	6
4. My mentor was approachable.	0	1	2	3	4	5	6
5. My mentor was supportive and encouraging.	0	1	2	3	4	5	6
6. My mentor provided constructive and useful critiques of my work.	0	1	2	3	4	5	6
7. My mentor motivated me to improve my work product.	0	1	2	3	4	5	6
8. My mentor was helpful in providing direction and guidance on professional issues (e.g., networking).	0	1	2	3	4	5	6
9. My mentor answered my questions satisfactorily (e.g., timely response, clear, comprehensive).	0	1	2	3	4	5	6
10. My mentor acknowledged my contributions appropriately (e.g., committee contributions, awards).	0	1	2	3	4	5	6
11. My mentor suggested appropriate resources (e.g., experts, electronic contacts, source materials).	0	1	2	3	4	5	6
12. My mentor challenged me to extend my abilities (e.g., risk taking, try a new professional activity, draft a section of an article).	0	1	2	3	4	5	6

**Please make additional comments on the back of this sheet.**

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# Barriers to Evaluating Mentors

- Power differential: career dependence - negative feed could compromise mentee's career

Male Speaker 4: I can think on multiple occasions when I would have probably liked to have made a minor comment about something that my mentor could improve and didn't. I, quite frankly, did not say anything.

Male Speaker 1: There's no way in hell.

Male Speaker 4: There's no way I would.

Male Speaker 1: Why are you shooting yourself in the head? That's painful.



# Other Barriers to Evaluating Mentors

- Lack of anonymity (i.e., confidentiality) - honest feedback difficult
- Feedback is subjective
- Mentors may not be willing to recognize their faults or change behavior
- Mentor program directors, Mentor Champions, and even Chairs have limited ability or authority to fix

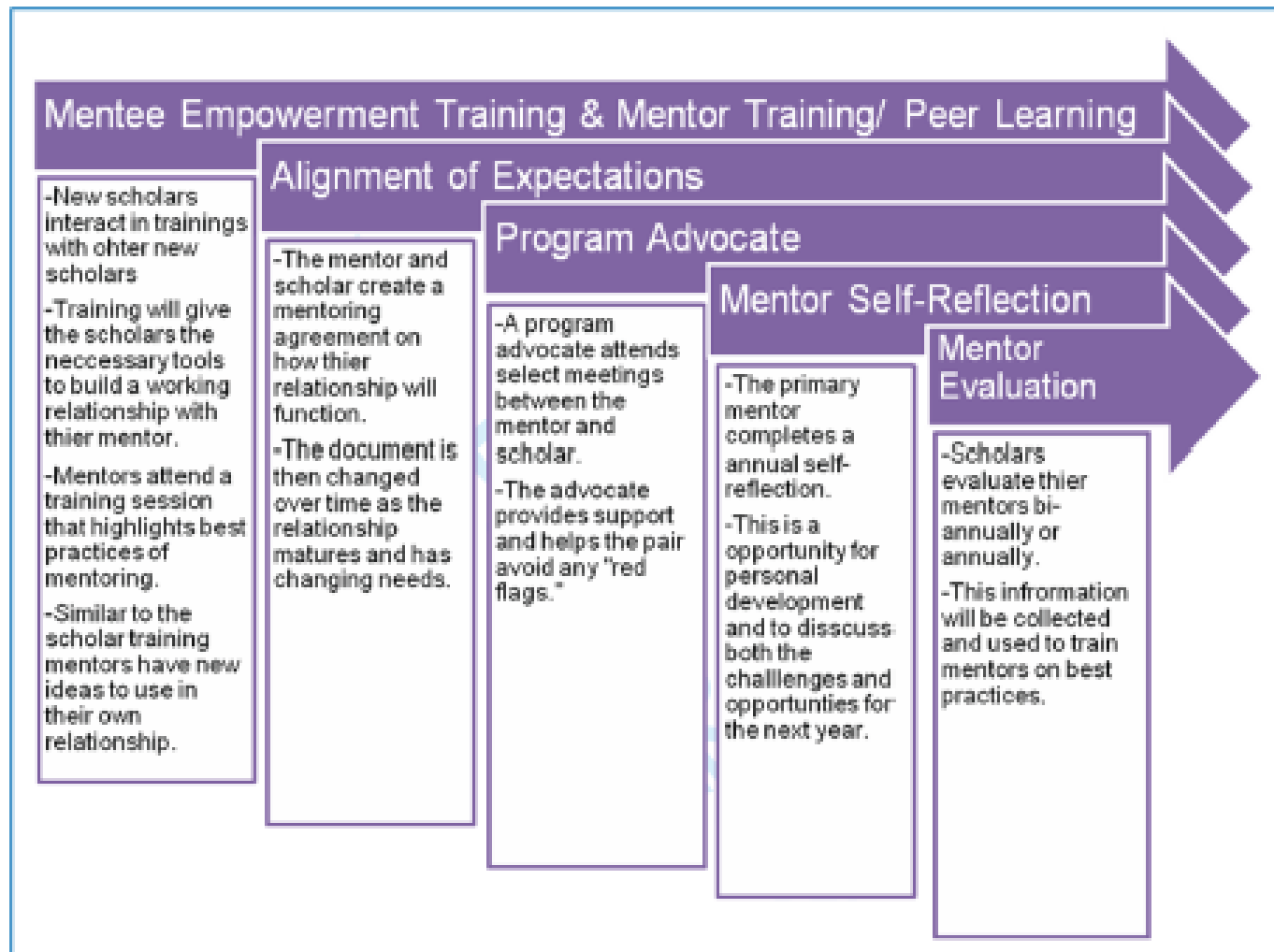
*Clin Transl Sci.* 2012 February ; 5(1): 71–77. doi:10.1111/j.1752-8062.2011.00361.x.

## **Evaluating and Giving Feedback to Mentors: New Evidence-Based Approaches**

**Lauren Anderson, M.Ed.<sup>1</sup>, Karin Silet, M.A.<sup>2</sup>, and Michael Fleming, M.D.<sup>1</sup>**

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<sup>2</sup>Institute for Clinical and Translational Research, University of Wisconsin-Madison, Madison, Wisconsin, USA



**Figure 1.**  
New model to evaluate mentoring relationship.

*Clin Transl Sci.* 2010 December ; 3(6): 299–304.

## **A National Survey of Mentoring Programs for KL2 Scholars**

**Karin A. Silet, M.A.<sup>1</sup>, Pamela Asquith, Ph.D.<sup>1</sup>, and Michael F. Fleming, M.D., M.P.H.<sup>2</sup>**

<sup>1</sup>Institute for Clinical and Translational Research, University of Wisconsin-Madison, Wisconsin, USA

<sup>2</sup>Northwestern University Feinberg School of Medicine, Illinois, USA

Summary of a national survey of CTSAAs ( $n = 46$ ).

	2006 grantees $n = 12$	2007 grantees $n = 11$	2008 grantees $n = 14$	2009 grantees $n = 8$
Roadmap K12 prior to award	3 (25%)	4 (36%)	1 (7%)	0
NCRR K12 prior to award	4 (36%)	6 (54%)	3 (22%)	0
NCRR K30 prior to award	10 (83%)	9 (82%)	11 (80%)	6 (75%)
Average number of KL2 scholars	14 scholars	10 scholars	5 scholars	5 scholars
Average duration of KL2 award	3 years	3 years	3 years	3 years
MS required	9 (75%)	7 (63%)	8 (57%)	2 (25%)
MS encouraged	1 (8%)	1 (8%)	0	1 (12%)
Mentor contract used	5 (42%)	5 (45%)	4 (30%)	0
Mentor training programs	4 (36%)	4 (36%)	3 (22%)	2 (25%)
Formal evaluation of mentor	6 (50%)	6 (54%)	3 (22%)	1 (12%)
Fiscal incentives to mentors	3 (25%)	4 (36%)	1 (7%)	2 (25%)



# Metrics for Evaluating Department-Wide Mentoring Programs

# Metrics for Evaluating Department-Wide Mentoring Programs

- **Survey of faculty:** participation and satisfaction with the mentoring program and satisfaction with career development
- **Attrition** of faculty in the department, especially junior and mid-level faculty for the wrong reasons
- **Promotion** of faculty within the department

# Metrics for Evaluating Department-Wide Mentoring Programs

- Research:

- # career development awards of mentees (e.g., K23, K08, K99/R00, VA career development awards)
- # first R01s, VA Merit Review awards of mentees
- # mid-career awards for trained mentors NIH (K05, K07, or K24 grants)
- Total research funding resulting from all mentored activities
- Total # first, mid, last authored publications from all mentored activities



# Metrics for Evaluating Department-Wide Mentoring Programs

- **Clinical and Educational**

- Growth of clinical services, revenue, and new programs resulting from mentored activities
- New courses, educational activities resulting from mentored activities
- # educational grants resulting from mentored activities
- Total # first, mid, last authored publications resulting from all mentored clinical and education activities

# Does Mentoring Work in Academic Medicine?

- Not systematically studied
  - **Sambunjak D, et al. JAMA 2006:** “had an important influence on personal development, ... and research productivity, including publication and grant success”
  - **Palepu A, et al. Acad Med 1998:** “faculty with mentors rated their research preparation and research skills higher than faculty without mentors”
  - **Windgard DL, et al. Acad Med 2004:** “Improved retention rates of mentored faculty, savings in faculty recruitment greater than cost of the mentoring program”

Clin Transl Sci. 2012 Aug;5(4):362-7. doi: 10.1111/j.1752-8062.2012.00419.x. Epub 2012 Jun 1.

## **A mentor development program for clinical translational science faculty leads to sustained, improved confidence in mentoring skills.**

Feldman MD, Steinauer JE, Khalili M, Huang L, Kahn JS, Lee KA, Creasman J, Brown JS.

Division of General Internal Medicine, Department of Medicine, University of California, San Francisco, San Francisco, California, USA. [mfeldman@medicine.ucsf.edu](mailto:mfeldman@medicine.ucsf.edu)

# Randomized Trial to Evaluate Effectiveness of Mentor Training

- 15 site study (all CTSA sites) led by University of Wisconsin-Madison
- K series mentors randomized to participation in mentor training program or not
- **Primary aim:** to determine whether a skills-focused, case-based, mentor training program can improve the mentoring skills of K series mentors
- ClinicalTrials.gov Identifier: NCT01184131
- Final Paper In review (Stephanie House 4/29/13)

# Summary


- More reliable data on best practices for effective mentoring and impact of mentoring on productivity of mentees emerging
  - CTSA's have played an important role
- Available data suggest that effective mentoring improves productivity of mentees
- Mentees who have been effectively or ineffectively mentored know it!

# Summary

- Key metrics on each mentor – mentee relationship and department-wide mentoring programs should be collected
- Quantitative and qualitative metrics important to track success of programs and to provide feedback to mentees, mentors and program leaders
- Qualitative metrics pose potential interpersonal challenges - can be overcome if a priori commitments made between mentor and mentee (contract useful in this regards)

# A continuum

[http://www.ce.umn.edu/~smith/docs/Streveler-Borrego-Smith-SoTL\\_to\\_EER-\\_Improve\\_the\\_Academy-2007.pdf](http://www.ce.umn.edu/~smith/docs/Streveler-Borrego-Smith-SoTL_to_EER-_Improve_the_Academy-2007.pdf)



<b>Excellent teaching</b>	<b>Use of good content and teaching methods</b>
<b>Scholarly teaching</b>	<b>Use good content and methods : include strategies for classroom assessment (<u>what or how much</u>) and evidence gathering</b>
<b>Scholarship of teaching and learning</b>	<b>Public dissemination; open to critique and evaluation, in a form others can build on</b>
<b>Educational research</b>	<b>Theoretical base, formal research question (<u>why or how</u>), and discipline specific methods of research design</b>

# Reframing teaching for scholarship

- Where are you on the continuum?
- What evidence exists in your field for teaching?
- What evidence do you use in your teaching?
- If none, where might you start?
- If some, how might you continue?
- If lots, who are you mentoring?





# Funding teaching-as-research

	<b>Teaching</b>	<b>Scholarly teaching</b>	<b>Scholarship of teaching and learning</b>	<b>Educational research</b>
	<b>Based on expertise</b> <b>Academic need</b>	<b>Individual passion</b> <b>Thoughtful work</b>	<b>Individual initiatives that explore efficacy or effectiveness of the teaching-learning process</b>	<b>Programmatic initiatives that generate new evidence for enhancing teaching practice and learning</b>
<b>Funding sources</b>	<b>Tuition \$\$\$</b> <b>Overhead</b>	<b>Tuition \$\$\$</b> <b>Overhead</b>	<b>Tuition \$\$\$</b> <b>Overhead</b> <b>Seed money</b> <b>Internal/External</b>	<b>Grants/Contracts</b> <b>Private/Public</b>

# Showcasing your efforts

## Teaching portfolios

Philosophy of teaching and learning

Goals

Responsibilities, percentage of effort

Synopsis of course/modules/presentations

Examples of teaching-learning materials, innovation ...

## Evidence

Student learning

- Characteristics and assessment of the learners

Teaching effectiveness

- Aggregate course evaluations
- Aggregate teaching evaluations
- Peer evaluations
- Awards

Dissemination

- Publications, presentations ...

Funding

Mentoring

