

**USING TECHNOLOGY TO LINK**  
**MENTORS AND MENTEES: A**  
**DATA DRIVEN APPROACH**

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# Future of Academics

- New Institutional Clinical and Translational Science Award (U54)
  - Coordinating a Collaborative Team
  - Focusing on Transformative, Novel, and Integrative Approaches
- Complex and Dynamic Funding Environment
  - Increasing Regulatory Requirements
- Dispersed Faculty and Affiliate Locations
- Limited Time/Support for Mentorship Available
  - Articulating excitement and sharing knowledge
  - Facilitating Knowledge Advancements
  - Improving Patient Care

# Technology-Enabled E-Mentoring

- Advantages
  - Flexibility and Accessibility
    - Crosses traditional boundaries
  - Addresses limited faculty time and staff support
  - Assures comprehensive, accurate, reliable, and timely information is available
  - E-Portfolio Approach
    - Identifies, monitors, and reports mentorship successes
  - Philosophy = “inclusive” versus “exclusive”
    - Virtual social network created for faculty and trainees

Adapted from Headlam-Wells, Intl. J. of Info. Mgt., 2006

# Technology-Enabled E-Mentoring

- Potential Challenges
  - Balancing Technology and Humanistic Factors
    - Data versus relationships
    - Need for emotional intelligence (EQ versus IQ)
  - Higher technological start-up costs
  - M-cubed Philosophy = Used for mentors and mentees to identify, monitor, and improve relationships

# What is Mentorship?

- A formal relationship between a trainee and a professional expert to further the trainee's knowledge, skills, or career
  - Dictionary.com
- Common “mentorship” roles
  - Expert
  - Consultant
  - Collaborator
  - Mentor oversight for research project
  - Career development coach
  - Life coach
- Clearly identify the mentorship role and responsibilities
  - One-to-one mentoring
    - Peer-mentoring versus Senior faculty mentoring
  - Dual mentoring or Group mentoring teams

# Mentoring Viewpoints

Shamoo and Resnik (2003)

- Very important part of education and training
- Provide not only knowledge, but also wisdom and advice
- Teach by example
- Provide constructive criticism intended for support
- 
- Provide “real life” understanding and insights
- Promote trainee’s career and long-term goals
- Differences between expectations for “Advisor” versus “Mentor” versus “Coach” – definitions a bit unclear

# Mentor-Mentee Matching a.k.a., M-cubed

- Facilitate mentorship, collaboration, and consultation
- Cross “traditional” academic borders
- Enrich academic culture to be more culturally sensitive and supportive
- System-wide endeavor to enhance multi-disciplinary and inter-disciplinary dialogue

# Goals for M-cubed

- Fiduciary Responsibility
  - Provide best information available based on public domain resources
- Assure Ethical Approach to M-cubed
  - Autonomy, beneficence, nonmaleficence, veracity, privacy, confidentiality, fidelity, trust, respect, and justice
  - Best advice, appropriate credit, recognition for innovation, acceptable workload, as well balanced relationship that builds a win/win situation
- Innovation
  - Passing the “Torch” of Knowledge on to others
  - Inspiring protégés to consider academic or research-based careers
  - Enhancing creativity and improving patient care

Adapted from Shamoo and Resnik (2003)

# Mentorships are Relationships: More than Data-Driven

- E-Mentoring Matching Factors Anticipated
  - Age (Mentor usually older)
  - Experience (Mentor usually more experienced)
  - Level of Qualifications (Mentor usually more qualified)
  - Life history and career pathway resonance
  - Shared personal and professional values
- E-Mentoring Assessments Suggested
  - Pre-/Mid-/Post-Mentorship Evaluations
  - Identifying Opportunities for Improvement

Adapted from Headlam-Wells, Intl. J. of Info. Mgt, 2006

# PERI Scale – Surrogate Approach?

- Life learning-related events
- Work-related events
- Relationship-related events
- Parenting-related events
- Family-related events
- Life transition-related events
- Legal-related events
- Natural disaster or military-related events

PERI Scale categories developed by Dohrenenwend et. al.  
J. Health and Soc. Behav., 1978

# Flexibility to Evaluate Options

- Try it on for size – as one size does not fit all!
- Mentorship or collaboration is NOT random process related to innate talents of the individuals involved...but rather a **logical, orderly, sequential, and thoughtful process** of attaining a life long career goal via a research project, academic advancement, networking, and career planning

Adapted from Martin, J. Am. Child and Adol Psych, 2005

# Demonstration

- Main Web Site
  - <http://www.clscmentormatch.com>
  - Mentee Viewpoint
  - Mentor Viewpoint
- Administrative Reporting Capabilities
  - [https://www2.uchsc.edu/clinicalscience/mentor/reports/reports\\_login.asp](https://www2.uchsc.edu/clinicalscience/mentor/reports/reports_login.asp)
- Training Program Outreach and Reporting
  - <https://www2.uchsc.edu/clinicalscience/U01/2master.htm>
- Seeking Industry Support

# Graduate School and School of Medicine Faculty Profile Updates

	GS	SOM
Activated	328	56
Not-Activated	1	1672

# Faculty-to-Faculty Collaborative Preferences

Preference for Collaboration Specified	GS (n=53)	SOM (n=56)
Agree to Collaborate	50	53
Do not agree	3	3

# Faculty Characteristics Identified: Used for Mentee Selections

	GS	SOM
Ethnicity Race	Indicated=31 Available=23	Indicated=28 Available=18
Gender	Indicated=42 Available=36 Preference=3	Indicated=36 Available=32 Preference=4
First Generation Higher Ed	Indicated=2 Available=2	Indicated=4 Available=3

# ***CLSC Program Students Graduate School Pilot Test***

- Advanced Academic Training Options
  - Certificate (n = 20)
  - MSCS (n = 5)
  - PhD (n = 33)
- 58 E-mails Distributed to Certificate, MSCS, and PhD Students on 2/27/06

# *Activation Rates by CLSC Students*

CLSC Students	Activated	Not Activated	Total
Certificate (n=20)	16	4	20
MSCS (n = 5)	3	2	5
PhD (n=33)	21	12	33
Total	40	18	58

# Additional Graduate Student Activations

- 12 Other Graduate Students Requested Access – Self-Solicitations
  - 6 male and 6 female (50%/50%)
  - No gender-based mentor preferences were identified
  - 86% preferred e-mail and 14% preferred face-to-face contact (no one preferred phone contact!)
  - 57% (< 1 hour/week), 29% (1-3 hours/week), and 14% (> 3 hours/week) requested

# *Student Gender Activation Rates*

CLSC Students	Activated	Not Activated	Total
Male	14	11	25
Female	25	8	33
Total	40	18	58

# *Students with Faculty Gender Preference Identified*

	Female	Male
CLSC Program Students Activated	25/76%	14/56%
Identifying Gender Faculty Preference	2/9%	0/0%

# Preferred Contact Method

Method	(n=32)
E-mail	24/75%
Face to face	7/22%
Phone	1/3%

# Hours Requested for Mentoring

	(n=32)
< 1 hour/week	23/72%
1 – 3 hours/week	8/25%
3+ hours week	1/3%

# Miscellaneous

- 52% of CLSC students entered personal information
- Race/Ethnicity
  - White = 57%
  - Multi-racial = 14%
  - Hispanic = 14%
  - Asian = 14%

# Mentee's Assessment of Success

- BERK MENTORSHIP EFFECTIVENESS SCALE
  - 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

# Berk Scale Questions

1. My mentor was **accessible**.
2. My mentor demonstrated **professional integrity**.
3. My mentor demonstrated **content expertise** in my area of need.
4. My mentor was **approachable**.
5. My mentor was **supportive and encouraging**.
6. My mentor provided **constructive and useful critiques** of my work.
7. My mentor **motivated me** to improve my work product.

8. My mentor was helpful in providing **direction and guidance** on professional issues (e.g., networking).
9. My mentor **answered my questions** satisfactorily (e.g., timely response, clear, comprehensive).
10. My mentor **acknowledged my contributions** appropriately (e.g., committee contributions, awards).
11. My mentor **suggested appropriate resources** (e.g., experts, electronic contacts, source materials).
12. My mentor challenged me to **extend my abilities** (e.g., risk taking, try a new professional activity, draft a section of an article).

# Special Needs for Mentors

- Gender-based Mentoring
  - Need for women helping women navigate advanced academic training programs and academic career options
- Challenge
  - Shortage of senior female mentors
  - Shortage of female mentors with adequate time and energy to address psycho-social support questions and unique academic career conflicts

# Informal Mentoring Needs

- Under-Represented Groups Mentoring
  - Need for minorities and under-represented groups not to feel isolated and to build connections
  - Although not well studied, traditionally under-represented groups tend to be drawn to those who are racially similar
- Challenge
  - Shortage of under-represented mentors – called upon by trainees that are increasingly diverse
  - Need for role models at senior levels
    - “hidden curriculum” of professionalism, value, and the art of medicine – provides a need for connections

# Different Generations = Different Perspectives

- Generational Diversity

“Contemporaries that share experiences during a period of time that have common events, experiences, and images remembered”

- Traditionalists (pre-1946)

- Boomers (1946-964)

- “loyal”, “respect authority”, “delayed gratification”, “self-sacrifice is valued virtue”, “optimistic”, “team based”,

- Generation X (1964-1980)

- “value work-life balance”, “question authority”, “technologically proficient”, “expected new transferable skills and knowledge”, “global thinkers”, “egalitarian”

- Millennium “Nexter” Generation (1980+)

- “mobile”, “technologically sophisticated”, “collective action focused”, “civic duty”, “fast-paced”, “personal accountability”, “idealistic”

Mentorship expectations may need to be adapted, as the “Do as I Did!” historical advice used may have limited acceptability

# Value Perceived for Formal Mentoring Programs

- Empirical data suggest the benefits of mentoring programs at an organizational level
- Participants appear to be more attracted to organizations when formal mentoring programs are in place

Allen et. al., Hum Res. Dev., 2006

# UNM Programs

- Key minority programs developed
  - Intensive weeklong sessions
  - Onsite and distance mentoring
  - Peer-based supportive interactions
- Innovative programs at UNM appear to have early outcomes that may support the benefits

Yager et. al., Acad. Psych., 2007

# “The Armful”

by Robert Frost, 1956

For every parcel that I stoop down to seize

I lose some other off my arms and knees,

And the whole pile is slipping, bottles, buns

Extremes too hard to comprehend at once

Yet nothing should I care to leave behind

With all I have to hold with hand and mind

And heart, if need be, I will do my best.

To keep their building balanced at my  
breast.

I crouch down to prevent them as they fall;

Then sit down in the middle of them all.

I had to drop an armful in the road

And try to stack them in a better load.

# Summary

- Data-driven approaches to identification, monitoring, and improving mentorship can be technology enabled
- Relationships, however, are more than data-driven
- Mentorship, collaboration, and consultation will build a new metric of academic success = social capital - beyond traditional approaches

# Social Capital – a Growing Academic Currency

Future academic success will not be exclusively dependent upon simple metrics of manuscripts, grants, or course taught .....but rather based upon the very human and fallible relationships you build during the journey towards your longer-term academic career goals!