




New Directions for 'Clerkship' Education: Lessons from Three Schools

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New Directions for Medical Education

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Longitudinal Integrated Clerkships: The Year III Alternative Curriculum


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Definition of LIC

Longitudinal Integrated Clerkships are those having the central element of clinical education where medical students:



- Participate in the comprehensive care of patients over time
- Have continuing learning relationships with these patients' clinicians,
- Meet, through these experiences, the majority of the year's core clinical competencies across multiple disciplines simultaneously.







Content

- Background: Program Demographics
- Motives
- Objectives
- Process for selecting students
- Structure
- Assessment of Learning
- Challenges
- Outcomes



Background: Demographics

- Initiated in 2002-2003 AY
- Developed in conjunction with major curriculum reform that began in mid-1990's
- Developed by Year 3-4 Curriculum Committee
- Barriers
- Selects up to 12 students in competitive application process


Motives

- Shrinking range of clinical problems in inpatient settings
- Lack of opportunities to experience electives
- Lack of substantive continuity experiences in women's health/obstetrics, primary care specialties, psychiatry
- Limited exposure to attending faculty physicians for education and assessment
- Limited exposure to 'realistic' practice environments





Objectives


- Learning Objectives were the same as for the standard curriculum
- Link students to a small number of clinical faculty in ambulatory practices
- Provide flexibility in choice of practice-type (private, integrated, community-based)
- Provide longitudinal patient care experiences
- Provide elective opportunities
- Provide flexible time to pursue special Scholarly Project




Process to Select Students




- Students must apply to the program
- Selection criteria include:
 - Academic qualifications
 - Rationale for choosing program (essay)
 - Quality of proposed Scholarly Project




Structure of LIC




- Two 6 month blocks
 - one exclusively inpatient (not integrated)
 - one exclusively ambulatory (integrated)
- Scholarly Project




Structure of LIC




- Inpatient Block
 - 6 continuous weeks of Internal Medicine
 - 6 continuous weeks of General Surgery
 - one month inpatient Pediatrics
 - one month inpatient Psychiatry
 - one month inpatient OB/GYN



Sample Inpatient Schedule



Didactic- ½ day per week				
Medicine- 6 weeks	General Surgery- 6 weeks	Pediatrics- 4 weeks	Ob/Gyn - 4 weeks	Psychiatry- 4 weeks



Structure of LIC



- 6 month ambulatory block
 - 1.5 days ambulatory Internal Medicine/Family Medicine
 - one half day ambulatory women's health
 - one half day elective
 - one half day small group seminars or free time
 - Two days of ambulatory pediatrics for three months
 - One day of ambulatory psychiatry for three months
 - 16 emergency room shifts over three months and completion of the core emergency medicine curricular requirements



Sample Ambulatory Schedule



First 3 months:

MONDAY	TUESDAY	WED	THURSDAY	FRIDAY
Med./Fam.Med	Med./Fam.Med.	Seminars/Free	Pediatrics	Pediatrics
Med./Fam.Med.	Ob/Gyn	Electives	Pediatrics	Pediatrics

Second 3 months:

MONDAY	TUESDAY	WED	THURSDAY	FRIDAY
Med./Fam.Med	Med./Fam.Med.	Seminars/Free	Emed shifts	Psychiatry
Med./Fam.Med.	Ob/Gyn	Electives	Emed shifts	Psychiatry



How Does This Differ from the Regular Curriculum?



- Much longer ambulatory pediatrics exposure
- Much longer ambulatory internal medicine/family medicine exposure
- Longitudinal women's health exposure
- New ambulatory psychiatry curriculum
- More opportunities to experience electives
- Opportunity to complete emergency medicine in Year 3 instead of Year 4
- More time for Scholarly Project




Assessment of Learners





- Faculty use standard evaluation form for subjective evaluation of clinical performance
- Students complete the same OSCE exams and NBME Subject Exams, but on their own flexible schedule.
- Assessments are incorporated into the 6 core clerkship grades.








Challenges

- Only 12 students can be assigned per year. Expansion considered too difficult
- Scheduling is very complex
- Suitable ambulatory psychiatry and ob/gyn sites are very difficult to find
- Although longitudinal experiences are much longer, they are probably still too short to have fidelity with real practice
- Students are assigned to preceptors, not to a cohort of 'their own' patients. Preceptors/patients are not all in a single integrated delivery system.



Outcomes

- Highly rated by students (of course, they self-select!!)
- Case-control study of first 6 cohorts shows no difference in:
 - Clerkship grades
 - Step 2 CK scores
 - NBME subject exam scores
 - End-of-third year OSCE scores
 - Specialty choice
 - Match rates


Getting to Change at UCSF: PISCES--A Longitudinal Integrated Clerkship

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Content


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- Outcomes



Background: the UME Context

ACE

- Superb, diverse students and faculty
- Rich clinical culture of excellence and variety
- Defined and limited clinical core
- Transformed "preclerkship" curriculum
- Pride in outcomes (except ↑ grads=faculty)
- National leadership in innovation
- Universal challenge: transform clinical learning




Recent Change Process

ACE

- **2005:** Curriculum Retreat on Clinical Learning
- **2005-6:** Task Force for Clinical Innovation
- **2005 →** Incremental clinical core PILOTS to test guiding features

Guiding features:


- Continuity with patients
- Continuity of site; system
- Relevant core curriculum
- Continuity with peer cohort
- Continuity with faculty
- Experience w/ "undifferentiated" patients



Current Context: Carnegie Recommendations

ACE



- **Integration**
 - Connect knowledge and experience
- **Habits of inquiry and improvement**
 - Focus on excellence
- **Standardization and individualization**
 - Set outcomes and allow flexibility in learning
- **Identity formation**
 - Develop professional values and dispositions



Motives: Challenges in Traditional Third Year

ACE



- Erosion of relationship with the patient, the inpatient team, faculty and the course of illness.
- Lack of authentic roles in patient care.
- Lack of exposure to undiagnosed patient.
- Fragmentation of medical care (e.g. inpatient/outpatient, specialty clinics/services, 80 hour work week, shorter attending rotations).
- Limited observation of skills, professionalism, communication.
- Lack of continuity between rotations regarding skills development across third year.

Definition of LIC



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- 1) participate in the comprehensive care of patients over time
- 2) have continuing learning relationships with these patients' clinicians,
- 3) meet, through these experiences, the majority of the year's core clinical competencies across multiple disciplines simultaneously.



Structure: PISCES Program Overview

- One-year integrated longitudinal clerkship (third year) at major academic medical center and practices
- 2007-2008: Pilot with 8 students
- 2008-9: Expanded to 16 students
- 2009-10: stable at 16 students



Structure: PISCES Program Overview

- Core Elements
 - Patient cohort
 - Longitudinal Preceptor clinics
 - Advising/mentoring program
 - Longitudinal curriculum
 - ED, OR, and "call" sessions
 - Inpatient immersion
 - Comprehensive student assessment
 - Program assessment

Key Element: Patient Cohort

- Students acquire their own cohort of patients (50-75) via acute care sessions, call and preceptorships
- Students follow patients wherever they go
- Pager notification when cohort patients @ ED, L&D, admissions, OR and clinics
- Patients selected to target core competencies for each discipline, and for continuity






Structure: Core Competencies

- Anesthesiology
- Family and Community Medicine
- Internal Medicine
- Neurology
- Obstetrics and Gynecology
- Ophthalmology
- Orthopedic Surgery
- Otolaryngology
- Pediatrics
- Psychiatry
- Surgery
- Urology



Sample Student Schedule Week 1

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Surgery Rounds 7-8am	If students have a patient in their cohort or who they are following after a surgical procedure, they will round with the team/chief resident in the morning.						
Medicine Rounds 8-9am	If students have a patient in their cohort or who they are following who is in the hospital, they will round with the team/chief resident in the morning.						
AM Clinic 9 - 12	Internal Medicine	OB/GYN	Surgery Clinic	Neurology	Pediatrics	One weekend day per month, students will take call with Emergency Department, Pediatric ER/Urgent Care or discipline specific call 8 hours.	
PM Clinic 1-5	Self Directed & Cohort Learning	PISCES School	Self Directed & Cohort Learning	Emergency Department	Self Directed & Cohort Learning		
Evening/ Night 6p - 7a	One evening per week, students will take call in the evenings with Emergency Department, Pediatric ER/Urgent Care or discipline specific call 4 hours.						



Assessment of Students

- Comprehensive and Integrated
 - RIME structure, quarterly review
 - Preceptor observation and feedback
 - OSCE's
 - Integrated shelf exam
 - Chart review exercise/peer evaluation
- Comparable discipline specific
 - All assessments and grades of traditional clerkship
- Comparable global
 - CPX



Challenges

- Administrative
 - intensity and complexity
- Preceptor:
 - recruitment, support, development
- Students:
 - Integrating from outset is overwhelming
 - Delayed grading
 - Balance of specialty patients



Outcomes: 2 Years LIC v. Traditional

- Students more satisfied with
 - Faculty teaching
 - Observation of clinical skills
 - Feedback
 - Structured didactics
- Perform better on clinical examinations
 - information gathering



LIC Outcomes (cont.)

- Student attitudes towards patients
- Patient attitudes towards students
- Preceptors
 - Satisfaction with teaching, investment
- Career choice
 - Full range

Outcomes: Patient Experience




- Positive impact of students
 - LIC and Traditional Clerkship Patients
 - Patient education
 - Interpersonal connection
 - LIC patients
 - Continuity of care
 - Coordination of care

Outcomes 2007-2010: Structured v. Traditional

Strengths Perceived in Clinical Experience


<u>Structured (SCP)</u>	<u>SCP + Traditional</u>
<ul style="list-style-type: none"> • more support for patient centered behavior • better ratings for FCM and Pediatrics • better performance in clinical skills exams 	<ul style="list-style-type: none"> • Opportunities to: <ul style="list-style-type: none"> • see same patients • Work with stable cohort of peers, faculty • Experience non-evaluative mentoring • Be at same site over time

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Columbia-Bassett: A Goal of Training Modern Physicians

Henry Weil, MD
Assistant Dean for Education
at Bassett Healthcare Columbia University


 ACE

Background: A blank slate...


- Bassett Healthcare Network had Columbia students rotating since 1932, and various residencies
- The track campus idea gave us the opportunity to think about a 2.5 year experience
- How would our strengths be put to best use in terms of societal needs?

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Motive: Healthcare Networks




- Physician CEO and board chairman
- 300 docs, 150 Advanced Care Practitioners
 - All salaried
- 700,000 visits
- Strong quality metrics



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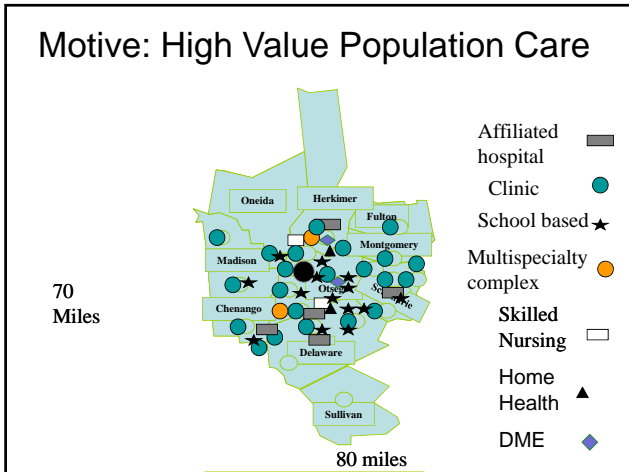
 ACE

Motive: Bassett Service Area



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Purpose: A Bassett faculty retreat

- Collective thinking on strengths
 - Columbia P & S roots
 - Emphasis on relationships/quality
 - A model system of care
 - A seasoned faculty
 - Arts in our community
- How to deploy strengths
 - Mission

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Purpose: C-B Mission


To graduate socially responsible physicians who place relationships at the center of care, and possess superb clinical skills – physicians who use integrated systems to deliver optimal care and service to patients in their community

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Purpose: C-B Mission



- To attempt training of a modern physician
- An LCME medical school track
- Two-threaded longitudinal integrated curriculum
- Course objectives of Columbia, plus...
- Systems/leadership/integration/management
- Standardized curriculum/evaluation
- Electronic Portfolios for centering
- Arts participation


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Purpose: Recruitment/numbers/time



- Direct application to a 4 year experience
- Merit-based scholarships comparable to Columbia need-based scholarships
- 10 students/year
- Orientation week in Cooperstown
- 18 months in NYC
- 2.5 years LIC, based at Bassett Healthcare Network, with periodic returns to NYC

 
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Status of Columbia-Bassett


- Major components piloted with Albany Medical College
- Have admitted one class
- Now in NYC for 18 months

 
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A Few Products

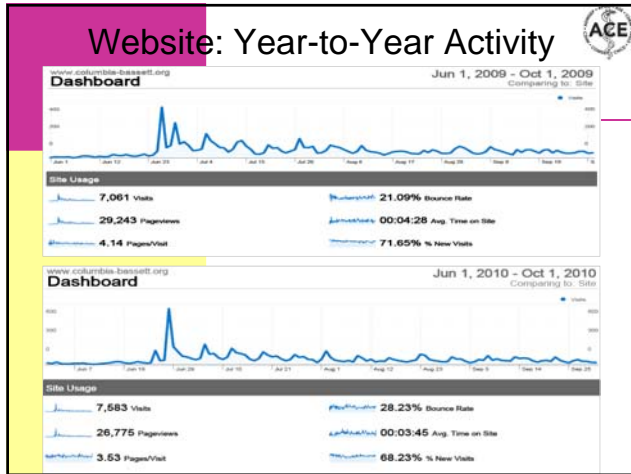
 
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Product 1: Recruitment

- Direct Admissions
 - Tried to promote opportunity for students to explore relationships (LIC) and learn health delivery management (also longitudinal)
 - Expectations
 - Results

 
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Product 2: Curriculum over 4 years

	July	August	September	October	November	December	January	February	March	April	May	June		
YEAR 1	Summer		Columbia Curriculum in New York City (NYC) including Introduction to Clinical Medicine											
YEAR 2	Summer research opportunities at Bassett or elsewhere		Columbia Curriculum in New York City (NYC)				1-Week Orientation to Major Clinical Year (MCT)	Bassett In-Patient Blocks 12 weeks, 6 Blocks • Med ... 3 weeks • Surg ... 3 weeks • OB ... 2 weeks • Psych ... 2 weeks • Peds ... 1 week • Neur ... 1 week		Systems I (Diatrics) Thesis Week	Begin Longitudinal Block 40 weeks			
YEAR 3	Longitudinal Block 40 weeks • Clinics in Medicine, Surgery, OB, Pediatrics, Psychiatry, ED, & various subspecialties • Follow up of patients in longitudinal panels • Mechanisms & Practice • Systems II: SLIM scholarly project initiation (2-weeks) • Bassett Functional Teams meetings • Bassett Functional Teams Project Team • SLIM lunches & journal club meetings						Boards Part I		Primary Care Block in Regional Clinic 4 weeks		End MCT Evaluation (Final 15 min) - 1 week	Internal Med SUB-I 4 weeks at Columbia	Surgery SUB-I 4 weeks at Columbia	ICU/SUB-I 4 weeks
YEAR 4	Elective Block With one 4-week elective at Columbia								Systems III 8 weeks • SLIM clinical immersion • SLIM Thesis • Humanities project		Commencement			

Product 3: Standardized Curriculum

- Mission
- Evaluation
- Evaluator
- Cross-referenced course objectives

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Columbia Bassett Program Curriculum


Resident: Pediatrics

Mission Statement: Students will emerge from their major clinical year with a thorough understanding of the context and delivery of general pediatric medical care in the community setting. They will appreciate the strengths and limitations of the regionalization of subspecialty care in the modern healthcare system, and begin to apply their knowledge to specific clinical scenarios involving the pediatric patient population.

Evaluation System: 75% Clinical Assessment using RIME; 20% Shelf examination; 5% Physical Examination "Mini-Cex"


Accountable Evaluator: Dr. Philip Heavner

RIME	Learning Objectives	Experience	Deliverable	Assessment	SWO	Bassett Objectives
R	Assess a healthy newborn by reviewing the delivery record, examining the baby, and understanding the standard orders set for admission to the Birthing Center	Birthing Center	Oral presentation of the newborn's history and physical in a standard format	Inpatient Preceptor	2.3	II
R	Attend a scheduled or urgent / emergent cesarean section and appreciate the clinical indication for the method of delivery and the immediate resuscitation strategy for the baby	Operating Room and Birthing Center	Oral description of the experience and outcome of the delivery	Inpatient Preceptor	2.3	II

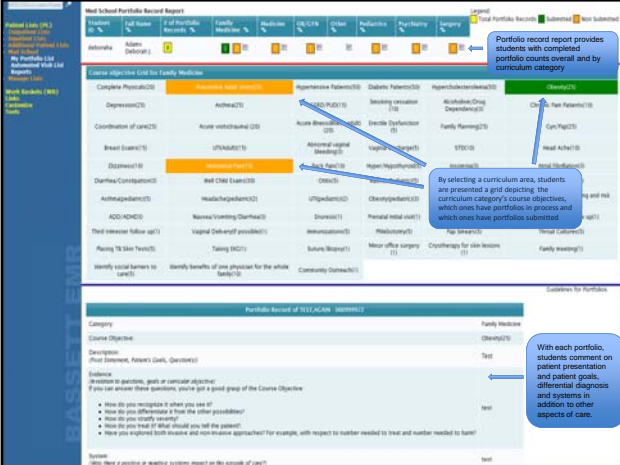


Product 4: E-Portfolios

- EMR-based teaching tool
- Uses and records the course objectives
- Guides learning
- Tracks progress
- Same day feedback




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Portfolio record report provides students with completed portfolio counts overall and by curriculum category


By selecting a curriculum area, students are presented a grid depicting the curriculum category's course objectives, which lists those portfolios in progress and which ones have portfolios submitted

With each portfolio, students comment on patient presentation and patient goals, differential diagnosis and systems in addition to other aspects of care.



Product 5: SLIM

- Stands for Systems, Leadership, Integration and Management
- Physicians are de facto managers of the largest industry in the world (\$2.3 trillion, 90% spent by physicians)
- Virtually no management training!
- Few physicians understand transition to more integrated environments, but greater integration will depend on physician agreement, participation and leadership



COLUMBIA-BASSETT PROGRAM

Four Year Longitudinal SLIM Curriculum

	July	August	September	October	November	December	January	February	March	April	May	June
YEAR 1		Orientation										
YEAR 2		Summer Break Population Research in Cooperstown					PI Training by CSE, CPH, BF	Rapid Inpatient Rotations				
		Research Opportunities at Bassett or Elsewhere					Begin Attending Functional Team Meetings		Systems I Didactics Therapy Week		Begin Longitudinal Block	
YEAR 3		Longitudinal Block 40 weeks						Longitudinal Block (cont.)	Primary Care Block in Regional Clinic 4 weeks			
		• Begin PI Projects • Attend Quality Management Council • Attend Functional Team • All Root Cause Analyses • All Ethics Committee Meetings • Intension: Visit to other Group Employed Models										
YEAR 4										Systems III 8 weeks SLIM Thesis		

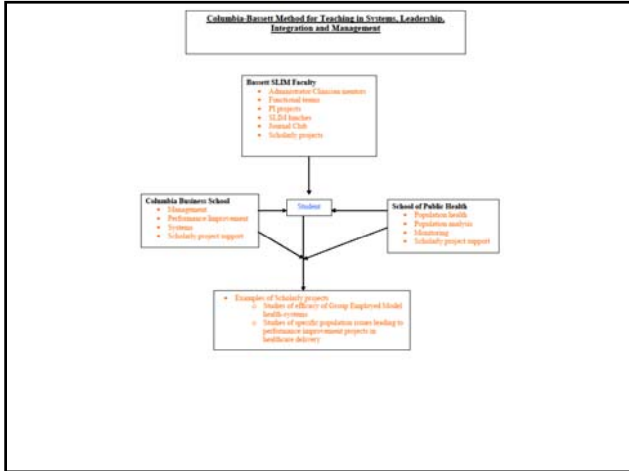
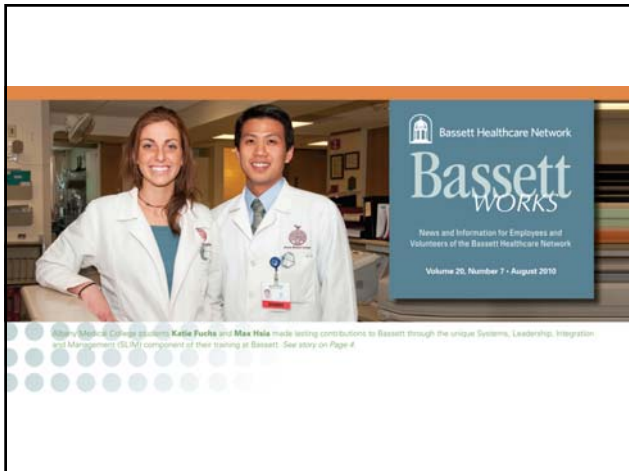



Table 1
SLIM Competencies, Activities and Assessment


RIME Designation	Competency	Activity	Assessment
R	To understand the structure of current healthcare systems	Columbia Business School and Public Health School Didactics	None
I	To recognize the forces shaping the current	Conversations with Major stakeholders	None
M	To develop and manage standardized processes of care aimed at improving the health of individuals and populations	Functional Team projects Population research projects Business/Public Health didactics	Functional Team preceptor Project team 360° review Research practicum and thesis
ME	To use problem solving methods to continuously improve clinical, operational and financial performance in a healthcare micro system	Functional Team projects Population research projects Group discussions in PI Business/Public Health didactics	PI practicum 360° evaluation of listed activities
ME	To motivate and empower patients to be actively engaged as partners in using the health care system to maintain and to improve their own health	Clinic activities with longitudinal patients Business school lectures Public Health didactics	Evaluations by patients
ME	To work effectively in integrated, team-based healthcare systems	Clinic-based rotations Functional Team membership	360° evaluation by teams 360° Functional Team evaluations
ME	To be critical users of evidence-based healthcare information	EBM conference Clinic-based rotations	EBM conference presentation and participation Clinic portfolios Clinic preceptor evaluations Evaluations by patients






Evaluation

- Surveys
- Ethnographic study




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Summary

- Columbia-Bassett had advantages in creating curriculum from a blank slate rather than emulating existing curriculum
- The LIC has worked well in this rural group employed model hospital, a different environment from Cambridge Hospital or UCSF
- Learning health care delivery management and performance improvement is highly attractive to applicants and those taking the course now




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Finally, thank you...

- To Barbara Ogur and David Hirsch of HMS: Pioneers in creating and evaluating integrated longitudinal curriculum
- References




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Student Perspective

Kathryn Boling , MSIV
George Washington University



Discussion
