

Developing an EBP Curriculum: Opening steps

1. Decide what you want (researcher or practitioner?)
2. Create learning objectives
3. Re-structure what you already have
4. Integrate with the rest of the curriculum
5. Train the faculty
6. Check on how you are doing
7. Make it better

1. Practitioner or Researcher?

One of the earliest decisions is whether the goal of the EBP program is to train students into potentially may *do* research or practitioners to *utilize* clinical research. If the latter, then the emphasis and view point of teaching even much of the same material can be very different. If the emphasis is on training users of the research, than classical research methodology courses need to be re-focused (and re-named). Research methodology text books give way to EBM texts and clinicians need to play a significant role in teaching and helping to shape the curriculum. Researchers who may currently be primary course instructors may need to steep themselves in the EBM literature which is typically written from a practitioner's view point.

2. Creating Standards and Learning Objectives

UWS EBP Standards

The EBP competent practitioner

- ▣ can present an overview of EBP.
- ▣ can translate an issue of clinical uncertainty into an answerable question.
- ▣ can efficiently and effectively search for and retrieve useful and up-to-date healthcare information and evidence.
- ▣ critically appraises the evidence for validity and clinical importance.
- ▣ applies the relevant evidence to practice.
- ▣ engages in self-evaluation of his/her process for accessing, appraising and incorporating new evidence into practice.

Palmer University Learning Objectives

- ▣ Explain the role of EBCP in chiropractic practice and education.
- ▣ Ask a focused clinical question based on the PICO model.
- ▣ Conduct an effective evidence-based literature search.
- ▣ Utilize electronic information sources including various search engines.
- ▣ Critically appraise a clinical study.
- ▣ Synthesize and interpret the evidence.
- ▣ Apply the evidence to the management of a patient case.

Northwestern Health Sciences University EIP Competencies

1. Define Evidenced-Informed Practice (EIP) and discuss its importance in health delivery
2. Describe fundamental principles of research
3. Describe non-research forms of health care evidence and information
4. Critically appraise different forms of evidence
5. Discuss the importance of research in one's discipline and its current status
6. Efficiently find evidence-informed answers to specific questions
7. Effectively apply relevant research evidence in practice in conjunction with patient preference and clinical expertise
8. Effectively use EIP to communicate with patients, other healthcare providers, third-party payers and others
9. Effectively participate in research in one's field.

8 Benchmarks of the Successful EBP Graduate

1. Be able to find, assess the quality, and build a set of pre-appraised lit sources (including push services) for their own use.
2. Be able to conduct a search in PUBMED (using multiple search terms and limiters)
3. Be able to read and understand the language of therapy outcomes (e.g., RR, OR, NNT, etc.) and diagnostic studies (e.g., LRs, sensitivity, specificity).
4. Know how to judge at a very rudimentary level if study results are precise, statistically, and clinically significant.
5. Be able to do a quick simple assessment of the quality of a therapy study (e.g., using the ABCDFIX mnemonic) and a diagnostic study.
6. Know how to use tests and pre-test probability estimates to guessimate the probability of a patient having a condition.
7. Know what to consider when applying research results to patient care (i.e., generalizability issues, patient preferences/values, clinical experience)
8. Know what makes for a good systemic review and a good guideline and when a clinical prediction rule is ripe for use.

The graduate must be able to do the following:

- ▣ ASK a searchable clinical question,
- ▣ ACQUIRE/ACCESS the best evidence available,
- ▣ APPRAISE the quality and applicability of that evidence,
- ▣ APPLY the evidence into the care being offered.
- ▣ Self ASSESS (based on the Sicily conference, Dawes 2005).

Satisfy CCE Meta-competencies

Meta-competency 2: Management Plans

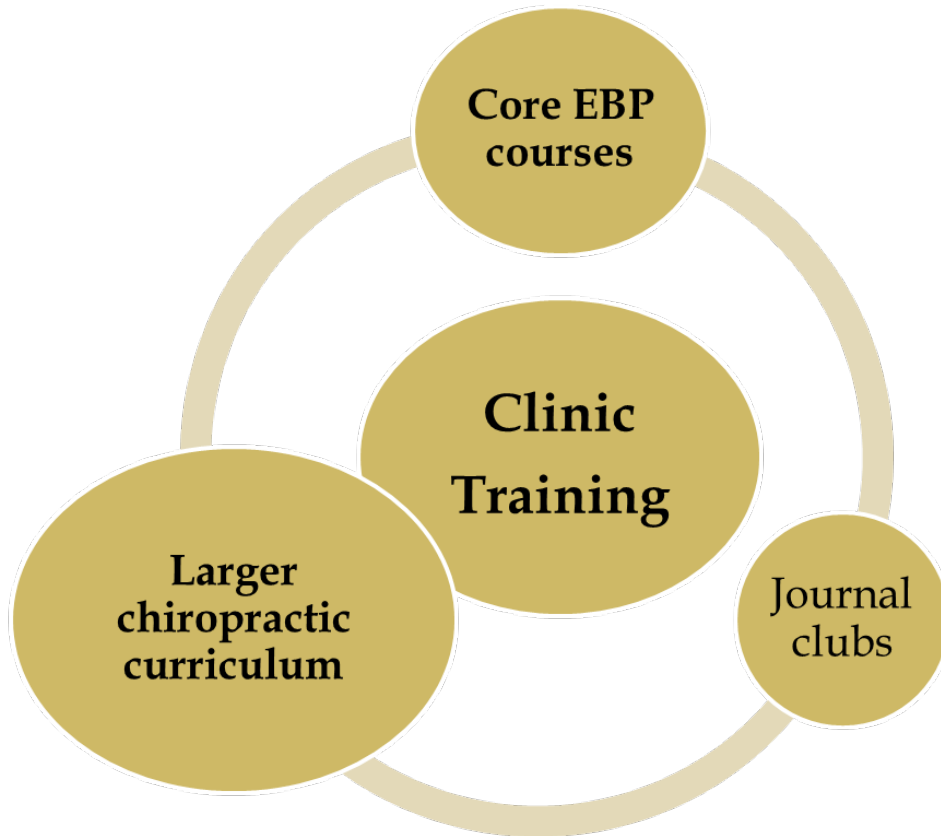
Formulation and documentation of an evidenced-informed management plan...

Meta-competency 6: Information and Technology Literacy

Critical appraisal of scientific literature and other information resources.

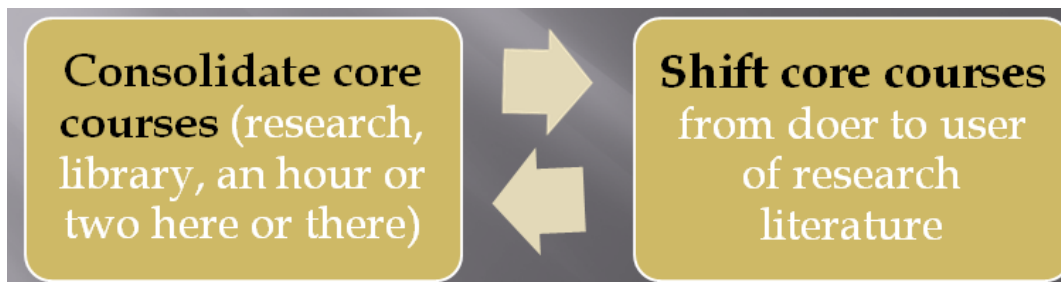
3. Create a Curricular Set of Core Courses

The Big Picture

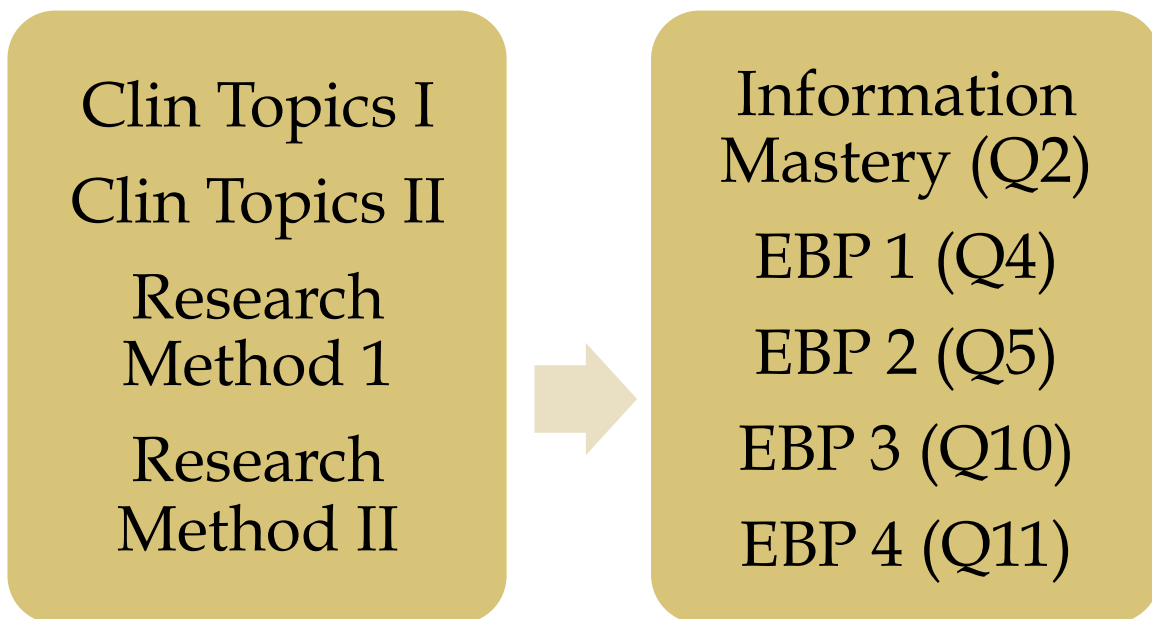


All pre-clinic courses essentially are designed to support the clinical training experience—which is at the center of any EBP curriculum. However, let's us start with the core courses which serve as a backbone of training.

1. Re-structure what research and information lit/library courses already in place.
2. Consolidate core courses (research, library, an hour or two here or there)
3. Shift core courses from doer to user of research literature



UWS sample:



4. Integrate EBP into the Rest of the Chiropractic Curriculum

Multiple Approaches To Promote Integration

- ▣ Train faculty throughout the greater curriculum and let nature take its course
- ▣ Mentor them for a specific course
- ▣ Offer them a completed lesson or guest presentation

Available EBP Mentors for Non EBP Courses (6/10/13)


The following are instructors who do not teach EBP courses but have incorporate assignments in to their disciplines that require students to utilize EBP skills. You are welcome to contact them to discuss how they did this, what the assignment is, and issues or problems involved in implementation.

Course	Assignment/Focus	Faculty	College	Contact Information
Microbiology/Public Health	Lit search, HARM studies, odds ratios.	Kara Burnham	UWS	kburnham@uws.edu
Nutrition	Lit search, study types	Jim Gerber	UWS	jgerber@uws
Genetics	Presentation on prevalence and post-test probability	Mark Kaminski	UWS	mkaminski@uws.edu
Clinical Diagnosis and Therapy	Lit search, CAT assignment	Ron LeFebvre	UWS	rlefebvre@uws

Librarians

It is advantageous to have members of your library staff on any EBP curricular planning team. They can aid instructors throughout the curriculum by advising or offering short presentations on data cases and literature searching skills specific and relevant to a particular course. This is most relevant if it is tied to an assignment that is given for the course.

It is very helpful to arrange for additional training of the librarians specifically in the realm of EBP/EBM. One such program from Dartmouth is now based in Calgary Canada. Campus-based in-services run by your own institutions content experts or guest presenters can also be helpful.



Supporting Clinical Care:
An Institute in Evidence-Based Practice for Medical Librarians


Home Registration Schedule Faculty Directions Materials Contact Us Local Info

2012 Institute - Registration

Tuition Fee: \$850.00
[Please note: Upon receipt of registration form and payment, a confirmation letter will be emailed to the address listed on the form.]

This fee includes:

- All meals and breaks [Monday dinner - Thursday lunch]
- Four nights accommodations in an air-conditioned single room in a Dartmouth College residence hall [Monday-Thursday]
- Course Materials



Cancellation Policy
There is a \$250 administrative fee for all cancellations received by July 13, 2012. No refunds will be made thereafter. Notice of cancellation must be in writing.

Computers
Participants are strongly recommended to bring a laptop computer with wireless internet capability.

Questions?
Inquiries should be directed to Karen Odató (603) 650-8562, or by email Karen.Odato@dartmouth.edu.

Survey Faculty

Survey faculty at large to track the depth and degree of integration that is achieved over time. A sample survey form is included in these conference notes.

Results of UWS EBP Faculty Integration Survey

Outcome	Results
EBP training had a positive effect on faculty teaching	17/24 (71%)
Faculty who give a course-related lit search assignments	13/28 (46%)

Similarly Palmer estimates that about 19/50 surveyed instructors (38%) required some sort of EBP related assignment.

4 Levels of Integration

There are several ways that EBP concepts and skills can be integrated in other courses (e.g, diagnosis, technique, basic science courses).

1) Search skills (info lit)

Courses can assign students to do a literature search on a topic or question specific to the content of the course. The assignment then can play two roles—it can deepen the understanding of that particular topic and can be used as vehicle to practice search skills, experiment with search terms, data bases and limiters.

2) Analytical skills (CATs)

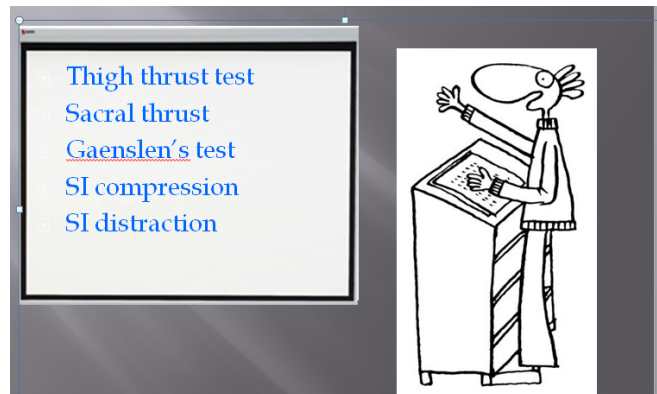
Assignments can also include an expectation that students comment of the quality of the evidence in addition to simply conveying the content. If the search is on a treatment for headaches, students could be expected to comment on the type of studies the recommendations are based on and perhaps useful information about the strength of the evidence supporting the recommendations. A synopsis of research on a clinical question is often referred to as critically assessed topic or CAT.

3) Integration of concepts and terms into lectures. The example on the next page shows EBP concepts relating to diagnosis can be integrated into a lecture on low back pain.

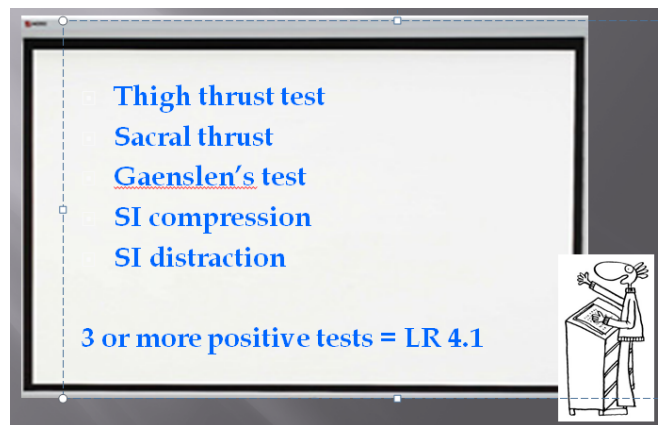
4) Modeling in class. Faculty in real time can model doing a rapid lit search to a clinical question posed by a student or as part of a prepared lecture. Modeling how a clinical instructor would use research evidence in practice, weighing its quality and the needs of the patient can also be done at key points within a course.

An example of Integration of concepts and terms into lectures.

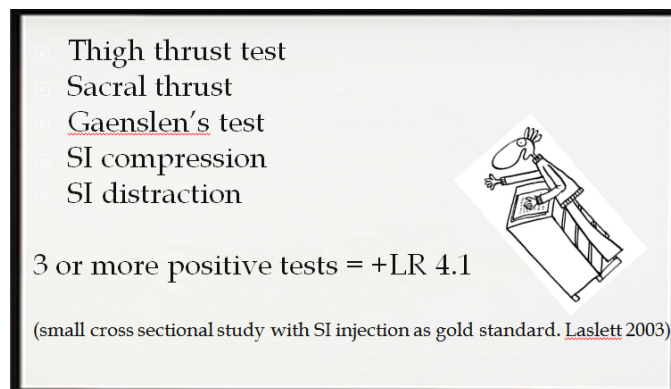
Recommended orthopedic tests for SI lesions



Typical power point slide: Clinical information only.



Improved slide includes test "accuracy" in the form of LR.



Slide includes test "accuracy" and cites quality of evidence = a complete EBP "sandwich."

Mapping and coordinating

When EBP related assignments (such as literature searches or complete CATs are assigned throughout the regular curriculum, a committee or some entity should monitor, map and coordinate them so that consistent skill building and re-enforcement occurs in a planned fashion. That is to say, assignments in various courses could have targeted EBP skills that complement and build upon each other.

UWS Sample of Tracking Lit Search & CAT assignments

Quarter	Course	Assignment	When
1	Phil & Prin 1	Search	Wk 4-5
2	Clin Topics I	Moodle, CAT	Wk 2 & 8
3	Gross Anat III	Search/work sheet	Wk 6
	Phil & Prin III	Lecture	N/A
4	Clin Topics II	CAT, library lecture	Wk 6
	EBP I	Access Pre-Appraised, Primary Study	Wk 4 & 7
	Microbiology	Intro to CAT, Pub Med	Wk 6
	Pathology	Lit search and a paper	
5	Clin Micro	CAT	Wk 8
	EBP II	Search/Analyze	Wk 2 & 4
	Prin IV	CAT	
	Nutrition	Search/Critique 3 articles RCT/observe study/system review	Wk 2
6	NMS I	Lit search & paper	Wk 9
	PT II	Lit search and paper	
7	Clin Phase I	Clin question/CAT	Wk 3-9
	Clin Phase 1 lab	Search Cochrane library	
8	Clin Phase II	CAT/Clin question	Wk 3-9
	Clin Phase 1 lab	Search Sports Discus	
8/9	Clin Nutr/Bot I&II	4 research assignment using database	
9	Clin Phase III	Answer to question using pre-appraised sources (TRIP/Dynamed)	Wk 4-7
10/11	Prin & Phil V	Critically review 3 papers, journal club format	

Here is a sample of map that breaks down literature assignments into individual micro-skills and tracks them by course.

Posing a Question

Courses	PICO review	Students pose a PICO question	Search term review	Assess question
Phil & Prin 1	no	no	yes	no
Clin Topics I	yes	yes	no	yes
Gross Anat III	no	no	yes	no
Phil & Prin III	no	no	no	no
Clin Topics II	yes	yes	no	yes
EBP I	yes	yes	no	no
Microbiology	yes	yes	yes	no
Pathology I	no	no	no	no
Clin Micro/Public Health	no	yes	no	no
EBP II	no	no	yes	no
Prin IV	no	no	yes	no
Nutrition	no	no	no	no
NMS I	no	no	yes	no
Clin Phase I	brief	yes	no	yes
EBP III & EBP IV	yes/no	yes		yes/no

Faculty Training

Developing Different Levels of Expertise

- ▣ **Content experts** (for EBP courses and as curriculum consultants). These individuals need to acquire special expertise in the teaching and learning of EBP. They will typically teach the core EBP courses and are critical players in developing the rest of the curriculum, especially as it is integrate into other courses.
- ▣ **Clinical experts.** These are the clinical supervisors directing care in the clinics. Although not all will attain the same level of exercise, they need to be comfortable enough to direct interns to do lit searches, at least to a preliminary assessment of the quality of the evidence and decide whether there should be an impact on patient care. They need not be as expert as the core instructors, but over the years, should be conformable in modeling these behaviors relative to the large array of questions that normally arise in patient care. NOTE: Ultimately for nay EBP program to be successfully, these behaviors must be encouraged and supervised in the clinic setting during actual patient care.
- ▣ **Skilled classroom faculty.** Depending on their discipline, these faculty may not need to acquire the same level of expertise as EBP instructors or clinicians. But they should be comfortable enough to 1) incorporate EBP content and terminology into their regular teaching and to assign literature searches (if appropriate) to their students and 2) to use rudimentary EBP skills to filter what clinical research evidence they wish to include in their courses and how to characterize the quality of these recommendations to their students.

Intensive Training Programs

If feasible, create content experts and enhance training of clinicians by sending them to intense EBP/EBM training programs:

- Oxford,
- McMaster's,
- Duke,
- Tufts

Cost of Intensive EBM Courses

	A	B	C	D	E	F	G	H	I	J	K	
1	Oxford Workshop in Teaching EBP			TUFT Information Mastery		Duke - Teaching & Leading EBM		McMaster - How to Teach EBP				
2	September 3-7, 2012			November 2012		March 2013 (4 days/Spring break)		June 2013				
3	UK		US									
4	Airfare:		\$1,300.00	Airfare:		\$ 600.00	Airfare:		\$ 700.00	Airfare:		\$ 650.00
5	Car Rental:		\$ 150.00	Car Rental:		\$ 50.00	Car Rental:		\$ 200.00	Car Rental:		\$ 200.00
6	Lodging:		£ 525.00 \$ 859.08	Lodging:		\$ 1,250.00	Lodging:		\$1,070.00	Lodging:		\$ 600.00
7	Meals:		£ 450.00 \$ 736.29	Meals:		\$ 150.00	Meals:		\$ 350.00	Meals:		\$ 200.00
8	Registration:		£1,200.00 \$1,963.77	Registration:		\$ 990.00	Registration:		\$1,980.00	Registration:		\$2,800.00
9												
10	Total Estimate:		\$5,009.14	Total Estimate:		\$ 3,040.00	Total Estimate:		\$4,300.00	Total Estimate:		\$4,450.00

Home-Based Training Programs

Strategy 1: Formally train all of faculty in EBP skills. UWS followed this strategy, delivering several rounds of workshops to nearly all full time faculty and clinicians. Those with special interest or “opinion makers” and planners also received more intense exposure and training (e.g., at McMaster’s or Oxford programs).

UWS Training Program (spread over 7 years)

General classroom faculty

- a **20 hour EBP survey course** (earning a certificate of completion)
- a self-paced learning module on **information literacy**
- **additional lectures** on integrating EBP into the classroom
- 4 hands-on workshops on **literature search skills**

Any interested faculty

- **short course on biostatistics** (8 modules).

Clinicians

- 7 one-hour **journal club** meetings (spread over one year)
- 7 two-hour **workshops on EBP** (spread over two years)

New Faculty

- 7 one-hour Module based **Information Mastery**
- 10 2-hour **EBP modules**

Strategy 2: Initially train select faculty in EBP skills. This strategy was employed by most of the other institutions who received NIH R-25 grants. Individual opinion makers or targeted individuals with a declared interest received the first round of training. They, in turn, stimulated interest from other faculty and assisted in their training during additional rounds of workshops, creating a snowball effect.

EBP Books

(LeFebvre, Haas, Varek UWS, Taylor NUHS) 2013

Jewell DV. Guide to Evidence-Based Physical Therapist Practice, 2nd Edition. Jones and Bartlett Learning, LLC; 2011.

Dawes M, Davies P, Gray A, Mant J, Seers K, Snowball R. Evidence-Based Practice-A primer for health care professionals, 2nd Edition. Elsevier Churchill Livingstone; 2005.

Haneline MT. Evidence-Based Chiropractic Practice. Sudbury MA: Jones and Bartlett Publishers; 2007.

Straus SE, Glasziou P, Richardson WS, Haynes RB. Evidence-Based Medicine-How to practice and teach it, 4th Edition. Churchill Livingstone Elsevier; 2011.

Users' Guides To The Medical Literature-A manual for evidence-based clinical practice. Ed. Guyatt G, Rennie, D. JAMA & Archives Journals, American Medical Association; 2008.

Vickers, A. What Is a P-value Anyway? 34 Short Stories To Help You Actually Understand Statistics. Pearson Education, Inc; 2010.

Zilberberg M. Between the lines: Finding Truth in medical literature. EviMed Research Press. Goshen MA 2012.

Epidemiology

Fletcher RH, Fletcher SW. Clinical Epidemiology: The Essentials, 4th edition. Lippincott, 2005.

Gordis, L. Epidemiology, 4th Edition. Saunders Elsevier; 2009.

Some Evidence-Based Websites

Evidence-Based Medicine Librarian <http://emlibrarian.wetpaint.com/>

Netting the Evidence A SchARR Introduction to Evidence Based Practice on the Internet
<http://www.med.unr.edu/medlib/netting.html>

Centre for Evidence-Based Medicine (CEBM) in Oxford www.cebm.net

Centre for Evidence-Based Medicine (CEBM) in Toronto <http://www.cebm.utoronto.ca/syllabi/>

Introduction to Evidence-Based Practice (Duke U. Medical Center Library & UNC-Chapel Hill Health Sciences Library) Tutorial: <http://guides.mclibrary.duke.edu/ebmtutorial>

National University of Health Sciences <http://www.nuhs.edu/research/evidence-based-practice/> (a good list of teaching material)

Palmer has a good list of resources and websites <http://www.palmer.edu/EBCPResources/>

UWS has some useful teaching material posted
http://www.uws.edu/Research/Evidence_Based_Practice_Resources.aspx

Incentives

Faculty are very busy and identifying effective incentives is helpful even if the training is “required.”

Active incentives (which ones can you muster?)

- ▣ The Administrative bully pulpit
- ▣ P&E (job assessment for promotion)
- ▣ CE hours
- ▣ Certificate of completion

Passive incentives (if a critical mass can be achieved)

- ▣ Peer pressure (as more faculty get on board)
- ▣ Student pressure (as students become trained and expect similar knowledge in their instructors and clinical supervisors)

Strategic Tips

- Take the long view (plan over 2-4 year cycles)
- Train in many small bites (workshops once a month or once a term)
- Use active learning strategies (not just passive lecture)

Create Faculty Teaching Tools for Re-enforcement & Review

Create learning tools accessible to both faculty and students. Create some faculty versions that include teaching tips. The following are tools accessible for the UWS community

- ▣ Information Literacy Moodle
- ▣ EBP Bootcamp*
- ▣ CAT Guide*
- ▣ EBP Cue Cards*

*Available at UWS website <http://www.uws.edu>. Located in the Research Tab, in the EBP Resources folder.