Developing a Curriculum

From Local Institution to National Implementation

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Disclosures

- UIowa GME Innovation Grant
- Co-investigator SAU Educational Grant

Instructional Design

- Instructional design is like building a house…

General Steps to Design

- Needs assessment
- Define learning objectives
- Develop assessments
- Instructional strategies
- Content & sequencing
- Implementation
- Evaluation and revision

- Multiple frameworks
  - ADDIE
  - Backwards design
  - Kemp model
  - Dick and Carey model

Why Do You Need a House?

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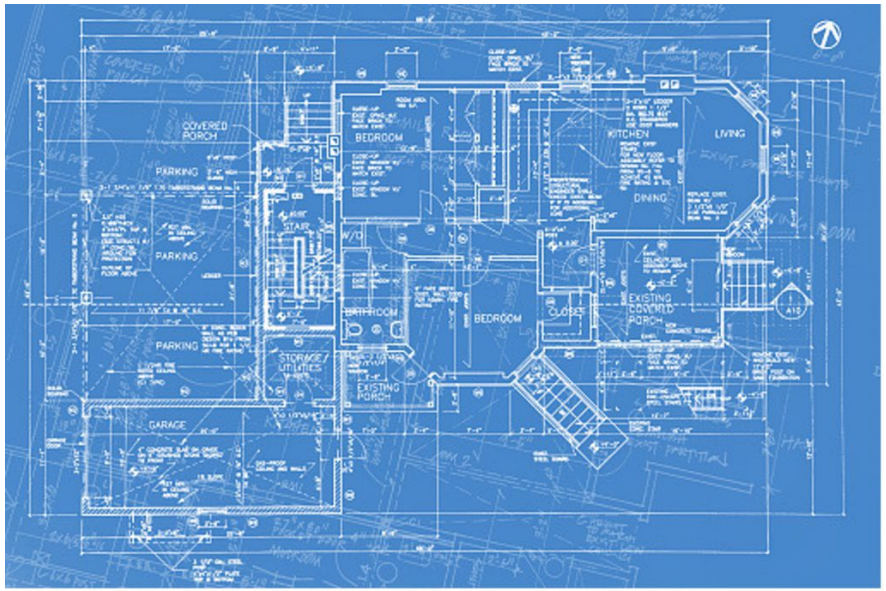

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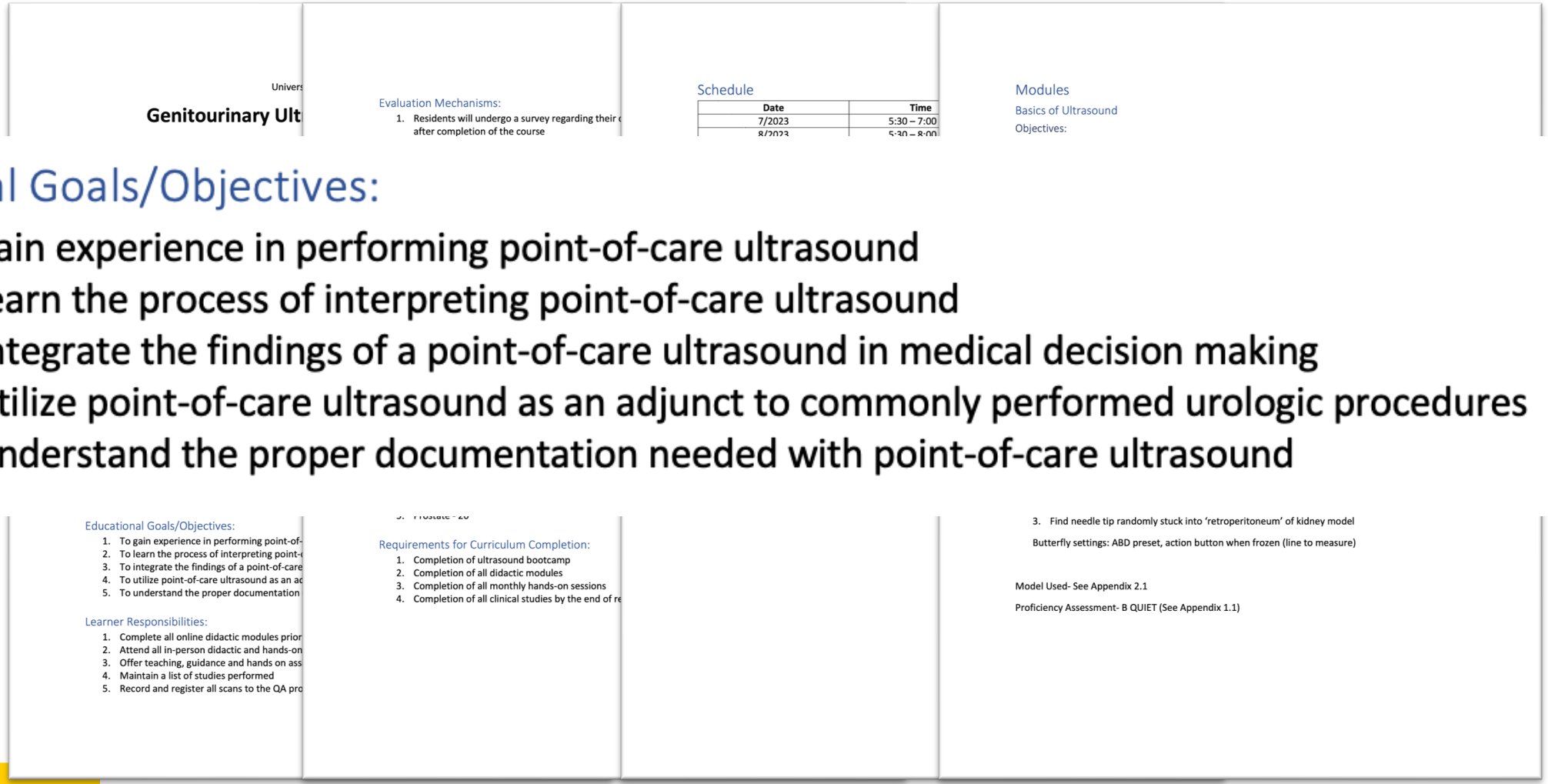
Define Learning Objectives

- Sets the tone for all other work
- Think in layers
  - Overarching and topic/module specific?
  - Really depends on your target audience
- Make a document to detail these specifics!

POCUS Curriculum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Evaluation Mechanisms:
1. Residents will undergo a survey regarding their
after completion of the course

Schedule

Date	Time
7/2023	5:30 – 7:00
8/2023	5:30 – 8:00

Modules
Basics of Ultrasound
Objectives:

Educational Goals/Objectives:
1. To gain experience in performing point-of-
2. To learn the process of interpreting point-
3. To integrate the findings of a point-of-care
4. To utilize point-of-care ultrasound as an ad
5. To understand the proper documentation

Learner Responsibilities:
1. Complete all online didactic modules prior
2. Attend all in-person didactic and hands-on
3. Offer teaching, guidance and hands on ass
4. Maintain a list of studies performed
5. Record and register all scans to the QA pro

Requirements for Curriculum Completion:
1. Completion of ultrasound bootcamp
2. Completion of all didactic modules
3. Completion of all monthly hands-on sessions
4. Completion of all clinical studies by the end of re

3. Find needle tip randomly stuck into 'retroperitoneum' of kidney model

Butterfly settings: ABD preset, action button when frozen (line to measure)

Model Used- See Appendix 2.1

Proficiency Assessment- B QUIET (See Appendix 1.1)

Educational Goals/Objectives:

1. To gain experience in performing point-of-care ultrasound
2. To learn the process of interpreting point-of-care ultrasound
3. To integrate the findings of a point-of-care ultrasound in medical decision making
4. To utilize point-of-care ultrasound as an adjunct to commonly performed urologic procedures
5. To understand the proper documentation needed with point-of-care ultrasound

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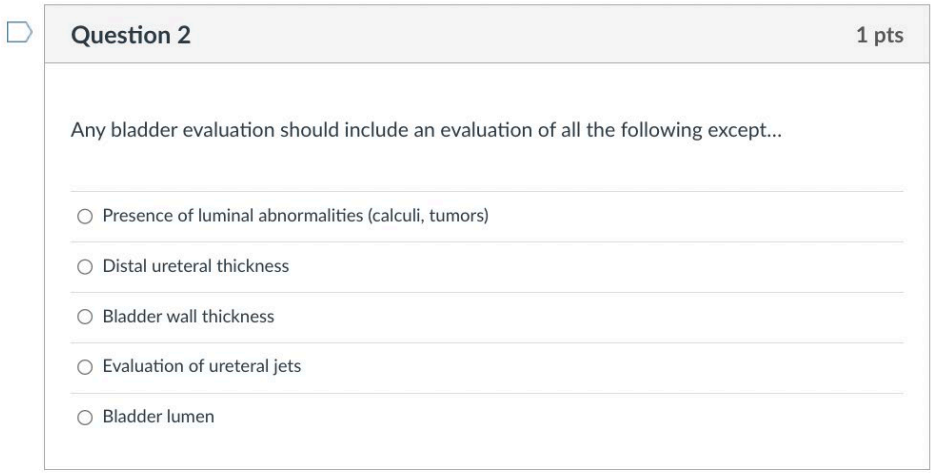
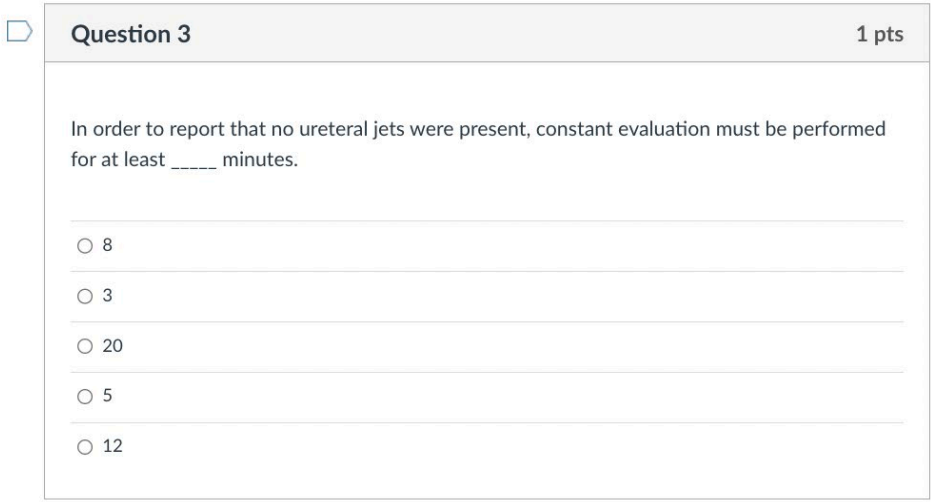
Educational Assessment

- Depends on methodology
- Quantitative
  - Develop quizzes, surveys
  - Assess for existing validated metrics
  - Consider creating your own?
- Qualitative work
  - Hone your interview guide
  - Consider manner for thematic analysis to determine how you need to collect your data
- Make sure it asks what you want to know!





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Instructional Strategies

- Didactic
  - Traditional approach (lecture, Socratic method)
  - Flipped classroom
  - Programmed instruction (small steps, active response, immediate feedback)
    - Duolingo
- Skill
  - Modeling (‘see one, do one, teach one”)
  - Guided Practice (verbal cues)
  - Role Reversal (trainee has to guide faculty verbally)
  - Independent Practice
- Feedback
  - Best when immediate and formative

General Steps to Design

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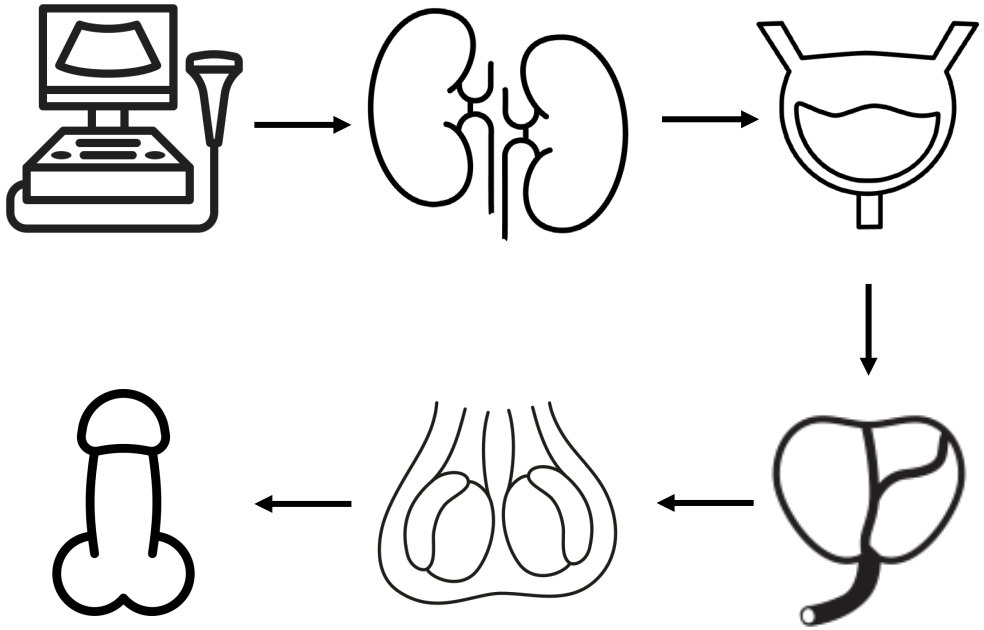
Content and Sequencing

- Make an exhaustive list of what you want to teach
- Divide into digestible pieces
- Remove the excess (editing!)
- Ensure the order builds on complexity/difficulty

Modules



Renal/Ureter

Objectives:

- Describe the optimal position, probe and settings to visualize the kidney
- Describe setting adjustments that may be necessary in obese patients
- Describe the visual features of the diaphragm and ribs
- Visualize the kidney and describe all features as per AIUM specifications
- Place needle under ultrasound guidance into the collecting system in a model

Proficiencies:

- Describe the optimal patient position for the study
- Chose the correct ultrasound probe

	Diagnostic	Interventional
Essential	• Sagittal image with measurement (length) • Assess echogenicity relative to liver/spleen • Measure cortical thickness • Transverse image at superior, mid (with measurement) and inferior pole • Assess for hydronephrosis • Assess for peri-renal abnormalities	• Percutaneous needle placement into lower pole calyx in model
Desirable	• Identify pleura with inspiration over upper pole	• Percutaneous needle into mass/lesion
Optional	• Billing/coding	• Billing/coding

Hands On Skills Task List:

4. Obtain sagittal kidney image
5. Measure kidney length and cortical thickness
6. Obtain transverse image in the mid pole
7. Measure kidney width and depth
8. Measure renal pelvis AP diameter
9. Place needle into lower pole calyx under US guidance

Butterfly settings: ABD preset, action button when frozen (line to measure)

Model Used- See Appendix 2.1

Proficiency Assessment- OSAUS (See Appendix 1.2)

General Steps to Design

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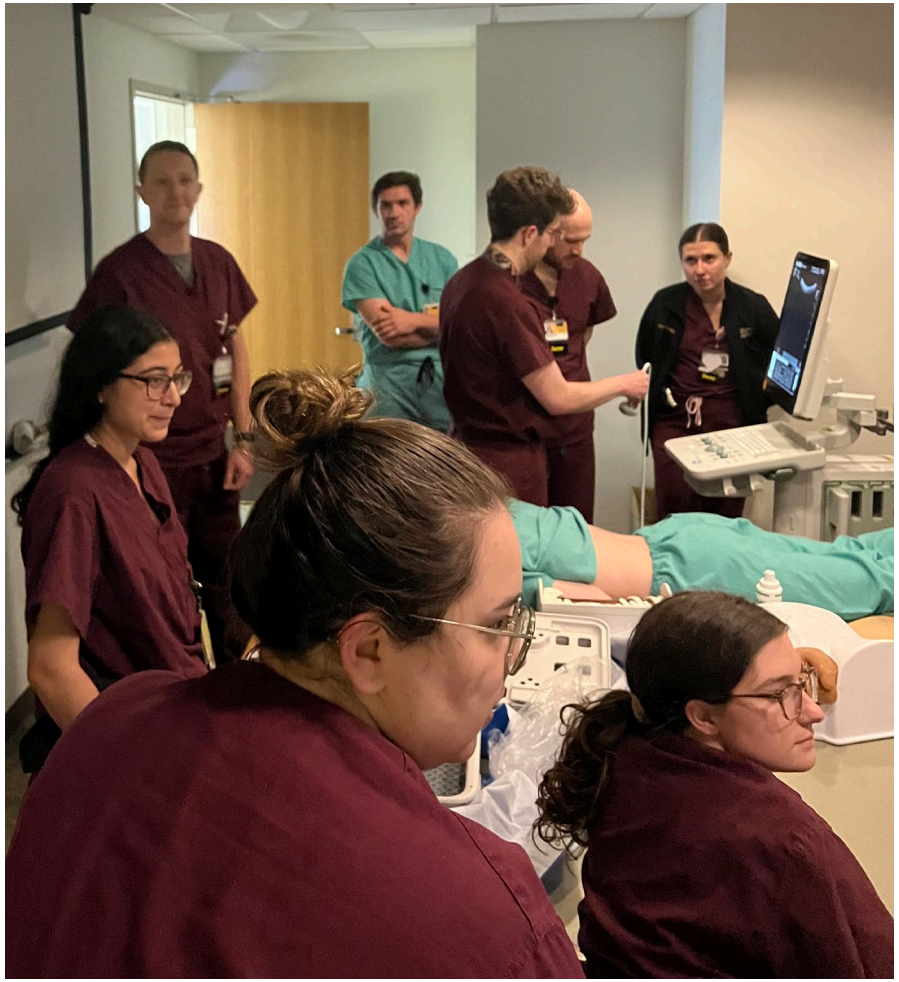
Implementation

- Work with your PD/Chair to find the right time
  - Protected didactic time? Afterhours?
- Set a schedule, send out dates early, and give reminders
- Expect that things will run long the first time through
- Take notes along the way
- Have fun!



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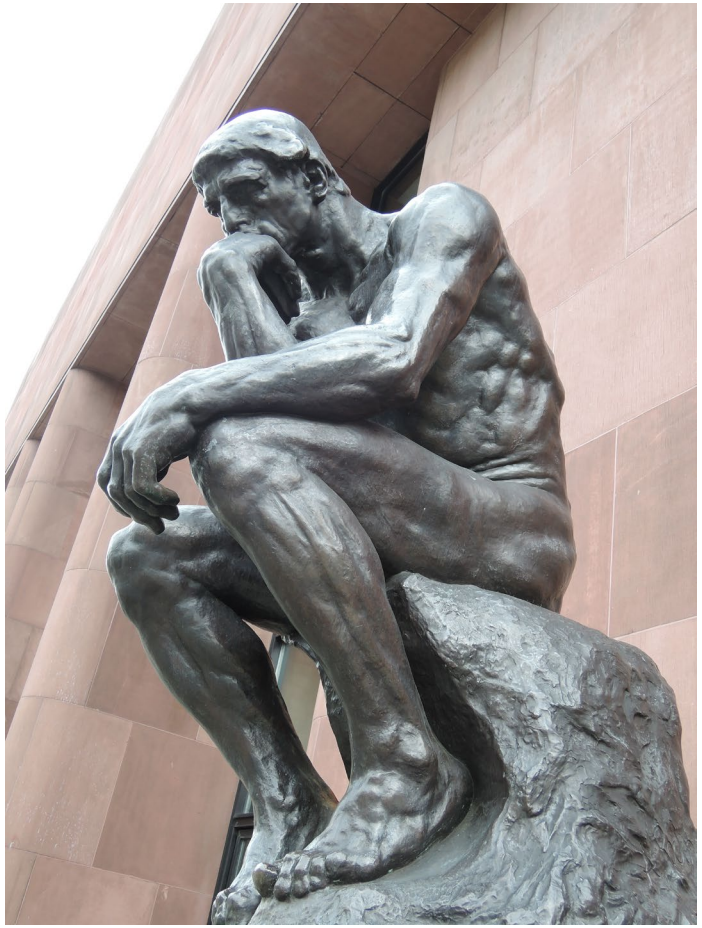
Evaluation and Revision

- What worked and didn't work?
  - Ask participants and other faculty
- When things work:
  - Great!
  - Can it be improved? Next steps?
- When things didn't work:
  - Rats!
  - Consider barriers and why suboptimal
- Iterate!



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Funding

- Ok. This sounds great (I hope).
- But this sounds expensive (time & resources)
- How am I supposed to get this done?

Funding

- Consider your audience and check resources for that audience
  - GME (local or national)
  - SAU (education grant)
  - Regional AUA sections
  - Department/institution
    - Is there a future monetary benefit to your curriculum?
    - Time!
  - Industry (educational grants, especially for equipment)
- Will likely require some combination of the bunch

Should I Include Trainees Beyond Participation?

- Yes, they are a key stakeholder
  - Feedback along the way is important
- Great way to impact future resident classes
  - Must demonstrate a commitment to project
  - Best if they can own a part of the project
- Great opportunity for less ‘hard science’ technical writing and presenting

Promoting the Results

- Social Media
  - ‘Phone Eats First’
- Publications
  - Educational endeavors are often under reported
  - Many journals are education/curriculum friendly (Urol, J Surg Ed, JGME)
  - Creates opportunities for reviews/commentaries
- Presentations/Workshops
  - Local (GME, state)
  - Regional (AUA sectional meetings)
  - National/International (AUA, SAU, subspecialty meetings)

Education

Current Utilization and Perceptions of Form Ultra

Charles H
Ryan L. S

Doi:10.32604/cju.2025.064818
ARTICLE

Current a point-of-

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Elizabeth B. Taka
[1]Department of Urology, Uni
[2]Division of Urology, Beth Is

Current Urology Reports (2026) 27:7
https://doi.org/10.1007/s11934-025-01311-2

REVIEW

Applications of Point of Care Ultrasound in Urology Residency Training: A Practical Framework for Curriculum Design and Implementation

Eric J. Macdonald[1] · Andrew Williams[1] · Ryan L. Steinberg[2] · William Faust[3] · Agustin Perez-Londoño[4] · Ruslan Korets[1]

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Urology Past and Future: Education, History, Workforce

Dedicated Point-of-care Ultrasound Training Leads to Improved Confidence, Knowledge, and Skill Performance Amongst Urology Residents

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  - Utilize local/regio
    - NCS & NEAUA
- National adoptio d organizational buy-in (AUA, SAU)
  - ?Position statem

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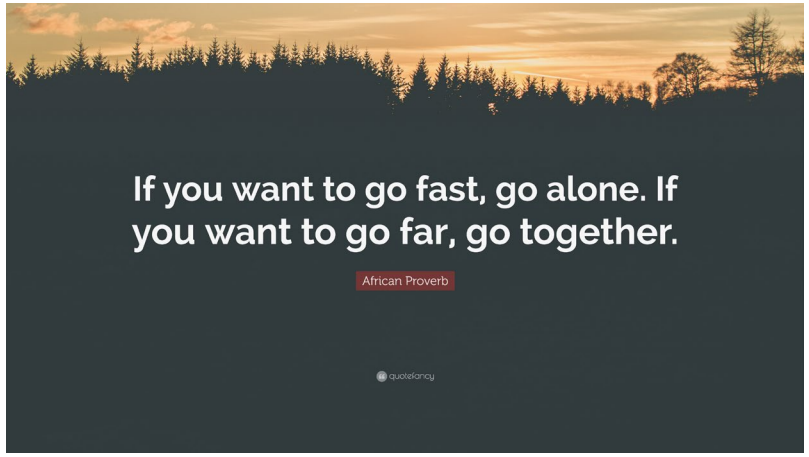
Summary & Recommendations

- Curricular design and development are time consuming but great opportunities for personal and professional development
- Think about the next steps early
- Impact of the output can be exponential (Think big!)
- Find a partner to go far



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Thank you!

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