

Delivery of Microbiology Curriculum in Integrated vs. Hospital Based 3+1 (or 4+1) CLS Programs

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Introductions

- Nathan Rubien: alumnus of URI / RIH Program
 - teaching at UMD since fall 2015
- Frank Scarano: alumnus of Alfred University & Alfred State College (Biology/ MLT), Albany Medical College (MS, PhD)
 - teaching at UMD since fall of 1998
- Theresa Tellier-Castellone: alumna of URI / RIH Program, New England College (MPH)
 - Adjunct / Part-time at UMD since fall of 2012
 - Program Director at RIH & OLF since 2014

Microbiology Curriculum University Based

- **MLS 301/303: Principles of Microbiology & Lab**
 - Lecture: General microbiology, microbial physiology, molecular microbiology, microbial genetics, microbial diversity, taxonomy, introduction to virology
 - Laboratory: basic techniques in bacteriology, conventional identification systems
- **MLS 313/314: Medical Microbiology & Lab**
 - Parasitology
 - Bacteriology (organism based)
 - Mycology
- **MLS 401: Clinical Microbiology I**
 - Block-style "Intensive" (specimen/ infectious site based)
- **MLS 411: Clinical Microbiology II**
 - at hospital sites

Microbiology Curriculum Hospital Based

- Student pools from 3 different institutions:
 - Rhode Island College = 3 + 1
 - Salve Regina University = 4 + 1
 - University of Rhode Island = 3 + 1
- Undergraduate class experiences vary
- Students enter internship with different levels of exposure to clinical topics

Curriculum Advantages University Based

- Three semesters of Microbiology on campus
- Students have sufficient theory to pass the certification exam prior to clinical rotation
- Microbiology clinical rotation can be shorter as compared to hospital based programs

Curriculum Advantages Hospital Based

- Able to build curriculum around laboratory experience
- Work closely with clinical instructors at point sites

Challenges University Based

- 23 different clinical affiliates ranging from small community hospitals to huge teaching and tertiary care facilities.
- Clinical experiences at all affiliates meet minimum objectives but there is so much variability that we can't rely on **all** affiliates to fill in the gaps in theory.

Solutions University Based

- Developed block-style / language immersion-like "intensives" on campus for the fall of the senior year.
- Lectures follow the medical school model with focus on organ system/ infectious site
- University laboratory mocks clinical laboratory including following someone else's work
- Gram Stain Slide Sets

Challenges That Remain University Based

- "Special Micro" topics –
 - Parasitology: Theory and ID from prepared slides covered very well on campus but still great variability in "real" experiences at affiliates
 - AFB & Virology: Theory covered on campus, but great variability in experiences at affiliates
 - Mycology: Theory and ID (briefly) covered on campus, but great variability in experiences at affiliates

Challenges Hospital Based

- Transitioning from Campus Micro Mindset to Clinical Micro mindset BEFORE clinical experience
 - Lecture series set up – Monday lecture day
 - Micro unit may not occur prior to clinical experience
- OR
- Micro unit occurs way BEFORE clinical experience

Solutions Hospital Based

- Created a 3 week intensive over summer (Yay for adjunct position at UMD!)
 - One week of lecture
 - Two weeks of mock cultures correlating to lectures
 - Work up, write full lab report
 - Allowed reduced time for clinical rotation
 - Created team of teachers
 - 4 groups of 3 students – group 4 instructors
 - Consistent teaching
- Front loading of bacteriology prior to clinical experience for all students

Conclusions

- Both programs have been very successful
- Enrollments are excellent
 - UMD senior classes average about 35 students
 - RIH/OLF classes average about 16 students (total)
- BOC first year success rate for both programs is above 90%
- Employment rate or entry to graduate or profession schools is 100% for both programs

Conclusions

- “Intensives” are very helpful in preparing students for clinical experiences at a variety of different affiliates

AND

- getting all students to the same level when they have come from different universities/ colleges with a variety of educational experiences.

Thank you! Questions?

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