

Precis of the Initial Design Phase  
Designing Courses that Promote Significant Learning, *Fink, 2003*

*Immunology, Deb Lebman, Course Director  
Initial meeting 1-21-09*

**Step 1. Give careful consideration to a variety of SITUATIONAL FACTORS**

**• What is the special instructional challenge of this particular course?**

Large class size

Short course length relative to the importance of understanding the role of the immune system in numerous medical conditions

The knowledge in this field changes rapidly and keeping the course up to date with the current information they will be expected to know, while preserving foundational information is a constant challenge.

Material that requires ability to think in systems; complex.

Dr. Lebman has taken over additional lectures nearly every year in order to try to improve the cohesiveness of the course material. She would find it difficult to take on many more. The department likes to have their faculty participate in the course and there are about a dozen lecturers in the course. It is a challenge to have faculty aware of the material presented before and after their lectures.

**• What is expected of the course by students? By the department, the institution, the profession, society at large?**

Students expect to be able to pass the exam with the information presented, to be prepared for the boards.

The department and school want to keep the students happy to some extent.

The department and institution want the students to understand the critical role of immunology in health care.

In general, other audiences probably expect students to have a solid foundation of scientific knowledge and understanding of immunology, an ability to apply this information to new problems, and a foundation to understanding the role of inflammation in various common medical conditions.

**• How does this course fit into the larger curricular context?**

The timing of this course is currently in the last half of the M1 year. In our current curriculum this probably makes sense as this course is really a bridging course to the clinical sciences. The material in this course is applicable to many clinical conditions.

### **Use the “BACKWARD DESIGN” Process**

This process starts at the “end” of the learning process and works “back” toward the beginning. Use information about the Situational Factors (Step 1, above), as you make the following key decisions:

**Step 2. Learning Goals** What do you want students to learn by the end of the course, that will still be with them several years later?

- Think expansively, beyond “understand and remember” kinds of learning.  
*Suggestion: Use the taxonomy of “Significant Learning” (Table 1) as a framework.*

Be able to see a disease and understand the underlying immune mechanisms

To know which diseases have an immunologic component, i.e., result from alterations in immune response (over, under, abnormal)

To know what questions to ask to diagnose immune disorders.

To be able to provide informed and accurate patient education.

To understand the prevalence of immune disorders and the importance of understanding immunology for an aging population

To learn about and understand the impact of these disorders on the patient as a person.

**Step 3. Feedback & Assessment Procedures** What will the students have to do, to demonstrate that they have achieved the learning goals (as identified in Step “A” above)?

- Think about what you can do that will *help students learn*, as well as give you a basis for issuing a course grade. *Suggestion: Consider ideas of “Educative Assessment.”*

This course currently includes two exams (for the course grade) and two, 2 hour small group sessions. Have to think about other ideas for assessment.

**Step 4. Teaching/Learning Activities** What would have to happen *during* the course for students to do well on the Feedback & Assessment activities?

- Think creatively for ways of *involving students* that will support your more expansive learning goals. *Suggestion: Use “Active Learning” activities, especially those related to:*
- **“Rich Learning Experiences”** experiences in which students achieve several kinds of significant learning simultaneously
- **“In-depth Reflective Dialogue”** opportunities for students to think and reflect on *what* they are learning, *how* they are learning, and the *significance* of what they are learning.
- Suggestion: Assemble these activities into an effective *instructional strategy*, i.e., an interdependent sequence of learning activities, and a *coherent course structure*.

This course, while rich in clinical examples in lectures, could be more interactive. The first half of the course contains a lot of basic terminology and information that students need for the second half of the course. It is challenging to teach this basic information effectively and efficiently in a format other than lecture.

The second half of the course might be improved by bringing patients into class that students could talk with, perhaps in small groups. Students might be able to explain the cellular and molecular basis of the disease to the patient, while the patient explains the impact of the disorder on their lives to the students. This would reinforce the basic science information while introducing more patient-centered and humanistic aspects of immunology. It would also add more student interaction to the course. Asthma, autoimmune diseases, (including lupus) muscular dystrophy, and juvenile arthritis are potential diseases that would be useful (in later clinical training as these are relatively common conditions) and rich learning opportunities for the students.

Students currently do not seem to relate this material to patients they see in FCM, although they probably see patients with conditions with an immunologic basis or aspect. Perhaps this could be better connected.

We discussed using POGIL; this has potential use in the second half of the course but Dr. Leberman was unsure if they would understand any diseases well enough to use this at this time in the curriculum.

**Step 5. Make sure that the Key Components are all INTEGRATED**

- Check to ensure that the key components (Steps 1-4) are all consistent with, and support each other.

NOTE: In addition to the above items, I asked course directors a) if they can identify a use for simulation in their course, and 2) how/if they cover epidemiology/population medicine in their course (incidence, demographics, public health impact/cost to society, etc.). Dr Leberman said that the epidemiology/population medicine aspects of immunologic disorders are well covered in the first lecture of the course and that she does not see a way to use simulation in this course.

## M1 Immunology

Proposed change	Fink significant learning components addressed	SOM Curriculum Redesign Key Themes addressed	Resources needed for change	How might this change be evaluated?	Follow up/date
Invite patients to class to share their experiences and the impact of their immunologic disorder on their lives.	This would be a new activity  AP, INT, HD, CARE	1, 3, 5, 7, 8	Patients willing to come to class.  Potentially, small group space		
Invite patients to class to allow students to help review and present the cellular and molecular biology of their condition – practice patient education/teaching.	This would be a new activity  FN, AP, INT, HD, CARE	1, 3, 4, 5, 7, 8	Patients willing to come to class.  Potentially, small group space		
Explore the option of using POGIL for an exercise towards the end of the course.	This would be a new activity  FN, APP, INT, LHTL	1, 2, 3, 4, 5, 6, 7 (knowledge)	Further faculty development in POGIL  Immunology cases developed for use with POGIL		

## **VCU SOM Curriculum Redesign Key Themes**

- 1) Ability to identify, analyze, synthesize, and assess credibility of relevant information
- 2) Be lifelong learners with intellectual curiosity
- 3) Ability to integrate scientific foundations of medicine
- 4) Ability to self-assess learning needs (reflective practice)
- 5) Ability to function in systems and to teach each other (teams)
- 6) Demonstrate competence (outcomes)
- 7) Be active learners
- 8) Emotional intelligence, able to deal with the whole patient, a love for the profession

## **Fink Significant Learning Components**

Foundational Knowledge (FN)

Application (AP)

Integration (INT)

Human Dimension (HD)

Caring (CARE)

Learning How to Learn (LHTL)

**POGIL** is Process-Oriented Guided-Inquiry Learning, where students work in teams on specially-designed activities that promote master of discipline content and the development of skills in the process of learning, thinking, problem solving, communication, teamwork, management, and assessment. (David Hanson, 2006). The VCU SOM Office of Faculty Affairs and Curriculum Office sponsored a faculty development workshop in fall of 2008 I on POGIL which was taught by two members of the VCU Chemistry faculty who are nationally recognized experts in this teaching method.

*kokreutzer 1/09, rev. Lebman 1/09*