**Biology 364 Immune System Dysfunction Spring 2011**

**Case studies in Immunology**

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**Class Meets:** TR 12:15-1:30 Chambers 2196

**Office hours**: TR 2-4pm or arrange another time with me by email or otherwise

**Prerequisites:** Bio307 (preferred, see course description) or Bio301 or Bio302 or Bio308

**Course description:** This seminar is intended as an extension to the Immunology class (Bio307) where the basic vocabulary and concepts of immunology were introduced. Therefore this seminar is meant to build upon the knowledge from Bio307 and uses case studies of immunological disorders as a tool to

* Make connections between the basic principles of immune system function (including their molecular mechanisms) and the underlying causes of human disease
* Reinforce and add to the immunology vocabulary as it is used in the primary clinical and research literature
* Synthesize and apply knowledge to actual cases from deciding what tests to run to final diagnosis and treatment
* Learn to critically evaluate experimental design and data interpretation, and propose alternative approaches by presenting and evaluating scientific arguments from the literature
* Become familiar with the techniques used to investigate immune system dysfunction as relevant to diagnosing patients, as well as developing animal models for human disease

**Textbooks:** Main textbook – “Immunology – Clinical Case Studies ad Disease Pathophysiology” by Strober and Gottesman, first edition (required)

“Imunology” by Kuby, 6th edition OR “Immunobiology” by Janeway, 7th edition will be useful if you want/need comprehensive review on a topic. I will do my best to have a copy available for you in the Bio Lounge on the second floor of Dana.

Additional reading materials from the primary literature will be chosen for discussion.

**Expectations:** Students will be expected to

* Spend a minimum of 3 hours a week engaged in the research, reading and analysis of the primary immunology literature (this is the “lab” portion of your class) and at least as much time working on assignments, preparing and practicing oral and written presentations, attending appropriate seminars by outside speakers, etc.
* Actively participate in the learning process by asking question, proposing solutions, and generally engaging in scientific argument throughout the seminar
* Work collaboratively with their peers, making intellectual contributions to all projects
* Will strive to recognize the value of integrating approaches and information of many fields of study and appreciate the relevance of the material to understanding human disease.
* Self monitor their progress towards achieving the learning goals outlined in this syllabus

**Evaluation:** **Due date:**

3 case studies (10% each) see schedule

2 in class article presentations (10% each) TBA

class/discussion participation (10%) every meeting

Annotated literature review (5%) Feb. 24

**Proposal (30%)**

Literature summary March 31 for comments

Proposed research or clinical study April 21 for comments

Final draft of proposal May 4

**Schedule**

**Topic Chapter Exercise**

**Week1**  Complement Deficiency 8 paper anatomy

**Week 2** Severe Combined Immunodeficiency 2 figure discussion

**Week 3** Hyper IgM 4 article discussion

3 groups different articles

**Week 4** DiGeorge Syndrome (T) 3 trip to the library to hear

ALPS (R) 6 about RefWorks

**Week 5** Student choice of immunodeficiency (T) articles picked by students – 3 groups

**Case study exercise (R) Feb 10**

**Week 6** Anaphylaxis 11 individual presentations

**Week 7** Asthma 12 individual presentations

**Week 8 Spring Break**

**Week 9** Student choice of hypersensitivity individual presentations

**Case study exercise (R) March 17**

**Week 10** Myasthenia Gravis 14 individual presentations

**Week 11** Multiple sclerosis 15 individual presentations

**Week 12** Type 1 Diabetes 16 individual presentations

**Week 13** **Case study exercise**

Student choice of topic from here on individual presentations

**Week 14** Student choice individual presentations

**Week 15** Student choice individual presentations

**Week 16** Work on final drafts of proposal