(1) M AUG 5 Introductory Videos: (INT-A) Course Introduction  (INT-B) Immune Organs  (INT-C) FACS and Flow Cytometry
Ref (1) - DW Sears. Technology Focus 1 - Flow Cytometry and Fluorescence Activated Cell Sorting
Ref (2) - DW Sears. Technology Focus 2 - CD Antigen Designations

T 6 L01 - Overview of the of Vertebrate Immune System
Introductory Video: (INT-D) Immune Cells
Edition 7 (2016)

W 7 L02 - Polarized Activation and Effector Functions of CD4 T Cells
GN Case #46 (#48): Lepromatous Leprosy

R 8 L03 - Cross-regulation of Innate and Adaptive Immunity
Introductory Video: (INT-E) MHC Genes, Proteins, & Diversity
GN Case #9 - DiGeorge Syndrome

F 9 L04 - Severe Combined Immune Deficiencies (SCIDs)
GN Case #5 - X-linked Severe Combined Immunodeficiency (X-Linked SCID)
Case #6 - Adenosine Deaminase (ADA) Deficiency
Case #11 - Graft-versus-Host Disease (GVHD)
Edition 6 (2012)

(2) M 12 L05 - SCIDCaused by Defective T and B Lymphocyte Maturation
GN Case #7 - Omenn Syndrome (OS)
Case #8 - MHC Class II Deficiency or so-called Bare Lymphocyte Syndrome Type II (BLS II)

T 13 L06 - SCIDCaused by Defective T and B Lymphocyte Activation
GN Case #2 - CD40 Ligand Deficiency, or X-Linked Hyper IgM (XHIGM) Syndrome 1
Case #16 - Wiskott-Aldrich Syndrome (WAS)

W 14 L07 - Severe Immune Deficiencies Caused by Defective B Lymphocyte Maturation
GN Case #1 - X-Linked Agammaglobulinemia (XLA)
Case #3 - Activation-Induced Cytidine Deaminase (AID) Deficiency

R 15 L08 - Modern Anti-Cancer Immunotherapies - Checkpoint blocking antibodies, anti-tumor antibodies and anti-tumor vaccines.

F 16 L09 - Gene Defects Impairing Innate Mechanisms of Anti-microbial Immunity
GN Case #23 - X-Linked Hypohydrotic Ectodermal Dysplasia (XHHED) and Immunodeficiency
Case #28 - Recurrent Herpes Simplex Encephalitis (HSE)
Case #29 - Interleukin 1 Receptor-Associated Kinase 4 (IRAK4) Deficiency

F 16 Exam review: Time and campus location, TBA

(3) M 19 L10 - Gene Defects Impairing CTL and NK Lymphocyte Anti-viral Immunity
GN Case #12 - MHC Class I Deficiency or Bare Lymphocyte Syndrome Type 1 (BLS I)
Case #14 - Hemophagocytic Lymphohistiocytosis
Case #24 - Interferon-γ Receptor Deficiency

T 20 MIDTERM 1, TUE, Aug 20th - ON CAMPUS: Reserve a computer lab seat (TBA). OFF CAMPUS: Register w/ ProctorU
(4) M 26 L14 - Autoimmune Pathology Resulting from Impaired T Cell Regulation
GN Case #17 - Autoimmune Polyendocrinopathy- Candidiasis- Ectodermal Dystrophy (APECED)
Case #18 - Immune Dysregulation, Polyendocrinopathy, Enteropathy X-linked (IPEX) Disease
Case #19 - Autoimmune Lymphoproliferative Syndrome (ALPS)
Ref (17) - DW Sears. T Regulatory Cell Focus - History and Introduction to T Regulatory Cells

T 27 L15 - Autoimmune Pathology Arising from Aberant T Cell Activation
GN Case #38 (#40) - Multiple Sclerosis (MS)
Case #42 (#44) - Celiac Disease

W 28 L16 - Autoimmune Pathology Arising from Aberant B Cell Activation
GN Case #35 (#36) - Rheumatoid Arthritis (RA)
Case #36 (#37) - Systemic Lupus Erythematosus (SLE)
Case #40 (#42) - Myasthenia Gravis
Case #41 (#43) - Pemphigus Vulgaris

R 29 L17 - Immune Pathology Arising from Hyperactive T Cells
GN Case #37 (#39) - Crohn's Disease
Case #45 (#47) - Toxic Shock Syndrome (TSS)
Case #53 (#49) - Contact Sensitivity to Poison Ivy

F 30 Exam review: Time and campus location, TBA

(5) M SEP 2 - LABOR DAY

T 3 MIDTERM 2, TUE, Sep 3rd – ON CAMPUS: Reserve a computer lab seat (TBA). OFF CAMPUS: Register w/ ProctorU

W 4 L18 - Immune Pathology Arising from Hyper IgE Production
GN Case #20 - Hyper IgE Syndrome (HIES)
Case #49 - Acute Systemic Anaphylaxis (This case is NOT in the 7th ed.)
Case #47 (#50) - Allergic Asthma
Case #51 - Atopic Dermatitis (This case is NOT in the 7th ed.)

R 5 L19 - Immune Pathology Arising from Dysregulated Proinflammatory Responses
GN Case #33 (#34) - Hereditary Periodic Fever Syndromes

F 6 L20A - The Hygiene Hypothesis
(28-29) Optional reading listed on the next page includes additional recent interesting articles on these topics.

L20B - Epithelial Surface Immunity

(6) M 9 L20C - Immunity and Disease Shaped by the Host Microbiota
(24) - T Gensollen et al. How colonization by microbiota in early life shapes the immune... Science 352:539-44 (2016)

T 10 L20D - Autoimmune Predisposition Linked to Human Microbiota Diversity
(30-32) Optional reading listed on the next page includes additional recent interesting articles on these topics.

L20E - Calibration of Immune Self/Nonself Discrimination by Host Microbiota: Course Recap and Coda

W 11 Exam review: Time and campus location, TBA
R 12 No Lecture
F 13 FINAL, FRI, Sep 13th – ON CAMPUS: Reserve a computer lab seat (TBA). OFF CAMPUS: Register w/ ProctorU

Required Textbook: Edition 6 (2012) or Edition 7 (2016) of “Case Studies in Immunology” by R. Geha and L. Notarangelo (GN), published by Garland Science. Both editions are acceptable but avoid the other editions, while the cases are not identical or are not similarly ordered.

Instructor Contact Information:

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TA: TBA
See GauchoSpace for the schedule of times and locations of the weekly discussion and review sections hosted by the instructors.
Reading References

Assigned Reading

(1) D. W. Sears. Technology Focus 1 - Flow Cytometry and Fluorescence Activated Cell Sorting (GS, Wk0)
(2) D. W. Sears. Technology Focus 2 - CD antigen designations (GS, Wk0)
(17) D. W. Sears. T Regulatory Cell Focus - History and Introduction to T Regulatory Cells

Optional Reading (but no less interesting).