Bl 121 Lecture 1

...Welcome to Human Physiology – what makes us tick!

I. Announcements: Please check & sign attendance roster. Not on list? See Pat during break/> class. *Lab 1 Histology* Thursday in 130 HUE: 10 am - 5 pm sections. Much fun!!

II. Introduction: Staff, office hr, required sources, course overview, grading, expectations & success. Q?

III. Human Physiology LS ch 1, DC Module 1
- A. What? cf: Anatomy LS p 1
- B. Where?Body Levels of Organization LS pp1-6, DC pp1-5
- C. How? Different Study Approaches LS p 1
- D. Why? Security+Decision-Making Power LS p xxi, DC p v

IV. Homeostasis LS ch 1, DC Module 1
- A. What? Maintenance of ECF LS p 8
- B. Where? ECF = Plasma + Interstitium LS fig 1-4 p 8
- C. How? Simplified Homeostatic Model cf: LS fig 1-7 p 14 Balances LS p 9, DC pp 5-6
- D. Why? Cell survival! LS fig 1-5 p 9, DC p 5

Bl 121 Lecture 2

Thanks for signing attendance roster & noting late arrival or early departure time!

I. Announcements Lab 1 Histology today! 130 Huestis (HUE) Fun! Worksheets. Readings: DC, LS, LM? NB: UO Biology blog *vs.* Canvas http://blogs.uoregon.edu/bi121/fall-2018/

II. Homeostasis LS ch 1, DC Module 1
- A. *What?* Maintenance of ECF LS p 8
- B. *Where?* ECF = Plasma + Interstitium + ? LS fig 1-4 p 8
- C. *Homeostatic Balances?* LS p 9, DC pp 5-6
- D. *Why?* Cell survival! LS fig 1-5 p 9, DC p 5
- E. *Physiology in the News* H_2O? Are we like watermelons?
- F. *How* are balances maintained? Simplified Homeostatic Model *cf:* LS fig 1-7 p 14; T°C + BP balance *e.g.* + *vs.* - FB

III. Cell Anatomy, Physiology & Compartmentalization LS ch 2
- A. How big? What boundaries? Why compartments? pp 19-21
- B. Basic survival skills LS ch 1 p 3
- C. Organelles ≡ Intracellular specialty shops Endoplasmic Reticulum (ER), Golgi, Lysosomes, Peroxisomes & Mitochondria, LS fig 2-1, 2-2, 2-3 pp 20-3

Bl 121 Lecture 3

...Anatomy & Physiology Lab Thurs! Fun again!

I. Announcements Q from last time? Come to office hr!

II. Connections Homeostatic model: BP, H_2O + T °C regulation

III. Cell Anatomy, Physiology & Compartmentalization LS ch 2
- A. How big? What boundaries? Why compartments?pp19-21
- B. Basic survival skills ch 1 p 3
- C. Organelles ≡ Intracellular specialty shops w/membranes 1. Endoplasmic Reticulum (ER) 2. Golgi 3. Lysosomes 4. Peroxisomes & 5. Mitochondria. LS 2012 pp 20-34 fig 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8 pp 20-7 tab 2-1 p 36
- D. What about vaults? LS 2006, p 32
- E. Physiol News Moms eggs execute Dad's mitochondria?

IV. Anaerobic vs Aerobic Metabolism Overview Many sources! Mathews & Fox 1976...LS 2012 pp 26-33, fig 2-15 p 33

V. Introduction to Genetics LS 2012 ch 2 p 20-1 + Appendix C
- A. What's a gene? Where? p A-18, fig C-2, C-3
- B. Why are genes important? p A-18
- C. What's DNA & what does it look like? pp A-18 thru A-20
- D. How does information flow in the cell? fig C-6
- E. How does DNA differ from RNA? pp A-20 thru A-22

Bl 121 Lecture 4

Structure-function = fun!

I. Announcements Anatomy & Physiology Lab today! Motivation to Study! Remember to complete p 3-7 dietary record in LM < Lab 3 next wk! Estimating serving sizes. Q?

II. Cell Physiology... Lysomes, Peroxisomes, Mitochondria

III. Anaerobic vs Aerobic Metabolism Metabolism
LS ch 2 pp 26-33, fig 2-15, 2-9, 2-10, 2-11, 2-12 +...
- A. Anaerobic: Cytosol ATP-PC immediate vs. Glycolysis
- B. Aerobic: Mitochondria citric acid cycle, electron transport

IV. Introduction to Genetics LS pp 20-1 + Appendix C
- A. What's a gene? Where? p A-18, fig C-2, C-3
- B. Why are genes important? p A-18
- C. What's DNA & what does it look like? pp A-18 thru A-20
- D. How does information flow in the cell? fig C-6
- E. How does DNA differ from RNA? pp A-20 thru A-22
- F. Genetic code? pp A-22, A-23
- G. How are proteins made? Class skit! fig C-7, C-9

BI 121 Lecture 5

...DietController! More fun in Lab!!

I. ***Announcements*** Nutrition Analyses this Thursday! Please record diet on p 3-7 LM. Bring flash drive. Q?

II. ***Introduction to Genetics*** LS 2012 ch 2 p 20-1 + Appendix C
- A. How does DNA differ from RNA? pp A-20 thru A-22
- B. Genetic code? pp A-22, A-23
- C. How & where are proteins made? fig C-7, C-9
- D. Class skit: Making proteins @ ribosomes!

III. ***Nutrition Primer*** Sizer & Whitney (S&W) Sci Lib
- A. Essential Nutrients: H_2O, 1^0 Carbohydrates, 2^0 Fats, 3^0 Proteins, Vitamins, Minerals; Macro- vs Micro-?
- B. Dietary Guidelines: USDA, AICR, Eat Like the ***Rainbow***!
- C. ***Blue Zones?*** Pondering Paleo, Marlene Zuk, *NAHL* 2015…
- D. How much protein? Excess animal protein & disease?
- E. Carbohydrate confusion. Minimize what? Simple sugars
- F. Anti-aging diets, total *vs* intermittent fasting? *NAHL* 2018
- G. *Beware of Nutrition Quackery* S. Kleiner & Monaco
- H. Best diets? Exercise? Practical guidelines for wt loss!

IV. ***Introduction to Digestion*** Steps + hydrolysis

BI 121 Lecture 7

…Put Lab Notebook in box based on your lab time. Thanks!!

I. ***Announcements*** Exam I one week from today, Oct 23rd! Discussion+Review, Sunday Oct 21st, 6-7:30 pm, here! Q?

II. ***Gastrointestinal Physiology*** DC Mod 3 pp 17-23, LS ch 15+
- A. Central-linking themes: hydrolysis, polymer to monomer
- B. GI = Doughnut? Secretions: What? Where? Why? LS p 438
- C. Control + Organ-by-organ review LS tab 15-1 pp 440-1 +...
- D. Zymogen? = Inactive precursor LS fig 15-9 p 452...
- E. Accessory organs? Pancreas, Liver, Recycling! pp 457-63
- F. Small intestine? Ulcers? LS fig 15-20,15-22 pp 467-8 ***http://www.cdc.gov/ulcer*** *Beyond the Basics* LS p 456
- G. Large intestine? LS fig 15-24 pp 472-4

III. ***Cardiovascular System*** DC Mod 4, LS ch 9, Torstar, G&H+…
- A. Circulatory *vs.* Cardiovascular (CV)? CV *vs.* Lymphatic CV Pulmonary & Systemic circuits DC pp23-31+LS p229+ DC fig 4-1 p 24, LS fig 9-2b p 231
- B. Arteries, capillaries, veins, varicosities? G&H, Torstar, DC
- C. ♥ layers, box, chambers, valves, inlets, outlets LS fig 9-4 p 233, fig 9-2a p 231; DC pp 23-6
- D. Normal *vs.* abnormal blood flow thru ♥ & CVS LS, Fox+…

BI 121 Lecture 6

Nutrition Lab 3 today! More personal data…

I. ***Announcements*** Data + flash drive/e-mail for today's lab! If you want to be sure to have your notebook to study for Exam I on Tuesday Oct 23rd, best to turn in prior to lecture next Tuesday Oct 16th. Review Session Sunday Oct 21st, 6-7 pm. Q? Sample Exam Q? Be sure to see *Active Learning Questions*!

II. ***Nutrition Connections*** Why whole grains? Carbohydrates? Fasting, Intermittent dieting, Best diets? Practical weight loss?

III. ***Gastrointestinal Physiology*** DC Module 3 pp 17-23, LS ch 15+
- A. Steps of digestion Dr. Evonuk + LS pp 437- 9; DC p 23
- B. Hydrolysis + monomer to polymer: central linking themes!
- C. What's missing? LS fig 15-1 p 438
- D. GI-Doughnut analogy Dr. Brilla @ WWU
- E. Common control mechanisms
- F. Gut layers & secretions LS p 438, 440-1
- G. Organ-by-organ review LS tab 15-1 pp 440-1 + DC fig 3-1
- H. Accessory organs of digestion
- I. Ulcers? Causes?

BI 121 Lecture 8

Fun heart rate & BP lab today! Hooray!!..

I. ***Announcements*** Exam I next session; 1 & 2 pm lab sections go directly to 13 KLA & 21 KLA. All others (except AEC) here (100 WIL)! Review: Sunday, 6 pm 123 PAC! Lab Manuals. Q?

II. ***Cardiovascular Connections*** LS 2012 ch 9, Torstar Books+...

III. ***CV Physiology in News*** AHA + ACSM exercise guidelines!

IV. ***CV Pathophysiology & Risk Reduction*** LS ch 9, 10 +…
- A. AMI, CVA, CVD, PVD, TIA, HTN? + surgical treatments
- B. Atherosclerosis? LS fig 9-27, 9-25, 9-26 pp 266-8
- C. How to minimize risk of CVDs? Treatment triad: 1.Exercise, 2. Diet, 3. Drugs+Surgery
- D. Food choices make a difference? Plant-based diet! What's HAPOC?