CAI – The Immersion

Introduction to the Clinical Anatomy Immersion

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from Vesalius, De Humani Corporis Fabrica (1543)
One College  
Three Campuses
Features of the Immersion

- “Immersion”—highly focused, few other activities
- Four days per week (Mon-Tues-Thurs-Fri)
- Three hours of lab per day, balance of time is largely for reading and other preparation
- OMM is the other major player in the Immersion

- Frontloads musculoskeletal anatomy (back & limbs)

- Has a strong clinical emphasis
Justification for the Immersion

• Gross anatomy is the foundation and language of medicine—particularly Osteopathic Manipulative Medicine (OMM)

• Provide that foundation prior to beginning the rest of your training

• Quickly bring all students up to the same level

• Better prepare all our students for OMM training

• Provide a clinical focus & orientation at the outset

• Starting the process of clinical thinking & problem solving
What Is Clinical Anatomy?

**Systemic Anatomy**
- arterial system

**Regional Anatomy**
- head & neck
- thorax
- upper limb
- abdomen & pelvis
- lower limb

**Clinical Anatomy**
- Carpal tunnel syndrome
  - paresthesia
  - thenar wasting
  - hand weakness

(from M&D COA6 2010)
Why Emphasize Clinical Anatomy?

• Medical school is for training physicians, not anatomists

• Promotes critical thinking and clinical problem-solving using anatomical knowledge

• Enhances ability to learn and retain anatomy
  • Retention is better if learning is done in the context in which it will be ultimately used
  • “Seeing the forest [clinical application] for the trees [anatomical structures]”

• “Reciprocal illumination”
  • Need anatomy to understand clinical practice
  • Need clinical correlations to understand anatomy
Why Emphasize Clinical Anatomy?

A.T. Still’s Four Tenets of Osteopathic Medicine

1. The body is a unit; the person is a unit of mind and body
2. The body is capable of self-regulation, self-healing, and health maintenance
3. Structure and function are reciprocally interrelated
4. Rational treatment is based on the above three principles
Anatomy of the Immersion: staff

L. Witmer, PhD
Professor
Instructor of Record

K. Johnson, DO
Executive Dean

Y. Slyvka, MD
Instructor

W. R. Porter, PhD
Instructor

B. Chadwell, PhD
Instructor

HCOM – Athens

Don Cerio
Grad TA

James Nassif
Grad TA
Anatomy of the Immersion: staff

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MSIV, OMM Fellow

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Renate Gyenge
OMSII
HCOM TA

Nikitas Maglis
OMSII
HCOM TA

Mike Vanes
OMSII
HCOM TA
Anatomy of the Immersion: The Lab

• 4 or 5 students/table

• Athens: Sections A & B, alternate AM/PM slot weekly

• Teams do their own dissections. Division of labor: cutters, readers, …

• Dissect BOTH sides of the donor

• Come to lab at off times to finish up

• **Attendance in lab is mandatory**
**Anatomy of the Immersion: The Lab**

**Mandatory Attendance**

**Why?**
- Material is central to your training
- Responsibility to your dissecting team
- Honoring the gift of a donated body

**Stay for the whole lab**
- Work on dissection
- If dissection is completed, work with other resources (e.g., other donors, bones, imaging, etc.)
Anatomy of the Immersion: Imaging

Dr. Jeffery S. Benseler, DO

- online video modules
- online self-study PowerPoints
- Face-to-face session Aug 15th

Medical Imaging Basics
- four asynchronous learning modules in Mediasite
- linked on Blackboard under “Imaging Resources”
- provide foundations of different imaging modalities
- won’t be assessed on the details but view well before Aug 15th session

Online Self-study PowerPoints
- linked on Blackboard under “Imaging Resources”
- required content on which you will be assessed according to these dates
  - Lumbar Spine Imaging: Exam 1 – Monday, July 31st
  - Cervical Spine Imaging: Exam 1 – Monday, July 31st
  - Upper Extremity Imaging: Exam 2 – Monday, August 14th
  - Lower Extremity Imaging: Exam 3 – Friday, August 25th
Anatomy of the Immersion: Imaging Stations

- Plain, CT, MRI
- Importance of sectional anatomy for imaging
- Very detailed but provide key correlations
- Use Dr. Benseler’s PPTs as guide for exam prep
- PDFs on Blackboard but not for distribution
Anatomy of the Immersion: Online

http://www.ohio.edu/people/witmerl/3D_human.htm

3D Interactive Human Anatomy at Ohio University. This page presents interactive 3D visualizations of human anatomical structure. Our team has been visualizing human anatomical structure based on CT scanning since 2006, and some of our work on a dried skull (OUVC 10503) was published in 2008. In 2008, we had the opportunity to inject the upper extremity blood vessels of a fresh (unfixed) cadaver of a white male in his 50s named Frank. Additional materials will be added. The project is led by Lawrence Witmer and Ryan Ridgely, and Ridgely has done all of the segmentation, 3D visualization, and animation. Movies have been labeled and 3D PDFs have been assembled by William Porter, Ashley Mochardi, and Jason Bourke. Details of the specimens, scans, and techniques are on the Methods page.

The resources on this site are open-access and freely downloadable. They are intended to serve as STEM educational aids for medical students, K-12, undergraduate students, and medical students.

3D PDFs
3D PDFs allow anyone with even the free Acrobat Reader to interactively manipulate the 3D models that we generate with powerful software like Avizo. The whole object or individual parts can be spun around, isolated, made transparent, hidden, etc. The files can even be saved to your local computer. We provide each 3D PDF in three different resolutions and file sizes to match your interest and the power of your computer. View our mini-zoo.

Videos
Human skull - exploded skull with bones labelled...

movies
Clinical Themes
• Posted at the beginning of lab
• Provide clinical correlations
• For your reference; instructors may or may not discuss
• Available online prior to lab

Question of the Day (QOD)
• Short clinical vignette
• Table team explores the QOD
• Faculty & Fellow/Associates will discuss QOD with trios or pairs of tables
Anatomy of the Immersion: Books

- Relevant pages to read are on the schedule.
- Moore’s Clinical “Blue Boxes” are key (but you won’t understand them without reading what’s between!)
- **Dissector & Atlas must be at each table!**
- Read dissector prior to coming to lab
- iPad and Kindle version of books are fine
- Anatomy.tv by Primal Pictures (click image below)

3D HUMAN ANATOMY AS YOU’VE NEVER SEEN IT BEFORE
1. Four self-assessment quizzes online on Blackboard

2. Three sets of written (ExamSoft e-tests) and practical exams
   1. Monday, July 31st – Back
   2. Monday, August 14th – Upper Extremity
   3. Friday, August 25th – Lower Extremity

3. Year-2 med student assistants will be setting up mock practicals
Donors & Body Donation

• Role of the donor: 3D anatomy, variation, “diagnosis” of pathology, etc.

• Significance of the donor
  • A profound experience
  • Directly see & handle structures you’ll later have to imagine
  • Opportunity and privilege to work on an actual human
  • Potentially uncomfortable feelings
    • Death: Illness, end-of-life, dying, corporeal remains
    • A very different kind of intimacy
    • Overcoming societal taboos
    • Sadness: clear evidence of their humanity

• Body donation
  • Conscious, often family decision to donate
  • The ultimate gift
  • Honoring that gift
    • Respect, professionalism
    • USE the gift: prepare for lab, don’t miss lab, study & learn from all the donors

• Great book! — Body of Work, by C. Montross, MD