Course Proposal for BIO 426: Spring 2016

Title**: Embodied Anatomy: Mobilizing Our Frames of Reference**
Instructional Team: Sharon Babcock (Bio) and Kate Trammell (Dance)

Course: **BIO 426** to be cross-listed with **DANC 390**
Credits: **3 credit hours**
Location: IVS Studio Seminar Course, Roop Hall, second floor

Class Time: Fridays 10:30-1:00 pm
In additional weekly class time, the course will also include Canvas-mediated modules (anticipated duration of 30-40 minutes per week). Modules will also be used to provide topic-specific content and context, including imagery, text, video, palpation, and movement studies. On-line resources will also provide contextual background regarding frames of reference, arts and sciences initiatives in higher education, as well as the field of dance science & medicine.

Course Description:
This course will assemble an interdisciplinary group of student artists and scientists for adventures in experiential anatomy. Our premise is that active shared exploration of human anatomy leads to common ground. Diverse points of entry and initial frames of reference enrich anatomical understanding. We will emphasize the application of anatomy to your discipline and future work. Course will include collaborative group work as well as individualized projects and outcomes. There will be a final exhibit of student-generated materials which could include movement or performance studies, art work, or research findings.

Movement pioneer Margaret H'Doubler stated, in working with the body "you are your own textbook, laboratory and teacher."

Course Goals & Objectives:

GOAL 1. *Develop a conceptual understanding of human anatomy through a focused examination of movement – both "of" and "within" the human body.*
Students will:
A. recognize and explain terminology and foundational principles of human movement (e.g. stability & mobility)
B. develop an understanding of the relation between structure and function
C. understand dynamic interactions amongst organs and systems (skeletal, muscular, nervous, respiratory, gut, circulatory, and sensory)

GOAL 2. *Pursue the study of human anatomy as a means for understanding "human-ness" (as a species) as well as "self."*
Students will:
A. apply experiences as an embodied mover and learner to both personal and interpersonal growth. Explore study of anatomy from perspective of "self" and "other."
B. demonstrate awareness of one's unique body structure and habitual patterns of use in movement.
B. explore role of anatomy in relating with others through human expression and communication
C. consider "human-ness" in the context of developmental movement patterns, organismal development (ontogeny) and vertebrate evolution (phylogeny)

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GOAL 3. *Be an active member of a learning community.*
Students will:
A. identify and describe one's interest(s) and frame(s) of reference relative to anatomy
B. participate in individual and group study of anatomical science using diverse modes of learning
C. modify, combine, construct, integrate diverse frames of reference to generate new understanding via embodied learning
D. consider role of anatomy in diverse disciplines (e.g. arts, sciences, medicine, technology) and how integrating embodied learning might serve to enhance professional and interprofessional education and practice

GOAL 4. *Foster development of observation, critical thinking, and problem-solving skills with regard to human structure and movement.*
Students will:
A. utilize multiple modes of learning, communicating (oral and written expression as well as creative expression, including drawing), and exploring (observation, palpation, movement, modeling) to embody and synthesize "body knowledge"
B. identify individual variation in human anatomy and its impact on structure, function, expression, communication, and interaction.
C. explore interaction of human form with the human experience. Consider how experience influences form (integration of physical, mental and social experience) and form influences experience

GOAL 5. *Identify an area of focused inquiry associated with their academic interest(s) or future career goal. Make relevance of study.*
Students will:
A. present outcomes of focused inquiry at final exhibit of student-generated materials. Materials can include movement or performance studies, art work, or research findings.

<u>Modes of Learning to be used in BIO 426 /DANC 390</u>:

- Explore the interface of art & science: the course integrates a clinically-oriented approach to the study of anatomy with a dancer's multi-sensory perspective.
- Use of anatomical models, skeletons, charts, atlas images
- Student generated illustrations
- Movement studies
- Sculpting anatomical structures through use of clay (*Anatomy in Clay* Learning Systems - Zahourek)
- Focal observation & exploration using the cadaver lab (prosections & plastinates)
- Use of experiential anatomy and somatic studies. "Experiential anatomy" and "somatic studies" are broad terms applied to acquiring body knowledge. These methods aim to integrate information with experience. Course activities will exemplify connections amongst the physical, emotional, intellectual, and social selves and health.
- Experiential anatomy: *Body Stories* by Andrea Olsen
- Palpation guide: *Trail Guide to the Body* by Andrew Biel
- Text & choreography of *Namely, Muscles* by Claire Porter

<u>Units of Study</u>:

1. Joints: balls, sockets, saddles, hinges, condyles, pivots & slides
2. Spine: axial variations on a vertebrate theme
3. Skeletal Muscle: eccentric, concentric, force, velocity, & tension
4. The Core of Human Movement: a layered muscle wrap
5. Heart, Lungs, Diaphragm: thoracic organ dance company (just a billion

5. Heart, Lungs, Diaphragm: thoracic organ dance company (just a billion performances in a human lifetime)
    - dynamic interrelationship of the thoracic organs as a basis of fundamental life processes
    - muscular and bony thorax, respiratory and circulatory systems
6. Skeletal Appendix I: Pelvis and hip joint
7. Bipedality & Human Gait: downright upright, reoriented & twisted
8. Skeletal Appendix II: Upper Limb (shoulder, arm, forearm, & hand) reach, hold, embrace, push away
9. Development of Human Movement: somatic education & the body-mind collaboration
10. Muscle Memory: learn, repeat/refrain, retain
11. Phagia & Peristalsis: muscular hydrostats & propulsion

Grading Policy (draft)

Individual Project: Focal Topic & Exhibit	25%	
Project Plan		
Exhibit		
Peer-to-Peer Formative Feedback	15%	
Modules		
Individual Projects		
Individual Learning Activities & Outcomes	25%	
Canvas mediated		
Embodied Learning		35%
in each unit		

Organismal diversity requirement? No
Laboratory requirement? No

Justification for Offering:
Instructional Team: Kate Trammell and Sharon Babcock

Previous experience:
(1) Recent ***Embodied Learning Project*** Workshops, Performance Residencies, & Presentations

West Virginia School of Osteopathic Medicine and Trillium Arts. September 26-27, 2014 in Lewisburg, WV. Co-presented 2 workshops, Trammell performed *Namely, Muscles,* Babcock hosted Talk-Back following performance.
http://mountainmessenger.com/briefly/

Duke University. Co-sponsored by Department of Evolutionary Anthropology, the Dean of Natural Sciences, the Office of the Vice Provost for the Arts, and supported by the Mary Duke Biddle Foundation. October 1-4, 2014 in Durham, NC. Co-presented 3 workshops, Trammell performed *Namely, Muscles,* Babcock hosted Panel Discussion following performance.
https://danceprogram.duke.edu/guest-artists/sharon-babcock-kate-trammell and
http://www.dukechronicle.com/blogs/playground/posts/2014/10/02/namely-muscles-first-spine#.VYHALaZHqbg

Embodied Learning Project: Roundtable presentation at the International Congress of Fine Arts Deans (ICFAD). October 23, 2014 in Kansas City, MO.
http://www.icfad.org/roundtable-presentations-2014

James Madison University IVS Colloquium. March 18, 2015 in Harrisonburg, VA. https://jmutube.cit.jmu.edu:8443/content/IVS/playlist/26056/rss/?player=jmutube

(2) James Madison University is 1 of 32 partners in the ***Alliance for the Arts in Research Universities*** (a2ru.org).

(3) What is embodied learning?
Freiler, T.J. 2008. Learning Through the Body. N*ew Directions for Adult and Continuing Education 119, pp. 37-47.*

- "From the sciences & engineering to the arts & letters, embodied learning is gaining recognition as a sound, evidence-based pedagogy. Such *learning through and of movement* – often called kinesthetic or somatic – connects students' knowledge of content to physical, neural, and sensory experiences.
- "Learning occurs in social contexts and bodies, not just in minds."
- "The evolving understanding of embodiment is beginning to remove the body from a place of otherness into a practicing space where both body and mind are being more holistically approached and valued."

(4) Evidence for value and impact of multi-modal approaches to anatomy education: "The Anatomy of Anatomy: A Review for Its Modernization" by Sugand, Abrahams & Khurana (2010). *Anat Sci Education* 3:83-93. Discusses alternative pedagogical resources and strategies. Examples include: behavioral re-humanization, body image & painting, surface anatomy, palpation, awareness of anatomical variation, multidisciplinary input, peer-peer partnerships, and professionalism.