

EYP/® minutes

To: Attendees
Project Name: Bull Run Hall Addition
Project No.: 1019004.01
Date of meeting: May 20, 2019
Time of meeting: 10:15-12:00
Location of meeting: Sci Tech, IABR, Conf Rm 1004
Meeting Number: 1.2

Meeting Purpose: Programming for Instructional Wet Labs – Biology or Chemistry Intensive

Attendees:

George Mason University:

- Ben Allen, ITS
- Crystal Clemons, ITS
- Mike Buschmann, Bioengineering
- Remi Veneziano, Bioengineering
- Caroline Holman, Bioengineering
- Tony Falsetti, COS-FRSC
- Martha Wescoat-Andes, COS
- Carrie McVicker, COS
- Mary Ellen O'Toole, COS
- Peggy Einhorn, COS
- Colin Reagle, VSE-Mechanical
- Oscar Barton, VSE
- Joyce Rose, VSE
- Laura Manno, Provost/Planning
- Colby Grant, Sci Tech Admin
- Debbie Brady, Facilities
- Virginia Steele, Facilities
- Joy Staulcup, Facilities

EYP:

- Melissa Burns, Academic Planner
- Brian Tucker, Lab Planner
- Rick Clarke, Lead Architectural Designer
- Rebecca Ross, Planner/Architect
- Suzanne Klein, Project Director

Minutes:

General Comments:

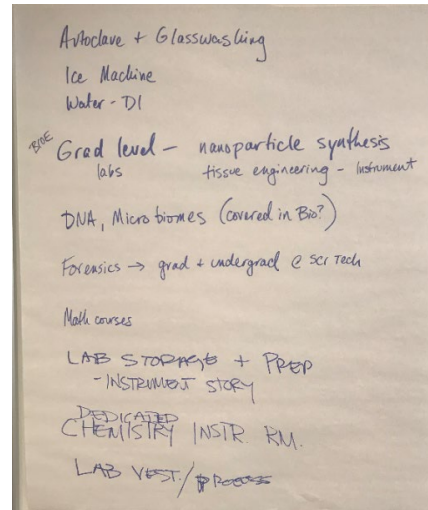
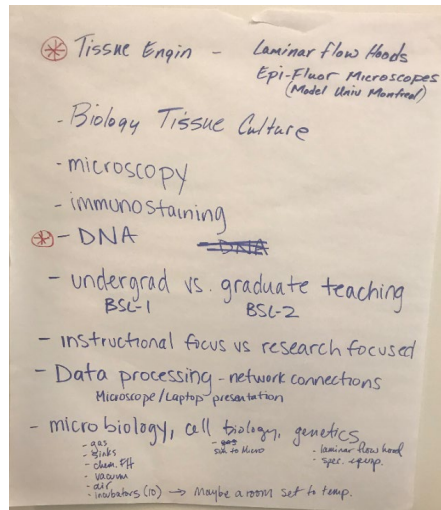
The group met on George Mason University's SciTech campus to discuss functional space needs for Bull Run Hall Addition and Academic VIII Buildings. This meeting focused on needs specifically related to Biology or Chemistry intensive instructional wet labs.

- **Introductions:** Laura Mano provided an introduction of the design team EYP which was followed by introductions of all participants.

- **Project Overview:** Laura explained that the Sci Tech campus will be a standalone campus and GMU is committing resources to make that happen. The first step is Bull Run Hall Addition followed by a 200,000gsf building, Academic VIII, listed as the number one priority to request capital funds. She asked the group to identify functional space needs to refine the program for the Bull Run Hall Addition and identify new needs for the expansion into Academic VIII.

Brian and Melissa lead a programming exercise which divided the large group into two smaller discussion groups to identify functional space types related to Biology or Chemistry intensive instructional wet labs. Afterward, each group reported out to the larger group on their discussions to create a consolidated list of functional space types.

- Group 1:
- Tissue Engineering Lab
 - Need hoods, microscopes, incubators
 - Incubators could possibly be in a separate room as own dedicated space.
 - Biology Tissue Culture
 - Immunostaining
- Microscopy / DNA (wet lab needs that overlap with forensic needs)
- The group had much discussion on BSL-1 vs BSL-2 labs.
 - BSL-1:
Undergraduate Labs
Students not trained for a BSL-2 lab as an undergraduate.
 - BSL-2:
Graduate teaching labs
Human DNA, Viruses or Biohazards
- Microbiology and Cell biology have basic needs such as gas, sinks, fume hoods, air, autoclave, etc.
- Genetics need specific equipment and laminar flow hoods.
- Dedicated instrument storage room for chemistry
- If Math courses were also taught, the undergraduate students could do their entire day on the Sci-tech campus.



- Group 2:

- **Thermodynamics + Fluid Mechanics**

- Synergies in Thermodynamics, Climate, Chemistry, Mechanical Engineering, Physics and Micro/Nano Sciences.
- Computational Sciences overlap with Micro/Nano Sciences.
- Energy Focused
- Wind Tunnel

- **Molecular + Tissue Engineering**

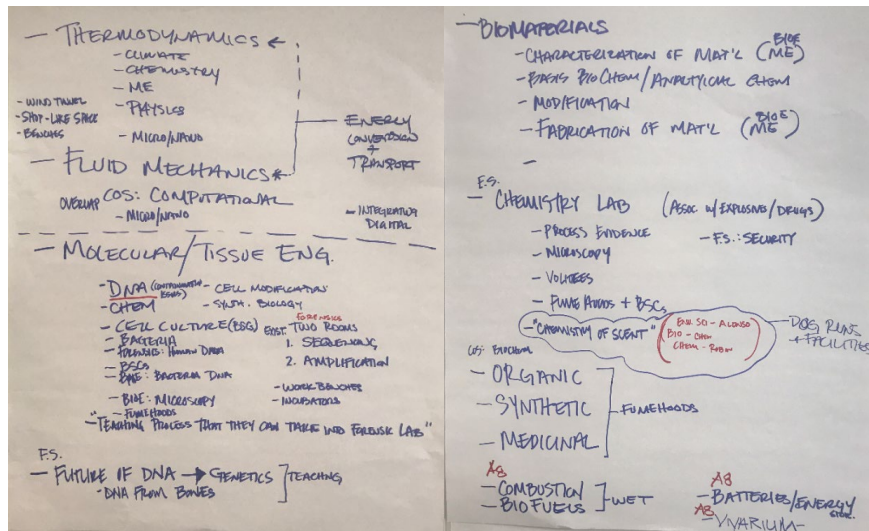
- DNA (Bioengineering and Forensics)
 - Need to understand contamination
 - Bacterial DNA (Bioengineering) vs. Human DNA (Forensics)
 - Cell Modification
- Synthetic Biology
- Chemistry
- Cell Culture
- Microscopy
- Genetics: Future of DNA
 - Teaching how to extract DNA from Bones
 - New faculty member being hired in this field
- Equipment requirements:
 - Biosafety Cabinets
 - Fume Hoods
 - Incubators

- **Biomaterials**

- Characterization of Materials (Bioengineering and Mechanical Engineering)
- Modification of Materials
- Basic Biochemistry and Analytical Chemistry
- Fabrication of materials (Bioengineering and Mechanical Engineering)

- **Chemistry Lab**

- Forensics overlap with chemistry:
 - Study explosives and drugs
 - Processing evidence (microscopy)
 - "Chemistry of Scent" (tie-in with dog runs and facilities to house the dogs)
- Organic, Synthetic, & Medicinal Chemistry
- Equipment requirements:
 - Biosafety Cabinets
 - Fume Hoods
 - Microscopy
- Fixed instrument room
- Cubbies and Lockers with space for students to store their personal belongings and additional place to hang lab coats separate from personal items.

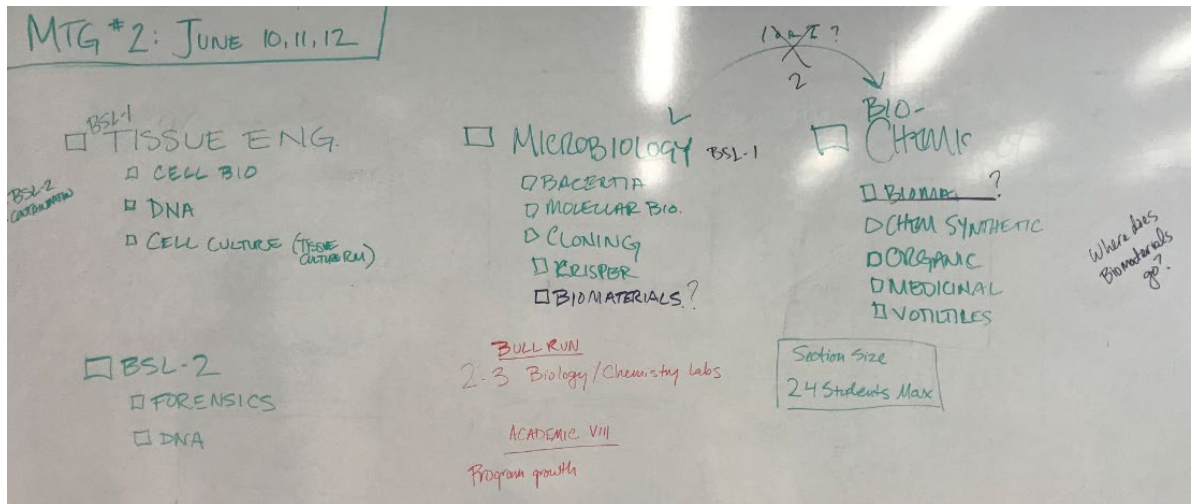


Other Discussion

- Teaching Vivarium Space is lacking on this campus for (mice and rabbit) and should be considered for future. There is one close to campus. Potentially could utilize that one with better access.
- Consider rooms for storage and prep
- Led by Melissa and Brian, the group began to organize space needs into functional space types to identify overlap between departments.
 - Tissue Engineering (BSL-1 vs. BSL-2 sciences)
 - Cell Biology (BSL-1)
 - DNA (BSL-1 & BSL-2)
 - Cell Culture (Tissue Culture) (BSL-1)
 - Forensics (BSL-2)
 - Microbiology
 - Bacteria

- Molecular Biology
 - Cloning
 - CRISPR (related to genomics)
- Biochemistry
 - Biomaterials
 - Synthetic Chemistry
 - Organic Chemistry
 - Medicinal
 - Volatiles
- Other Considerations:
 - 2-3 Biology/Chemistry wet labs were identified in the original program for Bull Run.
 - Need to identify the mix of Graduate vs. Undergraduate Students.
 - Provide plenty of shelving, cabinets and lockable storage to share equipment.
 - Microbiology and Chemistry could be one combined or two separate functional space types.
 - BSL-1 lab would be required from Cellular Biology, Genetics and Microbiology.
 - BSL-2 lab would be required for any human specimen
 - Forensics undergrad and graduate programs both use human DNA.
 - Prefer a separate BSL-2 lab for Forensics in order to not have to decontaminate between labs.
 - Protocol is aligned with DNA labs all over the country.
 - Student require special training to use this lab
 - Plan space for a lab manager office
- Teaching:
 - Forensics: 24 Students per lab
 - 16 sections of Microbiology per semester
 - 48 sections of General Biology per semester
 - 17 sections of Genetics per semester
- Priorities for Bull Run:
 - Microbiology / Biochemistry
 - Tissue Engineering (includes DNA)

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End of Meeting

The above constitutes my understanding of the items discussed and the decisions reached. If there are any additions or corrections, please, contact the undersigned.

Signed: Suzanne Klein

Cc: Attendees

Date: May 25, 2019