University of Vermont
College of Engineering and Mathematical Sciences
New Funded Student Orientation

Time: 1:00pm
Location: Votey Hall 105
Welcome
Agenda

Introductions

Communication & Expectations

Graduate College

Laboratories & What you need to know!

Access – Office & Lab

Supplies/Resources

Time Management 301
Introductions

• Samantha Williams, Graduate Programs Coordinator (CEMS)
• Marnie Owen, Assistant Dean for Student Services
• Student Services Office, Votey 301

• Introduce yourself to your neighbors!
  • Name
  • Where are you from?
  • What program are you in?
  • Fun or interesting fact about you!
Teamwork makes the Dream Work

- Image of what your assistantship/supervision looks like

- What expectations do you have?

- What do you need to be successful?
  - Communication
  - Guidelines
  - Feedback

- Create a plan!

- Checkpoint Meetings
Meet back here at 1:50pm!

How did the meetings go?

Does anyone want to share what they talked about?
Meet Sean Milnamow!
Welcome to the College of Engineering & Mathematical Sciences Labs

Courtney D Giles
CEMS Laboratory Manager
Graduate Student Orientation
23-24 August 2017

The University of Vermont
What I’ll talk about

• Who I am and what I do
• Overview of teaching labs in CEMS
• Working in teaching labs
• What to do next
Who I am and what I do

CEMS Laboratory Manager – Votey 334B – cdgiles@uvm.edu
Dean’s Office
Who I am and what I do

CEMS Laboratory Manager – Votey 334B – cdgiles@uvm.edu
Dean’s Office

- Teaching labs
  - Organization
  - Scheduling
  - Training
  - Documentation
  - Equipment acquisition, maintenance, repairs
  - CEMS liaison for lab facilities maintenance
  - Lab decommissioning
  - Help with projects
Who I am and what I do

CEMS Laboratory Manager – Votey 334B – cdgiles@uvm.edu
Dean’s Office

- Teaching labs
  - Organization
  - Scheduling
  - Training
  - Documentation
  - Equipment acquisition, maintenance, repairs
  - CEMS liaison for lab facilities maintenance
  - Lab decommissioning
  - Help with projects

- Research labs
  - Support
  - Support
  - Support
  - Support
  - Support
  - Support
  - Support
Teaching Labs in CEMS
Teaching Labs in CEMS

Mechanical Engineering & Civil and Environmental Engineering

- FLUIDS – Votey 101 (NEW)
  - CE162, ME123, CE265
- GEOTECHNICAL – Votey 127 (NEW)
  - CE182, CE185/186
- CLEAN MATERIALS – Votey 246 (NEW)
  - ME124
- STRUCTURE – Votey 114A
  - CE010, CE101, CE170
- ENVIRONMENTAL – Discovery W218 (NEW)
  - CE254, CE003

Need photo
Teaching Labs in CEMS

Electrical & Biomedical Engineering

- **CIRCUITS** – Votey 334 (NEW)  
  EE081/82, EE183/184
- **DIGITAL** – Votey 330 (NEW)  
  EE134, EE231
- **ENERGY** – Votey 312 (NEW)  
  EE113, EE215
- **EE Project Space** – Votey 308 (NEW)  
  EE187/188, ME185/186
- **MECHATRONICS** – Votey 330 (NEW)  
  EE174, EE273, EE278
- **BIOMEDICAL** – Votey 225 (NEW)  
  EE081

Need photo
Teaching Labs in CEMS

Fabrication & Prototyping

FabLab
Jenn Karson

Shop
Floyd Vilmont
Teaching Labs in CEMS

Computer Labs
• Mathematics & Statistics Teaching Lab – Votey 205
• Votey 229, 250, 252
• Perkins 108 (NEW)

CEMS IT Support
  Tim Raymond – Votey 237
  Ian Davis – Votey 236
  Email: help@cems.uvm.edu
Teaching Labs in CEMS

Project Laboratory
• Votey 120
Working in CEMS Labs

1.

2.

3.

4.

5.

Getting started…
Working in CEMS Labs

1. RMS Orientation & Training Checklist

2. TRAINING Required & Recommended

3. Building & Lab Access

4. Standard Operating Procedures (SOPs)

5. Demonstrate Proficiency

Getting started…
Working in CEMS Labs

1.

2. TRAINING Required & Recommended

3. Building & Lab Access

4. Standard Operating Procedures (SOPs)

5. Demonstrate Proficiency

NEW Lab-Specific Training Sessions
Sign-up and dates in follow-up email from Courtney
Working in CEMS Labs

1. Contact Lab Supervisor and Department Administrator for Key and CatCard Access

2. TRAINING Required & Recommended

3. Building & Lab Access

4. Standard Operating Procedures (SOPs)

5. Demonstrate Proficiency

Contact Lab Supervisor and Department Administrator for Key and CatCard Access
Working in CEMS Labs

1.

RMS Orientation & Training Checklist

CEMS Laboratory Training Assessment

2. TRAINING Required & Recommended

3. Building & Lab Access

4. Standard Operating Procedures (SOPs)

5. Demonstrate Proficiency

Contact Courtney or Lab Supervisor

Getting started…
Working in CEMS Labs…if you’re a GTA

Setup & organize lab

Assist with safety & organization

Run lab modules

Update lab manuals

Update equipment & supplies inventories

Provide feedback online & in sessions
What to do next

You will receive an email from cdgiles@uvm.edu
• Explore <CEMS Teaching Labs> website
• Take Graduate Student Survey for Work in CEMS Labs
• Take CEMS Laboratory Training Assessment
• Complete required and recommended training
• Complete Orientation and Training Checklist
• Request access for lab(s) you will be working in
• Have fun and ask lots of questions!
Thanks!
• UVM Risk Management & Safety
  - Who are we?
  - How do we support your research?
• UVM Health & Safety Policy Overview
• Other lab support services available
Safety website
www.uvm.edu/safety
Risk Management & Safety

Laboratory Safety Coordinators

Vikki Carhart
College of Arts & Sciences

Lee Diamond
CEMS/CALS

Sonia Godoy-Tundidor
College of Medicine
UVM Biosafety Program
Coordinator & Assistant

Jeff LaBossiere

Sarah Roy

Institutional Biosafety Committee - IBC

Institutional Animal Care and Use Committee
Radiation Safety Office (RSO)

Tom Kellogg

Ron Kimball

Amy Kutchukian
Our main task…

PROVIDE SAFETY TRAINING

REVIEW SOPs

EXPOSURE SAMPLING

EMERGENCY RESPONSE

CONDUCT PPE ASSESSMENTS

IDENTIFY

ASSESS

CONTROL

MONITOR

PROVIDE SAFETY RECOMMENDATIONS

REVIEW NEW LAB PROCEDURES

CONDUCT HAZARD ASSESSMENTS
Without procedure assessments, tragic accidents can happen.

- Splashed on clothes
- 2nd and 3rd degree burns
- Died 18 days later
Policy Elaboration

While every research and teaching laboratory may have differing specific requirements for what is needed to ensure a healthy and safe working and learning environment, the University acknowledges that there are some requirements common to all. The health and safety requirements for all laboratories must include these general requirements:

1. Adequate training and supervision of persons working in laboratory spaces
2. Initial and periodic risk assessments, inspections, and corrective action planning
3. Provision of personal protective equipment, as applicable, to those conducting activities in laboratories
4. Established requirements for procuring, using, transporting and disposing of potentially hazardous materials and energy, as applicable
5. Established requirements for responding to incidents and emergencies, and
6. Clearly assigned roles and responsibilities.
Safety Training is required to be completed before you work in any UVM lab

### UVM Lab Safety Training Courses

<table>
<thead>
<tr>
<th>Name of Training</th>
<th>Required By:</th>
<th>When</th>
<th>When To Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Safety Roles and Responsibilities (online course)</td>
<td>All lab personnel</td>
<td>before working in lab</td>
<td>once or as directed by LSO</td>
</tr>
<tr>
<td>Chemical Safety in the Laboratory (online course)</td>
<td>All lab personnel</td>
<td>before working in lab</td>
<td>once or as directed by LSO</td>
</tr>
<tr>
<td>Laboratory Chemical Waste Disposal (online course)</td>
<td>All lab personnel</td>
<td>before working in lab</td>
<td>once or as directed by LSO</td>
</tr>
<tr>
<td>Laboratory Ventilation and Chemical Fume Hoods (online)</td>
<td>All lab personnel</td>
<td>before working in lab</td>
<td>once or as directed by LSO</td>
</tr>
</tbody>
</table>

### Basic Biosafety Training

Every UVM lab worker handling biological agents is required to complete the first three trainings in this orange section.

Anyone working in a lab designated BSL-2 must complete Biosafety for Work at BSL-2 Containment training.

Anyone at risk for being in contact with blood, tissues, primary cell lines or other potentially infectious material must complete Safety Around Bloodborne Pathogens training.

<table>
<thead>
<tr>
<th>Basic Laboratory Biosafety (online)</th>
<th>All Lab personnel using any biological agents</th>
<th>before working in lab</th>
<th>once or as directed by BSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe Use of Biosafety Cabinets (on-line)</td>
<td>All Lab personnel using risk group 2 biological agents at BSL-2 containment</td>
<td>before working in lab</td>
<td>once or as directed by BSO</td>
</tr>
<tr>
<td>Biowaste Management Procedures (on-line)</td>
<td>All Lab personnel using biological agents</td>
<td>before working in lab</td>
<td>once or as directed by BSO</td>
</tr>
<tr>
<td>Biosafety for Work at BSL-2 Containment Level (on-line)</td>
<td>Anyone working in a BSL2 designated lab, using risk group 2 or 3 agents, such as any human derived materials (e.g., cell lines, tissues and organs) and biotoxins</td>
<td>before working in lab</td>
<td>annually, as directed by BSO</td>
</tr>
</tbody>
</table>

Workers at risk for contact with
CEMS expects basic lab safety practices to be followed
Different procedures require different controls.
Let us conduct a hazard assessment with you.
Biological Safety

Introduction to Biological Safety

Biological safety or biosafety is the application of knowledge, techniques and equipment to prevent personal, laboratory and environmental exposure to potentially infectious agents or biohazards. Biosafety defines the containment conditions and work practices under which infectious agents can be safely manipulated.

Biohazard

Infectious or etiologic (disease causing) agents, potentially infectious materials, certain toxins and other hazardous biological materials are included in the definition of a biohazard.

Biohazardous agents may include but are not limited to: Certain bacteria, fungi, viruses, rickettsiae, chlamydiae, parasites, recombinant products, allergens, cultured human or animal cells.

The links below will take you to webpages containing detailed information on specific biohazardous agents and safety precautions.
Chemical Waste Management

Chemical waste may include:
- old and/or expired chemicals,
- chemical waste solutions, or
- debris contaminated with chemicals

UVM is committed to managing its chemical waste in a way that prevents release to the environment. This means that sink disposal of hazardous chemicals at UVM must be pre-approved.

Chemical liquids or solutions disposed of down a UVM drain go directly to Burlington's wastewater treatment facility and eventually discharged into Lake Champlain. To protect this area resource, laboratory personnel are prohibited from disposing of the following materials down any UVM drain.

Sink or drain disposal of any chemical solutions must be pre-approved by Risk Management & Safety by submitting this online Sink Disposal Request Form.
Where Does UVM Chemical Waste Go?

We pick up waste from your lab

Labpack it Per DOT

Stored until it goes to end disposal

Bulked into 55-gal drums

Satellite storage

We pick up waste from your lab

Labpack it Per DOT

Stored until it goes to end disposal

Bulked into 55-gal drums

Satellite storage
Chemical Waste managed/stored @ UVM Environmental Safety Facility
667 Spear Street

COME TAKE A TOUR!
We collaborate with Marsh Life Science stockroom to sell lab supplies

Order through "CHEMSOURCE"

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone ACS Reag</td>
<td>4 literal</td>
<td>62.00</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>4 literal</td>
<td>175.00</td>
</tr>
<tr>
<td>Bieman Lab Only - Perchloric Acid</td>
<td>500 ml</td>
<td>1.00</td>
</tr>
<tr>
<td>Bieman Lab Only - Perchloric Acid</td>
<td>2.5 literal</td>
<td>1.00</td>
</tr>
<tr>
<td>Ethyl Alcohol (190 proof)</td>
<td>1 gallon</td>
<td>15.40</td>
</tr>
<tr>
<td>Ethyl Alcohol (190 proof)</td>
<td>5 gallon</td>
<td>68.50</td>
</tr>
<tr>
<td>Ethyl Alcohol (200 proof)</td>
<td>1 pint</td>
<td>2.40</td>
</tr>
<tr>
<td>Ethyl Alcohol (200 proof)</td>
<td>1 gallon</td>
<td>16.00</td>
</tr>
<tr>
<td>Ethyl Alcohol (200 proof)</td>
<td>5 gallon</td>
<td>70.00</td>
</tr>
<tr>
<td>Ethyl Alcohol, Sigma, absolute, 200 proof</td>
<td>500 ml</td>
<td>60.00</td>
</tr>
<tr>
<td>Methanol, anhydrous GR</td>
<td>500 ml</td>
<td>18.25</td>
</tr>
<tr>
<td>Methanol, anhydrous GR</td>
<td>4 literal</td>
<td>42.00</td>
</tr>
<tr>
<td>Methanol, HPLC</td>
<td>4 literal</td>
<td>40.50</td>
</tr>
</tbody>
</table>
Lab Supplies can be purchased at two Campus Stockrooms:

1) Marsh Life Science Building

2) STEM: Discovery Building Chemistry Dept 2nd floor
## Vendor Contracts and Pricing Agreements

**UVM PURCHASING SERVICES**

<table>
<thead>
<tr>
<th>Service</th>
<th>Agreement Details</th>
<th>Mandated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas cylinders rentals/leases, gases purchases</td>
<td>Effective through June 30, 2019 Airgas</td>
<td>Mandated</td>
</tr>
<tr>
<td>Scientific/Laboratory Equipment and Supplies</td>
<td>Primary vendor through October 31, 2020 Thermo Fisher Scientific</td>
<td>Mandated</td>
</tr>
</tbody>
</table>
We partner with **UVM Recycling** to collect and properly dispose of “Universal Waste”.

Assorted Batteries
Instrumentation and Technical Services

The Instrumentation and Technical Services (ITS) department at the University of Vermont serves as the academic umbrella organization for two groups that provide technology services to the UVM community, healthcare providers, and Vermont emerging technology companies:

- Instrumentation and Model Facility (IMF)
- Technical Services Partnership (TSP)

As a department within UVM’s Office of Research and Graduate Studies, ITS supports the University’s research, educational, and outreach missions. ITS oversees the activities of IMF and TSP while leveraging shared support personnel, executive staff, and facilities. With a mission to provide quality, cost-effective technology services, ITS departments provide custom instrumentation, comprehensive medical equipment management services, responsive technology support, and specialized education to clients.

IMF Instrumentation & Model Facility

For design and fabrication of custom instruments and 3D models.

For over forty years, the Instrumentation & Model Facility (IMF) has been the University of Vermont’s centralized source for custom instrumentation design, manufacturing, and fabrication.

TSP Technical Services Partnership

For medical technology management and services.

UVM’s Technical Services Partnership (TSP) provides safe and cost-effective medical equipment management, service, education, and consulting to healthcare.

Quick Links

- Video on Instrumentation & Model Facility services
- Emergency after hours medical equipment service
- Printer, AV and office equipment repair
- Private practice services
We work closely with PPD and FDC

Physical Plant: DAVIS ZONE

Service Operations
SOS
656-2560, press 1

For non-emergency but critical service needs
Hands-on Fire Extinguisher Training
(30 minutes)

- Tuesday, July 18, 2017 at 10:30 AM
  (Back of Jeffords Hall by Stafford Greenhouse Loading Dock)

- Tuesday, August 08, 2017 at 10:30 AM
  (Back of Jeffords Hall by Stafford Greenhouse Loading Dock)

- Tuesday, September 19, 2017 at 10:30 AM
  (Back of Jeffords Hall by Stafford Greenhouse Loading Dock)
Summary: We provide lab support so you can keep working!
Welcome to UVM!

...where safety is everyone’s responsibility.

Questions or concerns: safety@uvm.edu uvm.edu/safety
Access

Graduate Student Office Access & Keys – Samantha Williams

Lab Access – Department Administrative Assistant

• Both you and your faculty advisor will need to sign the Key Request Form.

• There is now a $20 per key deposit required. Once this is completed, you will receive a key.

If you have an undergrad working with you on a project and they require lab access, it’s required that an email from your advisor be sent to the Administrative Assistant in your department explaining why and to which room.

When you no longer need a key, please return it to whomever assigned it and you will receive your deposit back.

It is against our key policy to give your key to anyone.
Building Access

For building access after hours, (which is after 10pm and before 7am M-F and 24/7 on the weekends), please contact Samantha Williams (office access) or the appropriate department Administrative Assistant (lab access) with your name, email, student ID # and phone number. We will complete a form and fax over to Building Services. It could take several days to process.

If you need access to other buildings (Discovery, COM etc.), we can work with you on this but its not guaranteed you will receive access.
Office Space Requirements

If you hold office hours, please post them on your door.

Each office suite is required to post desk assignments with name, degree (MS or PhD), major and advisor outside of office. Provide a copy to Samantha Williams.

Please e-mail your Department Administrative Assistant and Samantha Williams with your cell phone number so we can reach you in the case of emergencies or deliveries.

(Sam will send an e-mail reminder next week!)
General Office Supplies/Equipment

Please check with the Administrative Assistant in your program, supplies are in different locations. These supplies are for the use of Faculty, funded graduate students and staff only.

Our copy machine is for the use of Faculty, funded grad students, staff and undergraduate teaching assistants only. Please ask the Administrative Assistant in your program for locations.

You will need a code for the copy machines, please talk with the Administrative Assistant in your program.
Getting Paid

Pay days are the 15th and 30th of the month. If these days fall on a weekend, you will be paid the Friday before.

- Your first few checks could be paper checks, however, Payroll requires all employees to have their check direct deposited. You should set this up in Peoplesoft.

If you are receiving funding as a GRA or GTA, you will need to complete the following forms BEFORE you can get paid:

- Direct Deposit (on-line only)
- Employee Data Form
- I-9 (will need either a passport or 2 forms of ID, one must be a picture ID)
- W-4 (both State and Federal)
- International students: If you did not get your Social Security Number and complete all HR forms during International Orientation, please contact OIE.
Purchases

Each program manages purchases differently – Please contact your Department Administrative Assistant for more information
Time Management

With your neighbor, discuss:

- What worked for you in your BS or MS program?
- What new challenges do you anticipate in your Graduate Studies?
What do we know?

We need to:

- Sleep
- Eat
- Hygiene Routine
- Go to classes
- Study
- Maintain Relationships
- Grocery Shop
- Laundry & Housework
- Work 20 hours/week (Full-Time Assistantship)
- Research
- Travel to/from Campus
- Pay Bills
Time Management

• Create a schedule for yourself – Use a planner that allows you to plan your whole day out
• Share apartment/household responsibilities
• Communicate your needs (Roommates, Friends, Spouses, Faculty etc.)
• Prioritize
• Control your environments to make them productive spaces
  • What would make your spaces productive? Office, Home, Study Space, Lab etc.
• Make SMART Goals (Specific, Measurable, Attainable, Realistic and Timely)
<table>
<thead>
<tr>
<th>Time</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 AM</td>
<td>EE 100 Lab</td>
<td>Grade 3 labs</td>
<td>Study Group</td>
<td>Office Hour</td>
<td>Laundry &amp; Dishes</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>EE 100 Lab</td>
<td>Grade 3 labs</td>
<td>Study Group</td>
<td>Office Hour</td>
<td>Laundry &amp; Dishes</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Office Hour</td>
<td>Study for EE 395</td>
<td>EE 100 Lab</td>
<td>Office Hour</td>
<td>Laundry &amp; Dishes</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Office Hour</td>
<td>Study for EE 395</td>
<td>EE 100 Lab</td>
<td>Lunch</td>
<td>Laundry &amp; Dishes</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Lunch w/Jane</td>
<td>Study for EE 395</td>
<td>EE 100 Lab</td>
<td>Two pages of literature review</td>
<td>Laundry &amp; Dishes</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Swim @ PFG</td>
<td>Study for EE 395</td>
<td>EE 100 Lab</td>
<td>Two pages of literature review</td>
<td>Travel to Votey</td>
</tr>
</tbody>
</table>
Questions?! 

Thanks for your time! We wish you the best of luck as you start your graduate program here at UVM!