Welcome New Engineering Grad Students!

9:00   Registration
9:15   Welcome to the College of Engineering
11:00  Welcome from the Associate Dean
11:15  DECS – College Computer Support
11:30  Safety and Evacuation Procedures
12:00  Welcome Picnic
Welcome! We are glad you’ve chosen to join the Spartan Nation, and we look forward to working with you during your graduate degree program. This orientation provides an overview of the College of Engineering and highlights the College-level requirements you need to complete as part of your graduate program.
The MSU College of Engineering is a big place! We have nearly 6,000 undergraduates and more than 850 graduate students, served by 225 faculty and numerous instructors, advisors and staff members. MSU offers graduate degrees (MS and PhD) in 11 areas of Engineering, housed across 9 different departments.
The College of Engineering has 8 different departments, each with its own acronyms.

- BAE: Biosystems & Agricultural Engineering
- BME: Biomedical Engineering
- CEE: Civil & Environmental Engineering
- CHEMS: Chemical Engineering & Materials Science
- CMSE: Computational Mathematics, Science & Engineering
- CSE: Computer Science & Engineering
- ECE: Electrical & Computer Engineering
- ME: Mechanical Engineering
Our Engineering Graduate Studies team includes graduate program directors and graduate secretaries in each department. In addition, the Dean’s office includes our Associate Dean for Graduate Studies and Research (ADGRS), our Assistant Dean for Graduate Student Services, the Graduate Secretary for the College, and an Assistant Director for Graduate Recruiting and Programming. You can find contact information for the graduate programs team here: https://www.eegr.msu.edu/graduate/contacts
You probably have lots of questions about which classes to take, how to get started in research, and what you need to do in order to earn your degree. There are many resources to assist you, both in the Department and at the College level.
As a graduate student, you’re responsible for understanding the requirements of your degree program. It is important that you find your current graduate student handbook and read it carefully. It will outline the specific courses you need to take and any departmental requirements for graduate students (such as attending research seminars or participating in workshops hosted by the Graduate School). Print and/or save a copy of the current handbook! These rules do evolve over time, and as a current graduate student you’re bound by the requirements at the time that you began your current degree program – if new rules come into effect before you graduate, you’ll have the option to follow the current version or switch to the new regulations.

You will also be assigned to a faculty advisor, who is available to help you select courses and explore research options (if you are pursuing a thesis-based degree program). Faculty advisors may not always know the details of the current graduate handbook, so be certain that the advice you receive matches the degree requirements outlined in your handbook. You are responsible for understanding your degree requirements and making adequate progress to meet them. Your advisor will also be the faculty who reviews your annual report, which we will go over later in this presentation.
In your department, the graduate secretary is the primary source of logistical support for graduate students. The graduate secretaries help to process graduate applications, help arrange visits by prospective students, and process the electronic paperwork for current graduate students to be appointed as teaching (TA) or research (RA) assistants. The graduate secretaries also help to maintain the academic files for current students, including tracking items like students’ annual reports, graduate program plans, and degree completion.

The graduate program director in each department is a faculty member who helps to coordinate the overall application and admission process for new graduate students. Typically, the graduate program director oversees the review of applicants and the admission of new students; provides an orientation and general advising for new graduate students; and coordinates the process of matching graduate students with funding resources and with faculty advisers. The graduate program directors coordinate across the College to share best practices and are the primary liaison between the department and the College for graduate program matters, like initiating waiver requests for special circumstances.
Within the College, the Associate Dean for Research and Graduate Studies (ADRGS) is a liaison between the College of Engineering and the MSU Graduate School, and oversees all graduate matters within the College, including within the Cabinet and Chairs’ meetings. The ADRGS is part of the formal problem-solving process for graduate matters within the College.

The Assistant Dean for Graduate Student Services supports the day-to-day operations of graduate programs within the College, and serves as a liaison with the MSU Graduate School. The Assistant Dean is the primary connection between the department graduate program directors and the College; reviews waiver requests from departments; allocates funding from the Graduate School and manages College funding programs (like the Engineering Distinguished Scholars for recruiting new students); and supports the College-level review and approvals for graduate curriculum changes, in conjunction with the Engineering Graduate Studies Committee. The Assistant Dean provides support for graduate student recruitment activities (within the College and departments) and oversees graduate student professional development efforts within the College, including the annual Engineering Graduate Research Symposium. The Assistant Dean manages the EnSURE (Engineering Summer Undergraduate Research Experience) program, as well as various other initiatives related to graduate studies.
The College’s Graduate Secretary provides College-level review and approval for all graduate student appointments and fellowships. The College Graduate Secretary also maintains close communications with the departmental graduate secretaries.

The part-time Assistant Director for Graduate Recruiting & Programming coordinates the professional development calendar for graduate students, organizes the monthly Graduate Women’s Group meetings, assists with College-level recruiting activities, and supervises the College Fellow Program, which provides opportunities for graduate students to build leadership skills.
Katy Luchini Colbry, Ph.D.

A little about me...
- BS (computer science) and BA (political theory) from Michigan State University
- MSE and PhD (computer science) from University of Michigan

Research
- Dissertation focused on Educational Technology and handheld devices
- Current research focuses on Engineering Education, graduate student success, and undergraduate research experiences
“Den Mother” or “Big Sister”

› Email is the best way to reach me (colbryka@msu.edu)

› Office: 2420 EB
  (2nd floor, above Sparty’s)
  • Drop by for snacks, coffee, tea or hot chocolate!

› Schedule appointments online (https://colbryka.youcanbook.me)
Three-Word Introductions

- Find someone you don’t know
- Take 5 minutes to get to know something about each other
- Introduce your partner to the group in 3 words

1. First Name
2. a verb
3. a noun or adverb

Example:
- Tom programs games
- Mohammed runs 5Ks
- Dena cooks gourmet
Rules & Regulations

Department
College
University
All graduate students in the College of Engineering must complete two requirements EACH YEAR: (1) responsible conduct of research training, and (2) an annual report.
RCR
(Responsible Conduct of Research)
All graduate students in the College of Engineering must complete two requirements EACH YEAR: (1) responsible conduct of research training, and (2) an annual report.
Responsible Conduct of Research

› What is responsible conduct?
  ◦ Striving for honesty, accuracy, objectivity, fairness

› Why is RCR important?
  ◦ Establishes your credibility as a researcher
  ◦ Establishes a clear “path” of data
  ◦ Enables further research
  ◦ Contributes to the field of research
  ◦ Meets the expectations of public trust
  ◦ Upholds the traditions, values, and ethics of the community of scholars

Responsible Conduct of Research (RCR) means working in an ethical manner, and striving for honesty, accuracy, objectivity and fairness in all your work. RCR is important to your career, to MSU, and to the world as a whole. Even if you are not pursuing research as a primary focus of your graduate program, the very nature of graduate studies means that you will be working with research data throughout your studies.
What Training is Required?

- MSU issued updated guidelines 8/29/16
  - Mixture of online and in-person training
  - Required of EVERY graduate student
  - Must be completed before graduation

- The College of Engineering has a new, approved plan as of 1/1/2017
  - There is an “old” plan too, for students who started in Fall 2016 or BEFORE
## New RCR Requirements
(for College of Engineering graduate students starting on or after January 1, 2017)

<table>
<thead>
<tr>
<th>Master’s Degree</th>
<th>Doctoral Degree</th>
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<tr>
<td><strong>“Plan B” (Non Thesis)</strong></td>
<td><strong>Doctoral Degree</strong></td>
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<td>- “First Year Requirements”</td>
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<td>- “Discussion-Based Training”</td>
<td>- “Second Year Requirements”</td>
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<tr>
<td><strong>“Plan A” (Thesis)</strong></td>
<td>- “Discussion-Based Training”</td>
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<td>- “First Year Requirements”</td>
<td>- “Annual Refresher Training”</td>
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<tr>
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The “First Year Requirements” for RCR training are completed online at citiprogram.org. Complete instructions are available here: https://www.egr.msu.edu/graduate/rcr
“Second Year” Requirements

- Complete 3 online modules from the following list:
  - Collaborative Research (citiprogram.org)
  - Conflicts of Interest (citiprogram.org)
  - Data Management (citiprogram.org)
  - Financial Responsibility (citiprogram.org)
  - Mentoring (citiprogram.org)
  - Peer Review (citiprogram.org)
  - IACUC Tutorial for Animal Care Training (http://train.ORA.msu.edu)
  - Human Research Protection/IRB Certification (http://train.ORA.msu.edu)
  - Rigor and Reproducibility Course (in production)

- Due by your second December 31 at MSU
“Discussion-Based” Training

- Complete a **minimum of 6 hours** of discussion-based training
  - May be completed at any point, including during the first two years
  - **Complete this requirement early** to avoid delays in graduation

- A variety of discussion-based training options available at MSU
  - RCR workshops offered by the Graduate School
  - Some seminars offered by the College of Engineering
  - Some coursework offered within departments
  - Individual or group conversations about RCR with research advisor(s)

- Check your graduate handbook for department-specific expectations for the “Discussion-Based Training” requirements
  - If a department does not list specific “Discussion-Based Training” requirements in its graduate handbook(s), then students in that department may select any discussion-based RCR training that is approved by their research adviser
“Annual Refresher” Training

- Starting on January 1 of their third year of graduate studies, all PhD students must complete 3 hours of RCR training each year
  - Annual refresher training may be online or discussion-based
    - If you choose discussion-based training, you MAY “double count” the same training for both annual refresher requirements and part of the 6 hours of discussion-based training required prior to graduation.
    - If you choose online training, you must complete modules beyond the 7 that are specified in years 1 and 2.

- This annual refresher training must be completed between January 1 and December 31 each year, starting in the third year of the PhD student’s program.
NEW RCR (Responsible Conduct of Research) Graduate Training Requirements
(For College of Engineering graduate students starting January 1, 2010 or later)

Is this your first year of graduate studies?
Yes → Complete "First Year Requirements" online by December 31
No → Is this your second year of graduate studies?
Yes → Are you a MS "Plan B" (non-thesis) student?
No → Complete "Second Year Requirements" online by December 31
Yes → Have you completed a minimum of 6 hours of "Discussion-Based Training"?
No → Complete some or all of the "Discussion-Based Training" Requirements
Yes → Have you logged all of your RCR training hours online at www.egr.msu.edu/rcr?
No → Complete the "Annual Refresher Training"
Yes → Congratulations! You've completed RCR training until next year. Remember, you must complete training each calendar year (January through December 31). Failure to complete and log your training will result in a hold being placed on your account.
Graduate Student Annual Reports
Grad Student Annual Reports

- All grad students must submit an annual report
  - Documents PRIOR year’s activities
  - Outlines academic and career goals (and progress)
  - Identifies challenges and areas for development

- Faculty adviser will provide feedback
  - Written feedback within the report

- Students review the feedback, follow up if needed, then “verify” that they accept the report
What are the Deadlines?

- January 31
  - Students enter their information in the online report
  - Students must click to notify their adviser when done!

- February
  - Advisers provide written feedback in online report

- March 1
  - Students review feedback and follow up as needed
  - Students must verify report completion online

- Failure to meet March 1 deadline results in account hold
Why is this Valuable?

- Opportunity to communicate with your adviser
  - Written agreement about goals, progress, next steps
- Review and update your CV
- Review/update your academic, personal goals
- Fulfills University requirements (GSRR)
- Mirrors annual reporting requirements for faculty (and many industries!)
Resources and Links

Where to find the details
Who to ask for help
Engineering Graduate Studies

www.egr.msu.edu/graduate
Information for Current Students

Michigan State University offers M.S. and Ph.D. degrees in 11 areas of Engineering, spread across 6 departments. Last year, 705 graduate students enrolled in these programs (19% of the doctoral level) and we awarded 15 Ph.D. degrees and 75 M.S. degrees to our computer science's, software and systems, electrical, and...
Certification in College Teaching

- Certification available to PhD students
  - Any graduate student may enroll in coursework
  - Many workshops open to all grad students
  - Do not have to complete entire program

- Provides additional experience in teaching
  - Professional development workshops
  - Graduate course in teaching Engineering
  - Mentored teaching experience
Funding Opportunities

There are several options available for our grad students to consider when planning how to finance their education. Learn about the different types of financial support offered to graduate students:

- Graduate Science & Engineering Fellowship
- Graduate School Funding
- Graduate School Fellowships
- MSU Office of Financial Aid
- Student Employment
- MSU Office of International Students and Scholars
- Excellence in Science Award
- Need-Based Grants
- DFR, G & S, and EFR information
Funding Resources

› Teaching Assistantship
  ◦ Handled through department offering position
  ◦ Nearly all have been assigned for Spring 2018
  ◦ Explore alternatives in other departments/colleges

› Research Assistantships
  ◦ Handled through faculty offering position
  ◦ Talk to your graduate program director before approaching faculty—every department is different

› Pursue External Fellowships & Awards
External Fellowships

- Extensive listing of graduate funding sources
  - MSU Libraries List
  - College of Engineering List

- Check the requirements
  - Discipline and degree
  - Citizenship, gender, ethnicity
  - Progress in your graduate program
  - Internships, scholarships, fellowships
Awards

Graduate Student Award Winners

Fitch H. Dohl Award for Outstanding PhD Research
Outstanding undergraduate student
Engineering Graduate Research Symposium Poster Awards
Reports and Forms
Resources
EGR Grad Student Seminars

- “Lunch & Learn”
  - MSU resources and requirements
  - Graduate Student Health & Wellness
  - Career Information

- Sloan Community
  - Students from diverse backgrounds

- Graduate Women
Department Contacts

- Faculty Adviser
  - Your primary resource for academic questions
  - Helps develop program plan, research project
  - New students are typically assigned to an adviser

- Department Graduate Secretary
  - Your primary resource for logistical questions
  - Helps manage payroll, assistantships, etc.

- Graduate Program Director
  - Oversees graduate program within department
  - A secondary resource for academics and logistics
Other Contacts

- **Department Chairperson**
  - Available if your adviser and graduate program director cannot help you resolve the concern

- **College Associate Dean**
  - Available if you cannot resolve the concern after consulting your adviser, graduate program director, and department chairperson

- **Katy Colbry** ([colbryka@msu.edu](mailto:colbryka@msu.edu), 2420 EB)
  - If you’re not sure who to ask or what options are available, or to “practice” a conversation in advance
Parking Passes

- Graduate Assistants (TA or RA)
  - Eligible to purchase a pass (about $120/semester)
  - Permits can be purchased online or in person

- Graduate Fellowships
  - Eligible to purchase a permit for semester(s) of your fellowship if you receive $1,000+ from MSU
  - National/international fellowships may also be eligible; contact Melissa Del Rio in Grad School

- Other Options
  - Commuter Permit
  - Special Parking application (police.msu.edu)
  - Visitor (pay) parking
Frequently Asked Questions

- Accessing MSU and EGR email
- Accessing STUINFO and enrollment
- Student ID cards
- Bus Passes
- Bike permits
Other Important Stuff to Know

- BE CAREFUL walking, biking and driving on campus – particularly in the first 2 weeks!
What to Expect this Year

Making a Successful Transition to Graduate Studies at MSU
Remember being a freshman?

- Some people in high school are smart, but most people in college are smart
- You have to work harder to get good grades
- You’re far from home, and far from friends
- You have to find a new pattern to balance academics, work and fun
- You have to figure out how to be successful in a new environment, and do it quickly
Now you’re a “Fresh-Grad”

- Graduate students are very smart
  - But, so are you. We picked you to be here!

- Graduate classes are hard, and move fast
  - But faculty and peers are helpful – just ask!

- You need to develop a supportive community
  - There are lots of activities and resources; reach out.
Take Care of Yourself

- Olin Health Center
  - 3 visits / academic year completely FREE
  - Other services covered by health insurance
  - All services are confidential

- MSU Counseling Center
  - General health and wellness activities
  - Support groups specifically for grad students
  - Individual and small group counseling, as needed
  - All services are confidential
Have some fun!

- Hundreds of student groups on campus
  - Sports, religion, hobbies, nature, etc.
- MSU Intramural facilities
  - Personal fitness (classes, equipment, pools, etc.)
- Participate in department and college events

- Wisdom from a successful student:
  - Plan small and large “rewards” to keep yourself motivated – a favorite TV show, music, activity, etc.
Student accounts are managed by enrollment data. Students must be enrolled in engineering classes or enrolled as an engineering major. Updated each semester.
DECS Support Office

- For all questions and requests visit www.egr.msu.edu/decs or 1325EB, email support@egr.msu.edu or call (517) 353-8891.

- The Support Office is open:
  - *Fall & Spring:*
    - Monday – Thursday: 0am to 9pm
    - Friday: 8am to 5pm
    - Saturday: closed
    - Sunday: 4pm to 6pm
  - *Summer & Breaks:*
    - Monday – Friday: 8am to 5pm

*The Support Office will be closed during university holidays.*
DECS has implemented a new feature to provide the individual with more control over their account. From the main DECS web page, click on either of the My Accounts links.
DECS Services

DECS staff provide support for:

- UNIX
- Windows and Mac OS
- Network
- Hardware
- Software
- Purchases
- Repairs
- Mobile Devices
- Web and Application Development

Contact DECS staff by emailing support@egr.msu.edu or calling (517) 353-8991.
DECS Services
Faculty & students have several separate areas of storage space available:

- Home directories, the M: drive
- Research space on a separate file system, the R: drive
- Web space
- Course space, which is removed at the end of each semester
- OwnCloud for collaboration outside the College of Engineering (this should replace Dropbox, OneDrive, Google Drive, etc.)
- Remote Access is available
Backups & Storage

• DECS provides high speed, scalable and reliable network storage.
  • Provides file snapshots as far back as three weeks for home and research providing immediate retrieval of deleted data.

• Tape back-ups are performed regularly.
• DECS can raise your storage limits or direct you to appropriate file storage locations based on your needs.
Networks in Engineering Buildings

A Web-based registration system is used to provide quick and automatic access to wired or wireless networks.

dhcp.egr.msu.edu
Remote Access

- Remote Desktop Services – access the DECS Public Computer Lab Windows environment.
- SSH and SFTP access is available via scully.egr.msu.edu
- Linux compute servers – longer compute jobs requiring more resources/run time
- Remote Desktop Gateway
Mail Services

- Mail aliases for groups, as well as mailing lists for sending email to groups are available.

- Engineering email has no limits or quotas. Don’t believe email telling you otherwise.

- If you receive an e-mail requesting you provide your password, this is a phishing attempt. Do NOT respond! DECS and MSU will never ask for your password.
Short term checkout for class periods or conference use, project demonstration.
Reservation made thru a DECS web form
Software

- DECS will install and manage any software application that is needed for research or instruction whether it be on the UNIX compute cluster or PC labs.
  - Allow four weeks for installation and testing before production.
- Through Microsoft Imagine (formerly Dreamspark and Microsoft Developers Network Academic Alliance or MSDNAA) software is available to all faculty and students (Windows, Visual Studio, etc.).
  - The licensing and information is available at: [https://www.egr.msu.edu/decs/help-support/how-to/microsoft-imagine](https://www.egr.msu.edu/decs/help-support/how-to/microsoft-imagine)
  - Microsoft Office is available campus-wide
- Matlab is available campus-wide.

6 PC labs 20 to 60 seats, reserved for classes via web form
Managing Your Own Systems

- Please be certain your systems are updated and patched regularly.

- Install and run anti-virus (DECS can provide)

- Bit torrent or Hola VPN are insecure. Avoid and uninstall.

- When a system is infected or poses a risk to other systems on the network, it will be blocked from the network.
Visit DECS for all of your technology support needs!

Contact DECS at:
1325 Engineering Building
(517) 353-8891
www.egr.msu.edu/decs
support@egr.msu.edu
GRADUATE STUDENT ORIENTATION

EMERGENCY SITUATIONS

Jeff Curtiss
Facilities Coordinator
College of Engineering

MSU Police Emergency Notification - www.police.msu.edu
Building Fire Alarm - GET OUTSIDE!!
Outside Sirens - GET INSIDE!!
Overhead PA System - LISTEN FOR INSTRUCTIONS
Phone Calls
Word of Mouth

THEN WHAT??????

How Do I know there IS an Emergency?
Emergency Postings

11” X 17” poster by each door

Floor plan Maps

Look for These BEFORE Needing to Exit
If you are announcing the fire, “Pull the Fire Alarm Switch” at the exit door.

Going to your Rally Site!

Leaving the Building

Rally Sites
Don’t try to be a Hero. Get them to a stairwell and go find a “First Responder”.

Helping the Disabled

Just No, Nyet, Nada

Elevators in a Fire Emergency
Why would we stay inside?

Two Reasons:

SEEKING SHELTER FROM WEATHER
SECURE IN PLACE

What’s the difference?
Criminal Activity

Secure in Place

House of Cards and Unintended Consequences

Bottom Line
If you Learn, Stay Safe and Graduate, then life is good!
Welcome to MSU!

MSU Office of
Environmental Health and Safety

Don’t start a fire

Credit: New Jersey Herald
• Ignition sources
• Papers and combustibles
• Electrical overheating
• Flammable liquids
• Traveling vapors
• Reactive chemistry
Go with the Cheap and Easy

- Safety Goggles or Glasses
- Lab Coat or Long Sleeves
- Gloves
- Long Pants
- Closed-toe Shoes

Credit: UVA EHS
Say no to Cookbook Chemistry

A protocol for studying the kinetics of RNA within cultured cells: application to ribosomal RNA

Marc Thiery1, Françoise Lumay1, Nicolas Theken1, Aurere Chatron-Collet2, Nathalie Lahut1, Hélène Boubchir1, 2 & Dominique Pistor1

Laboratoire de Biochimie moléculaire et cellulaire, Université de Liège, Institut d’Anatomie (Hb.I), 41 avenue des Déportés, 4000 Liège, Belgium. 2EMI-CRIB, Université de Rennes 1, Campus de St-Malo, 35708 Rennes Cedex, France. Laboratoire de Biologie cellulaire, Université de Liège, Institut d’Anatomie (Hb.I), 41 avenue des Déportés, 4000 Liège, Belgium, 1

Published online on 29 December 2006. doi:10.1038/nprot.2006.399

This protocol describes a non-invasive method for high-resolution investigation of the kinetics of RNA within the cell. This involves the incorporation of transgene-derived 5'-triphosphate into RNA of living cells by transfection followed by immunocytochemical detection of BrRNA. The use of the same antibody labeled either with fluorophores or with gold particles revealed the threedimensional organization of sites containing labeled RNA or their relative localization by using confocal and ultrastructural microscopy, respectively. Comparison of these threedimensional reconstructions obtained from the series of optical sections and serial sections was extremely fruitful to describe the topological and spatial dynamics of RNA from their synthesis at the ribosomes to the cytoplasm. Combined with immunolocalization of proteins involved in different nuclear activities and with highly resolved three-dimensional visualizations of the labelling, this method should also provide a significant contribution to our understanding of the functional, subcellular organization of the cell nucleolus. The entire protocol can be completed in ~10 h.

MATERIALS

REAGENTS

- HeLa cells (LLC PROMOchem, ATCC, cat. no. CCL-2)
- Dulbecco’s modified Eagle medium ( Gibco-Invitrogen, cat. no. 41966)
- Fetal bovine serum (Gibco-Invitrogen, cat. no. 2012-06)
- 2-Aminopterin (Sigma-Aldrich, cat. no. 06422)
- Actinomycin D (Sigma-Aldrich, cat. no. 85625-4)
- Penicillin-streptomycin (Gibco-Invitrogen, cat. no. 15140)
- Fugene 6 transfection reagent (Roche Diagnostics, cat. no. 814 448)
- BrUTP (Sigma-Aldrich, cat. no. B-7166)
- NaCl (Sigma-Aldrich, cat. no. 5.7653)
- NaH2PO4 (Merck, cat. no. 6579)
- KCl (Merck, cat. no. 4872)
- Na2HPO4 (UCB, cat. no. 1769)
- Formaldehyde (20% [wt/vol], 5 ml ampoule, Ladd Research, cat. no. 20.295)
- Glutaraldehyde (70% [wt/vol], 2 ml ampoule, Ladd Research, cat. no. 20.100)
- Caution: Toxic (irritant, allergen, carcinogen)
- 0.5% (w/v) ethanol (Merck, cat. no. 1.00971.2500)
- Absolute ethanol (Merck, cat. no. 1.0098.1000)
- Dodecyl succinic anhydride (Ladd Research, cat. no. 21348)
- Methyl nicotinic hydrazide (MNA, Ladd research, cat. no. 21350)
- 2,4-Dimethylaminoazobenzene (DMA, Ladd Research, cat. no. 21370)
- LX 112 (Ladd Research, cat. no. 21310)
- Bovine serum albumin (BSA, Fraction V; Boehringer Mannheim, cat. no. 735108)
- Normal goat serum (Sigma-Aldrich, cat. no. G 9023)
- Normal sheep serum (Sigma-Aldrich, cat. no. S 3772)
- Methanol (Merck, cat. no. 1.0608.2500)
- Triton X-100 (Sigma-Aldrich, cat. no. 234729)
- Mouse monoclonal anti-bromodeoxyuridine antibody (100 μg ml⁻¹)
Be a good neighbor

No chemicals down the sink  No needles in the garbage
Accidents happen, don’t hide it!

- Here for your questions or concerns
- Assist you in finding the answer you need
- Get you the right protective equipment
- Advocate on your behalf
- Don’t have to give your name!
- 517-355-0153 business hours
- 517-355-2222 after hours
- 24/7/365