Fall 2019

Orientation to Graduate Studies and Research
Your first year checklist

- Complete Basic RCR Training (done today!)
- Pay your student bill and confirm enrollment for fall 2019 today (all students – including supported students). Consult with your advisor or graduate program director for proper course selection.
- Submit final official proof of previous degree(s)
- Get your HuskyCard (Michigan Tech ID) in the Library
- Complete EverFi’s Sexual Assault Prevention online course in support of a safe campus environment for all students – details on MyMichiganTech.
- Check MyMichiganTech regularly for additional checklist items, links to forms, your personalized Degree Completion Timeline, and to confirm receipt of items.
- Register and confirm enrollment for spring 2019 (required) and summer 2020 (optional).
- Select an advisor and submit the “Advisor and Committee Recommendation form” no later than spring 2020 to avoid a registration hold. [http://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/](http://www.mtu.edu/gradschool/policies-procedures/forms-deadlines/)
- Complete Advanced RCR training in spring 2020 or fall 2020.

Visit our website for all of our available resources.

[www.mtu.edu/gradschool](http://www.mtu.edu/gradschool)

Michigan Technological University is an Equal Opportunity Educational Institution/Equal Opportunity Employer, which includes providing equal opportunity for protected veterans and individuals with disabilities.
Complete all items on “Your first year checklist” in this book

- Check in with International Programs and Services (before classes start)
- Complete Life@Michigan Tech workshop (fall semester)
  - 7 one-hour required workshops designed to help new international undergraduate, transfer, exchange, and graduate students adjust to Michigan Tech’s academic and social community.
  - You will receive more information about registration by email prior to the start of classes.
  - Questions? Contact life@mtu.edu.

- Complete English Language Assessment at the Center for Teaching and Learning (fall semester)
  - Required for students whose first language is not English and who intend to be graduate teaching assistants.
  - The Center for Teaching and Learning offers free workshops through IGSC3 for all international graduate students interested in improving their language skills.

Visit our website for all of our available resources.

www.mtu.edu/gradschool

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Goals for Today

- Help you understand....
  - Expectations for your first semester
  - Expectations for your graduate career
  - Positive conflict management
- Introduce you to appropriate conduct for a researcher in the lab and classroom

The “Resolving Conflict” and “Setting Expectations” portions of orientation are adapted or used from materials developed by Michigan State.

Smart Start Seminar

- Wednesday, September 4th
  - 4-5pm, MUB Ballroom A
- Academic policies
- Academic support

A Time of Transition

- Welcome to graduate school!
- You are now apprentices in your field
- Faculty will have higher expectations of you and your work
- Graduate school is challenging and different in many ways from your undergraduate career
  - International students should note that courses are based on assignments through the whole semester, not just a final exam

What percentage of students complete their PhD within 10 years?

A. 20%
B. 40%
C. 60%
D. 80%
E. 100%

Why do Students Leave Graduate School?

A. Unmet expectations
B. Faculty-student relationships
C. Lack of departmental integration
D. Issues with funding
E. Personal reasons

Your First Semester

Develop plans for...

- ...your coursework
- ...your research
  - Determine what topics interest you the most
  - Identify potential faculty advisors
  - Schedule interview with potential advisors
- ...funding your education
  - GTA, GRA, External funding, loans
- ...your career
A faculty advisor generally provides guidance for…

- Academics
  - Courses to take
  - Teaching methods
- Research topic
  - Identify resources you may need
  - Provide constructive feedback on your results and presentation of your work
- Career
  - Identify potential sources of employment
  - Assist in networking at professional meetings

How do you select an advisor?

- Some programs will select an advisor for you – especially coursework only degrees
- Many factors can influence your decision
  - Availability of funding
  - Research topic
  - Management style
  - Other students in research group
  - Etc., etc., etc.!

What factor is most important to you in selecting an advisor?

- Availability of funding
- Research topic
- Management style
- Other students in research group
- Etc., etc., etc.!

You will need support beyond your advisor

- Other faculty and staff at Michigan Tech will help you complete your degree
  - Look beyond your department and draw on the collective experience available on campus
  - Take advantage of seminars and workshops offered on campus
  - Some projects are highly collaborative, and will involve the skills of many people
  - All research projects will be evaluated by a committee of graduate faculty

Why Does the Faculty/Student Relationship Matter?

- Relationship with your advisor and committee does not end with graduation
- Careers depend on good reference letters
- Faculty Power
  - Stipends
  - Work assignments
  - Resources
  - Advice

Setting Expectations

www.mtu.edu/gradschool/succeed
Setting Expectations

- Think about your expectations or goals for your education – what do you want to accomplish?
- What interests or values do you have?
  - Earning your degree
  - Spending time with family
  - Work-life balance
- How might your expectations and interests conflict with your advisor’s expectations and interests?
  - Who should serve on my committee?
  - What classes should I take?

What expectations do you have for your graduate education?

Sunny Skies – Discussion

- Identify the expectations of the student and advisor.
- Identify the people and interests.
  - Who are the people or groups that might be affected by the student’s actions?
  - What are their interests?
- Generate options for the student.

Advisor – Student Expectations

- You have expectations for your graduate career
  - The student in our video expected to have time to take a vacation during spring break
- Your advisor will have expectations for you
  - The advisor in our video expected the student to work during spring break
- Expectations can be either explicit or implicit

Explicit Expectations

- Explicit Expectations:
  - Clearly Stated (verbally or in written form)
  - Checked for understanding
  - Unilaterally or jointly set
- Explicit expectations can still cause conflict if you disagree with your advisor, but conflict may be dealt with in a positive way using the interest based approach.

Implicit Expectations

- Implicit Expectations
  - Not stated and rarely understood.
  - “What didn’t you understand about what I didn’t tell you?”
  - “What part of my silence didn’t you understand?”
- Implicit expectations can cause conflict between a student and advisor at an unknown point in the future.
Basic Expectations of a Student

- Perform work in a timely and responsible manner
  - If funded, treat your assistantship like a real job
- Asking questions when expectations or protocols are unclear
- Set expectations for their training
- Maintain good research records
- Follow policies that govern practices in field

Basic Expectations of an Advisor

- Provide training in research methods and standards for responsible conduct
- Setting goals for project
  - Managing staff time and equipment
- Setting criteria for and evaluating progress
- Setting an example by following proper research protocols
- Setting criteria for credit in publications

Basic Premise

- At some point in your graduate career, your expectations may conflict with your advisor’s expectations
- Conflict occurs when two or more people believe their actions, thoughts, or ideas are not compatible
  - One roommate wants to go on a ski trip; the other wants to go to Hawaii for a vacation
  - You want Dr. Smith on your committee; your advisor wants Dr. Roberts

More about conflict

- Conflict can be major or minor
  - The magnitude of the conflict can be a matter of perception. What may be very important to you may be less important to someone else.
- Conflict itself is neither good nor bad
  - It’s how conflict is handled that is good or bad

Basic Assumptions

- Many issues in graduate education are not negotiable (University policies, laws, etc.)
- The power differential between graduate students and faculty will always exist
- We should not expect 100% retention or completion
- Remember, conflict is not good or bad – handling it in a positive way is more important
How do we resolve conflict?

Resolving Conflict

- Identify the issue
  - An issue is the immediate question that needs to be answered
  - There may be more than one issue, but select one to start with
- Select a strategy to resolve the conflict
  - Avoidance, Accommodating, Positional, Interest-based
  - There is no right or wrong strategy

Options to Resolve Conflict

Options vs. Time: Decrease Over Time

Avoidance and Accommodating

- Avoidance
  - Maybe the problem will go away if I ignore it
- Accommodating
  - Let the other person have his or her way
- Common point with both strategies is that the conflict does not usually go away
- Not dealing with the conflict now can lead to problems or anger later

The Positional Approach to Resolving a Conflict

The Positional Approach

- Narrows options in the beginning to two positions
  - Neither position may be the best answer to the issue.
- May produce a winner and a loser or two losers!
  - Neither person gets exactly what they want
- May harm the relationship
Interest-Based Strategy

- Differs from all of the other strategies because it considers more than just you and the other person in the conflict.
- Many people or units may have a stake in resolving the conflict successfully.
- Considers the interests of all people or units that have a stake in the conflict – not just you and your advisor.

The Library

Collaboration on Assignments

- At Michigan Tech, it is not acceptable to collaborate (work together) on any assignment unless your instructor has given you permission.

Collaboration Scenario

- A class is given a take home assignment that may include both numerical and written components.
- Students are given written instructions stating that they may talk about any part of the project with anybody.
- Students must independently develop an answer and submit their own work.

The Interest-Based Approach

Evaluation

Part 1. Collaboration

Integrity in Academics and Research
Situation #1
While eating lunch, Paul asks Deb how to start the project. Deb describes her general approach.
Is this acceptable collaboration?
A. Yes
B. No

Situation #2
A few days later, Paul is talking to his roommate about the same assignment. The roommate took the class last year and shows him the solution to the problem.
Is this acceptable collaboration?
A. Yes
B. No

Situation #3
Paul asks Deb for more help after Deb has completed the assignment. Deb opens up her homework file, and discusses the problem with Paul, showing him parts of the computer file. After several attempts at explaining the problem to Paul, Deb decides she’s hungry and goes to lunch. Paul notices the file is still open on Deb’s computer and saves a copy of the file on his thumb drive.

What’s the violation in this scenario?
A. Paul and Deb talking together
B. Deb showing Paul her work on the computer
C. Paul taking Deb’s file
D. A and B
E. B and C

During Grading of the Assignment
- The instructor notices that Paul and Deb’s assignments are very similar.
- The two assignments share….
  - Identical file creation time stamp
  - Formatting of the answer
  - Errors in calculations
  - Formatting in the document

What will the instructor think?
A. Paul and Deb collaborated together and will accuse both of academic integrity violations.
B. Paul stole the file from Deb and will accuse Paul of academic integrity violation.
C. They just happened to come up with identical answers when they discussed the solution and there is no violation.
Who is at fault?

A. Paul  
B. Deb  
C. Both

Collaboration on Assignments

- Collaboration could include
  - Discussing assignments with other students
  - Sharing solutions and answers
  - Helping a friend – in or out of your class
- Collaboration is only allowed if you are explicitly told that you may work together
  - Ask your instructor
  - Don’t ask fellow students!

Integrity in Academics and Research

Part 2. Plagiarism

What is plagiarism?

- Plagiarism is when you use someone else’s words or ideas and take the credit for them.
  - Reusing your words for another paper is not plagiarism, but it may violate the academic integrity policy.
- Plagiarism is not allowed under any circumstances for any work

Two things you need to do

- Acknowledge the source of any ideas you present that are not your own – this is done with a citation
  - Exception – if something is “common knowledge” you do not need to cite it – BUT it’s better to over-cite than under-cite
- When using ideas that are not your own, present them in your own words

Good Practices to Prevent Plagiarism

- As you read papers, make notes in your own words
- Use these notes as you write instead of the paper
  - Post-its, index cards
- Avoid copying text into your papers with the intent of changing it later
  - This can be difficult and can lead to unintentional errors
Worksheet – Example #1
Is this plagiarism?
A. Yes
B. No
C. I don’t know

Worksheet – Example #2
Is this plagiarism?
A. Yes
B. No
C. I don’t know

Worksheet – Example #3
Is this plagiarism?
A. Yes
B. No
C. I don’t know

Worksheet – Example #4
Is this plagiarism?
A. Yes
B. No
C. I don’t know

Worksheet – Example #4
Is this plagiarism?
A. Yes
B. No
C. I don’t know

Worksheet – Example #5
Is this plagiarism?
A. Yes
B. No
C. I don’t know

- Examine the order of the phrases – is the sentence structure significantly different?
- Examine the words – is the language significantly different?
Integrity in Academics and Research

Part 3. Data

Responsible Conduct of Research (RCR) Expectations

- Follow the practices of your field and standards of the university.
- Commit to achieving the highest standards of integrity in scientific and scholarly research.
- RCR resources: www.mtu.edu/research/administration/integrity-compliance/

Which one isn’t Research Misconduct?

A. Fabrication, falsification, or plagiarism
B. Deviation from standard practices of field
C. Failure to comply with funding agency requirements
D. Retaliating against someone who has provided information about misconduct
E. Honest error or differences of opinion

Fabrication and Falsification

- Fabrication
  - Lying
  - Making up data that doesn’t exist
- Falsification
  - Covering the data up
  - Hiding data that you collected
- There are valid reasons to exclude data, but running out of time is not one of them

Consequences for Misconduct

- Academic work – Probation, suspension, expulsion, revocation of degree
- Research Misconduct hearing
- Funding agency may restrict or deny your ability to submit proposals
- Employer may not hire you
- Department may not approve co-op
- Journal can reject a paper

What to do?

- If you observe misconduct, you are obligated to do something. To not act is to participate in misconduct yourself.
- Rash reactions and public accusations, however, are not appropriate.
- Learn about standards in the field.
- Ask questions to clarify expectations.
- Consult with a neutral party.
What is the issue?
A. Why isn’t a moving company packing for the recent graduate?
B. May the student take the data with him?
C. Why isn’t the data in digital form?
D. Why didn’t they discuss the future of the data before he was packing?
E. Some other issue…

Definition of Data
- Michigan Tech considers data to be anything collected during research.
- Examples include:
  - Lists of sources
  - Samples
  - Plots
  - Printouts
  - Numerical data
  - Personal notes
  - Images
  - Strip chart recordings
  - Computer files

Who owns the data?
Owner is ultimately responsible in cases of misconduct and accept benefits and liabilities.
A. Funding agency
B. University
C. Faculty advisor/Principal investigator
D. Student researchers
E. All of the above

Who controls the data?
Controller decides who has access to the data for analysis.
A. Funding agency
B. University
C. Faculty advisor/Principal investigator
D. Student researchers
E. All of the above

Who can access the data?
A. Funding agency
B. University
C. Faculty advisor/Principal investigator
D. Student Researchers
E. All of the above

Student Issues
- Students are expected to know lab policies about data access and control
  - May data leave the lab?
  - How is work given credit in publications?
  - May students continue research on the same topic in another lab using the preliminary data?
- By agreeing to work in a certain lab, you agree to PIs policies – know what they are
Who are you?

Where will you be in ten years?
Scripts for Video Vignettes

“Sunny Skies”
Professor        Finished, Denise?
Graduate Student  Yep! It’s Spring Break and since classes aren’t meeting next week, I’m headed to Florida for some well-deserved R and R!*  
Professor        Wait a minute! Everybody needs a break once and a while, but Spring Break is the best time for uninterrupted research. I need you here – in the lab.

*Note: “R and R” stands for “Rest and Relaxation”

“Moving Day”
Graduate Student  Hello, Dr. Altierio.
Professor        Well, congratulations again, now I guess we get to call you Doctor as well.
Graduate Student  I guess so.
Professor        Packing to go?
Graduate Student  Yep. Packing up all my books and project files before heading off to North Carolina to start my post-doc.
Professor:        Which files?
Graduate Student:  My project files.
Professor:        Those belong to the lab. You can’t take them with you.
1. Identify the student and advisor expectations

2. Identify the stakeholders and their interests

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3. Generate options
What is plagiarism?

You are reading an article by Wright et al. entitled, “Bending and fracture toughness of woven self-reinforced composite poly(methyl methacrylate)” (J Biomed Mater Res, 36, 441–453, 1997) and want to use some of the information in your term paper on a similar topic. For each example, consider if the proposed paraphrasing is plagiarism or not and why.

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<th>Original material</th>
<th>Proposed paraphrasing</th>
<th>Is the proposed text plagiarism? Why or why not?</th>
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<td>1</td>
<td>Bone cement fills the space between the bone and the prosthesis, acting to transfer the load between the prosthesis and bone.</td>
<td>Bone cement fills the space between the bone and the prosthesis, acting to transfer the load between the prosthesis and bone. (Wright et al. 1997)</td>
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<td>2</td>
<td>Fixation of hip prostheses by bone cement has been occurring since shortly after the introduction of total hip arthroplasty by Dr. Charnley. (Charnley 1975)</td>
<td>In 1997, Wright said, “Fixation of hip prostheses by bone cement has been occurring since shortly after the introduction of total hip arthroplasty by Dr. Charnley. (Charnley 1975)”</td>
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<td>3</td>
<td>Long-term clinical success of cemented prostheses is directly linked to the stability of the bone cement mantle.</td>
<td>The stability of the bone cement mantle is directly linked to the long-term clinical success of cemented prostheses.</td>
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<td>4</td>
<td>Previous work in this lab has concentrated on improving the mechanical properties of PMMA for use in total hip replacements without introducing a new chemistry for which it might be difficult and expensive to obtain FDA approval. (Lautenschlager et al. 1984)</td>
<td>Lautenschlager’s prior work focused on increasing the mechanical properties of PMMA for use in total hip replacements without changing the chemistry since it might be expensive and difficult to obtain FDA approval.</td>
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<td>5</td>
<td>Previous work in this lab has concentrated on improving the mechanical properties of PMMA for use in total hip replacements without introducing a new chemistry for which it might be difficult and expensive to obtain FDA approval. (Lautenschlager et al. 1984)</td>
<td>The medical device industry has been hesitant to approve new materials due to a lengthy and expensive FDA approval process. Due to this, the Lautenschlager group has focused on improving the properties of PMMA without modifying the chemistry. In particular, fatigue and fracture properties have been greatly improved with their new materials. (Lautenschlager et al. 1984)</td>
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Writing and Language Resources

  [http://www.mtu.edu/humanities/mtmc/mission/](http://www.mtu.edu/humanities/mtmc/mission/)
  - Weekly, one-time, and online appointments
  - Assistance with writing, presentations, research, resumes, and more!

- **Turnitin.com** – check your documents for plagiarism. See the “Graduate Candidates” course on Canvas for more information.

- **International Graduate Student Communication and Cultural Center (IGSC3)** – is designed for international graduate students so that they are better prepared and more confident communicators on campus, in the classroom and in the community. Contact Sarah Isaacson ([sisaacso@mtu.edu](mailto:sisaacso@mtu.edu)), or visit Walker 102. Weekly appointments are available.

- **Van Pelt and Opie Library** – www.mtu.edu/library and library@mtu.edu – Visit our Circulation Desk and our Student Research Consultants for assistance with your assignments or research. Librarians offer personalized consultations to get you started! Here are some highlights of our services:
  - **Off-campus access:** Whether at home or worldwide, you have access to most services and resources of the library including journals, databases, e-books, and streaming videos. On the website look for tabs for Search, Databases A-Z, or Journals A-Z. Once you select a resource, you will be prompted to log in with your Michigan Tech username and ISO password.
  - **Interlibrary Loan (ILL):** You can request books, articles, or other materials the library doesn’t have. We locate the materials you need from our partner suppliers, normally at no charge to you. For more information visit the library’s website and click on “Interlibrary Loan”.
  - **EndNote:** Save time by managing your citations and automatically embedding them using the correct style in your manuscripts/footnotes/endnotes. Download here: [http://libguides.lib.mtu.edu/endnote](http://libguides.lib.mtu.edu/endnote) at no cost and look for regularly offered workshops.
  - **Textbooks:** As a general rule, the library doesn’t acquire required textbooks and they are rarely obtainable via Interlibrary Loan. We have Course Reserves where instructors place their copy on reserve. Search the catalog to see what is available.
  - **Convenience/productivity tools:** The library’s Circulation Desk has useful items to borrow including cameras, chargers headphones, scientific calculators and more.
  - **Workshops:** Check the library website for a schedule of workshops covering a range of topics including EndNote, Copyright, Advanced Search Skills, Poster Design, and more.