



PHY131H1F Introduction to Physics I Class 1



- Welcome - please make yourself comfortable!
- We are **Jason Harlow** and **Andrew Meyertholen**. We will be sharing the teaching between now and December.
- Today will be an introduction and team lecture
- On Wednesday Dr. Harlow will take over for the first half of the semester, starting with Chapter 1!



Today's Outline

1. **Introduction** Who are we? What is physics?
2. **Run of the Course** Online Assignments, Practicals, Tests and Exam
3. **Physics Education Research** Why all the clickers, pre-class quizzes, practicals?
4. **Why are We in This Class?**
5. **Tips for Class Success**





Clickers...



- Beginning Wednesday, we will be asking in-class clicker questions every class.
- You will receive marks 100 marks per question for participation only; getting the correct answer gets you one extra mark (so 101 per correct question).
- Clicker Participation is worth 2% of your course mark.
- Clickers cost \$46 at the bookstore new, \$32 used, and can be sold back for half-price after you are done. Many courses at U of T use these clickers.
- i>clicker GO app registration costs \$10 per semester, non-refundable.
- You must register your iclicker ID on portal in order to obtain marks

Who is teaching this course?



First half, now until late October:

- **Jason Harlow**

B.Sc. University of Toronto 1993
Ph.D. Pennsylvania State University 2000






Second half, October 28 to December 4:

- **Andrew Meyertholen**



My contact information

- **Jason Harlow**, teaching first half of course
- jharlow@physics.utoronto.ca
- **Office: MP121B**
-  /harlowphysics
-  /phy131uoft (77 “likes” as of this morning)
-  @jasonjbharlow
- Voice line (no texts): 416-946-4071
- Fall 2014 office hours: T12 and F10, starting tomorrow.

Other important contacts



- **Dr. Pierre Savaria**, Course Coordinator
- phy131@physics.utoronto.ca
- Office: MP129E
- Voice line: 416-978-4135

- **Ms. April Seeley**, Course Administrator
- seeley@physics.utoronto.ca
- Office: MP129
- Voice line: 416-946-0531
- Office hours: Monday, Tuesday, Thursday, Friday 9:30am to 5:00pm, and Wednesdays from 9:30am to 4:30pm



What is Physics?



- “Physics is the natural science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force.
- More broadly, physics is the general analysis of nature, conducted in order to understand how the universe behaves.”

- <http://en.wikipedia.org/wiki/Physics>



Physics
UNIVERSITY OF TORONTO

<http://www.physics.utoronto.ca/>

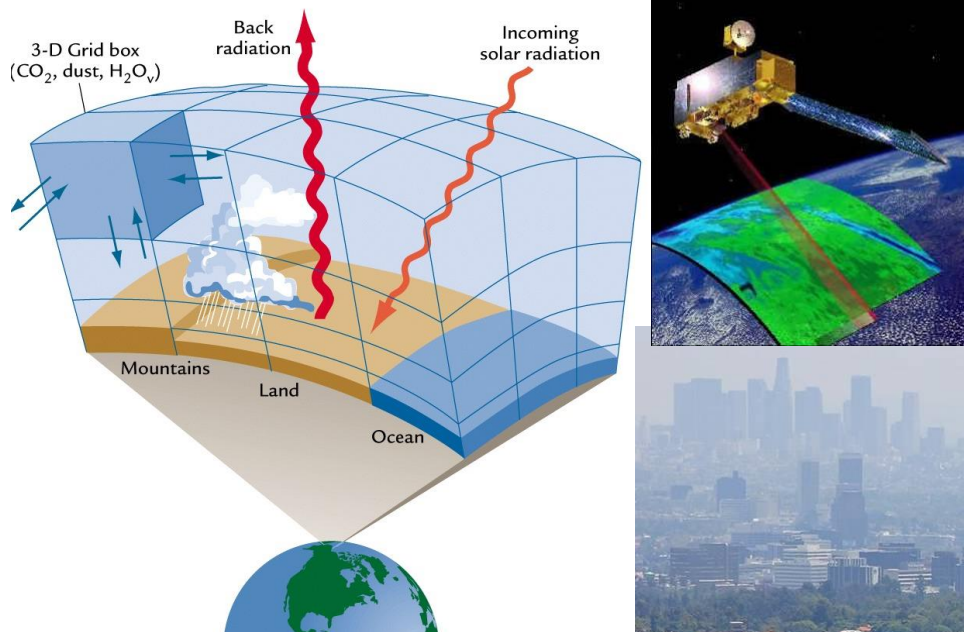


- 55 Researching Faculty
- 6 Teaching Faculty
- 2 Librarians
- 20 Technologists and Information Technology Specialists
- 20 Administrators

Physics at U of T

- Some of the top research fields in our department are:
- **Atmospheric** – Observational and Computational
- **Biological Physics**
- **Condensed Matter Physics** – Theoretical and Experimental
- **High Energy Particle Physics** – Theoretical and Experimental
- **Geophysics**
- **Quantum Optics**
- **Physics Education Research**

Atmospheric Physics at U of T



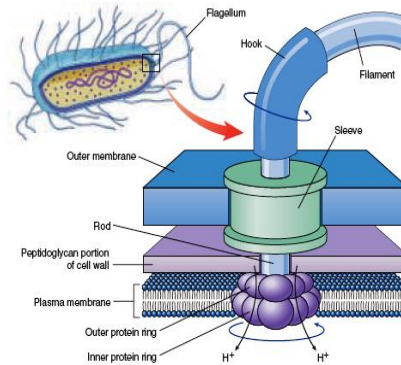
Biological Physics at U of T

How do simple creatures like *C. elegans* make decisions?



What is the physics behind RNA folding, molecular motors and DNA replication?

How do nano-motors transport molecules into, out of, and within cells?



July 4, 2012

World science community abuzz as Higgs boson results announced

[Tweet](#) [Like](#)

U of T physicists play key role in one of the most important quests of the decade

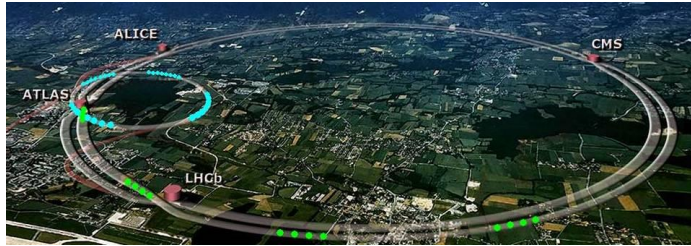
Kim Luke

The international team of researchers that has been smashing high-energy protons together inside the Large Hadron Collider (LHC) to recreate the conditions at the time of the Big Bang has announced new evidence which may be the long awaited observation of the Higgs boson.

"The results are an incontrovertible demonstration of the existence of a hitherto



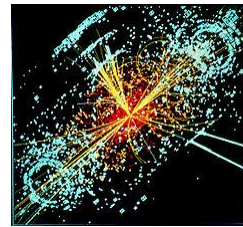
The Large Hadron Collider



[image from <http://www.universetoday.com/17905/large-hadron-collider-worst-case-scenario/>]



[Photo courtesy of BBC News, credited to Cern/Maximilien Brice, from http://news.bbc.co.uk/1/hi/shared/sp1/h/pop_ups/05/sci_nat_the_large_hadron_collider/img/1.jpg]



Higgs Boson
discovered July 4, 2012

[http://en.wikipedia.org/wiki/Higgs_boson]

What Does Taking PHY131/132 Get You?

- Lots of fun!
- PHY131/132 is an acceptable pre-requisite for all second-year physics courses in case you decide to switch and pursue a POST in physics
- This course will help prepare you for the physics portion of the Medical College Admission Test (MCAT) in case you want to be a doctor some day
- Many health-science post-graduate programs require 2 semesters of lab-based physics
- Important knowledge and skills which will last a lifetime.



Pre-Requisite for PHY131:

- MCV4U Calculus and Vectors or MHF4U Functions and Calculus or course equivalent from another province, country.

Co-Requisite for PHY131:

- To be able to do PHY131H1 a student must do (or have done already) MAT135H1 or MAT137Y1 or MAT157Y1 or course equivalent from another college/university.

Note on MAT135/137/157 Co-Requisite:

- Students who are on the waitlist for any of the co-requisite courses can stay in the PHY131H1 until such time as the waitlists close (September 14).
- If you were on the waitlist and were not put into one of the co-requisite courses then you will have to remove yourself from PHY131H1. If you find that after the waitlists close you are put into one of the co-requisite courses then you can stay in PHY131H1.
- Also if you leave the co-requisite course at anytime during the term then you will have to remove yourself from PHY131H1.

What can you expect of me?

- To try to teach well and explain physics clearly, at an appropriate level
- To treat you with courtesy, respect and kindness
- To be fair
- To be in my office at scheduled office hours
- To answer emails within 48 hours
- To begin class at 11:10am and end class at or slightly before noon

What do I expect of you?

- To read the assigned reading **before** coming to class (or at least watch the pre-class video)
- To keep up with the online homework
- To be seated and ready for class at 11:10
- To **not have more than one clicker with you** (bringing a friend's clicker to class is an academic offense called *impersonation*)
- To not make lots of noise during class or do stuff which distracts your neighbours
- To be patient with me when I make mistakes, and also to point out any mistakes I don't notice right away

Online Homework

- You should purchase a **MasteringPhysics®** Student Access Kit, either as part of the textbook package or as a stand-alone
- Register with your name (same name on your student card) and UTORid
- Enrol in this course: **MPPHY131F14**
- **Problem Sets** (worth 9% of course mark) are quite long – make take between 1 and 3 hours per week

Pre-Class Reading Quizzes

- In order to get the best out of our classes (which will include lots of clicker questions and discussion) you must read the chapters **before** coming to class
- If you hate reading, I have also posted pre-class videos, which go over the main points from each day's reading
- Beginning this Wednesday, there will be a short online multiple choice quiz on **MasteringPhysics®** due by 8:00am before class.
- The quiz will be based on your reading or watching of the pre-class video.
- The questions are not too tricky – if you've read the material, you should find them quite straightforward.
- These quizzes are worth 3% of your course mark

Tests and Exam

- **Test 1 is Tuesday September 30, 6:00-7:30PM** in room(s) to be announced (only 3 weeks away!)
- An alternate sitting will be scheduled just before the main sitting of the test for students who demonstrate a conflict with another academic activity at U of T – you must visit April in MP129
- **Test 1** is worth 15% of the course mark, and covers Chapters 1-3, and the Error Analysis Document
- **Test 2**, also worth 15%, is Tue. Nov. 11, 6:00PM
- The **Final Exam** is worth 40% of the course mark, covers the entire course, and will be held some time TBA between Dec.8-19

How to get more information

- The main way of keeping up with what's going on in the course is the web-site at:
<https://portal.utoronto.ca>
- The Course Information page on the portal page for this course has all the rules for the course – PLEASE READ IT!
- Also, we will email you from time to time at your utoronto.ca email address
- The above forms of electronic communication are mandatory – please use them!

- Wednesday's reading assignment is Chapter 1.
- Please go on MasteringPhysics today or tomorrow and complete the Chapter 1 Preclass Quiz!
- This is for marks!
- Don't forget your clicker on Wednesday!