



UMassAmherst

Institute for
Applied Life Sciences

UMassAmherst

College of Natural Sciences
Physics Department

US-ATLAS Workshop Open Day

Rafael Coelho Lopes de Sa
August 6th 2019



2019 US-ATLAS summer workshop

Welcome to the University of Massachusetts, Amherst

The local organizing committee would like to welcome you all to our campus.



Ben Brau



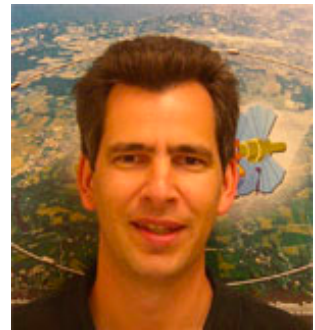
**Rafael Coelho
Lopes de Sa**



**Carlo
Dallapiccola**



**Verena Martinez
Outschoorn**



**Stephane
Willocq**

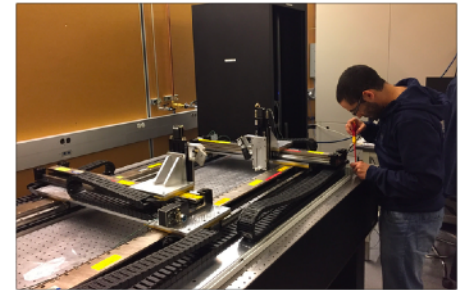
2019 US-ATLAS summer workshop

- UMass Amherst is the flagship campus of the University of Massachusetts system.
- This year the US-ATLAS workshop is hosted jointly by the **Institute for Applied Life Sciences** (www.umass.edu/ials) and the **Physics Department** (www.physics.umass.edu)



UMass Physics Department - PSB

- The Physical Sciences Building was completed in 2018. It is a building with 95,000 sqft of state of the art research laboratory space used by the Physics and Chemistry Departments.
- Several Experimental Particle Physics Laboratories in the new Physical Sciences Building are used for research and to build detectors for major experiments around the world.
 - ATLAS, g-2, LZ, EXO, Borexino, DarkSide, several JLAB experiments (MOLLER, charged pion polarizability, PRIMEX, ...)



UMass Physics Department - ACFI

- The Amherst Center for Fundamental Interactions (www.physics.umass.edu/acfi) is a center dedicated to advancing research in theoretical and experimental physics at the interface of the Energy, Intensity, and Cosmic frontiers.
- 20 permanent faculty, 15 postdoctoral researchers. Directed by Michael Ramsey-Musolf.
- Several workshops during the year, bringing together theoretical and experimental particle physics.



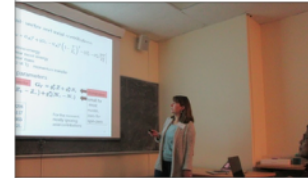
AMHERST CENTER FOR FUNDAMENTAL INTERACTIONS

Physics at the interface: Energy, Intensity, and Cosmic frontiers

University of Massachusetts Amherst



Unlocking the Higgs Portal



Neutrino-Electron scattering at low energies



LHC Searches for Long-Lived BSM Particles

Institute for Advanced Life Sciences

- IALS was created from investments by the Massachusetts Life Sciences Center and the University of Massachusetts
 - New Building (LSL, 6 floors of research lab space)
 - Equipment to Establish Core Facilities
 - Faculty and professional staff hires
- Life Science Laboratories Building
 - Houses Interdisciplinary Research “Clusters”
 - Contains industry collaboration spaces
 - > 30 centralized & professionally-managed Core Equipment Facilities



Center for Personalized Health Monitoring
Devices & Technology
Data & Analytics

Center for Bioactive Delivery

Models-to-Medicine Center

Goals of the IALS

- **Advance Applied Science & Technology**
 - Integrate and translate fundamental life science research into innovative product candidates, technologies, and services that deliver benefits to human health and well-being
- **Develop Industry Connections**
 - Establish innovative models for collaborations with industry, government, and foundations
- **Contribute to Workforce Development**
 - Utilize IALS resources to facilitate experiential training in the discovery, development, and manufacture of product candidates
- **Entrepreneurship**
 - Participate in venture mentoring, start-up company creation, and entrepreneurship

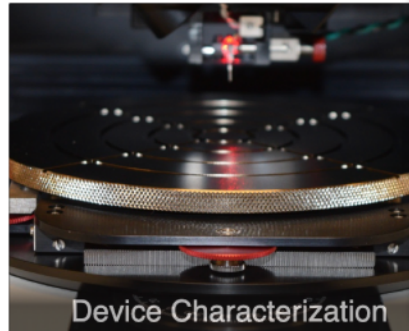
Core Facilities

33 advanced lab facilities to enable IALS translational mission
(<https://www.umass.edu/ials/core-facilities>)



Advanced Digital Design and Fabrication

* Being used for US-ATLAS upgrade project (ITk)



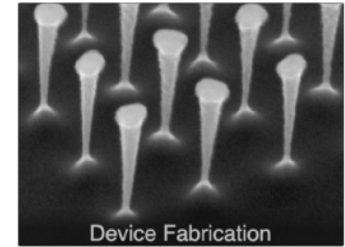
Device Characterization

* Being used for US-ATLAS upgrade project (ITk)

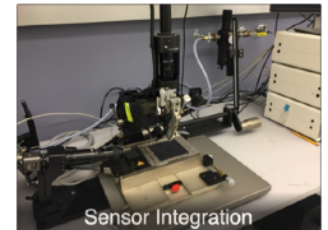


High Performance Computing

* Being used for US-ATLAS Tier-2 Grid Cluster (NET2)



Device Fabrication



Sensor Integration

Great potential for development of new technologies in particle detectors!!!

US-ATLAS workshop Open Day

- Today is the Open Day of the US-ATLAS workshop when we host colleagues from other experiments and from theoretical physics to discuss the most recent developments in our field.
- It is a great opportunity for us to look a bit beyond ATLAS. It is also a chance to showcase our field to our colleagues in this University.
- This year we have a great set of talks: <https://indico.cern.ch/event/813845/>
- If you are a speaker today and haven't uploaded your talk yet, please do so as soon as possible. If you have trouble uploading your slides, please contact a member of the organizing committee.

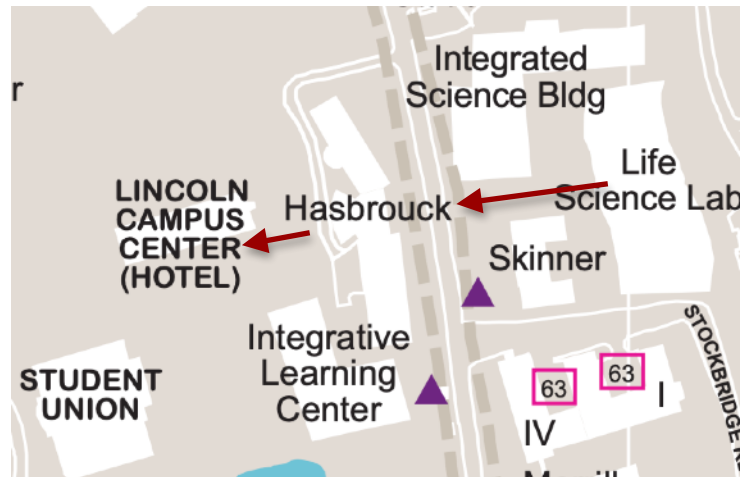
Lunch

- **The University of Massachusetts is growing rapidly!**
- **You may have seen several construction sites outside. New buildings and new infrastructure will be ready for the Fall term.**
- **But that also means that we have very reduced options for lunch on campus.**

- **On campus, right now, there are basically three places for lunch:**
 - **Campus Center**
 - **Hampshire Dining Commons**
 - **University Club**

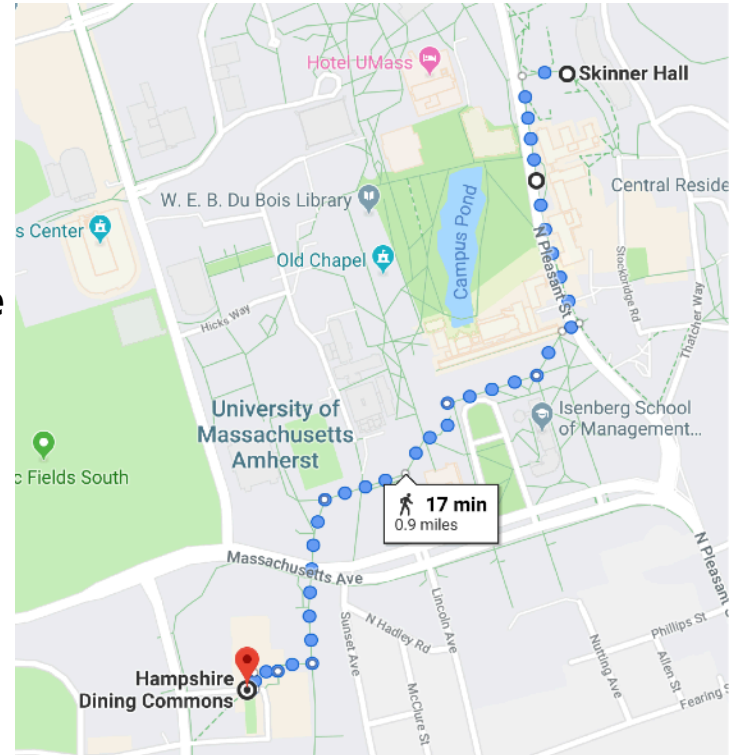
Campus Center

- Usually a major dining hall. Right now, only the Harvest is open.
- Several options
 - Food bar (by weight)
 - Sushi bar
 - Mexican (Chipotle-style) bar
 - Salad bar
- Coffee shop with craft sandwiches also available across the hallway from Harvest.
- Leave LSL from 2nd floor (west). Enter Hasbrouck, go down the stairs. You will exit in front of the Campus Center.



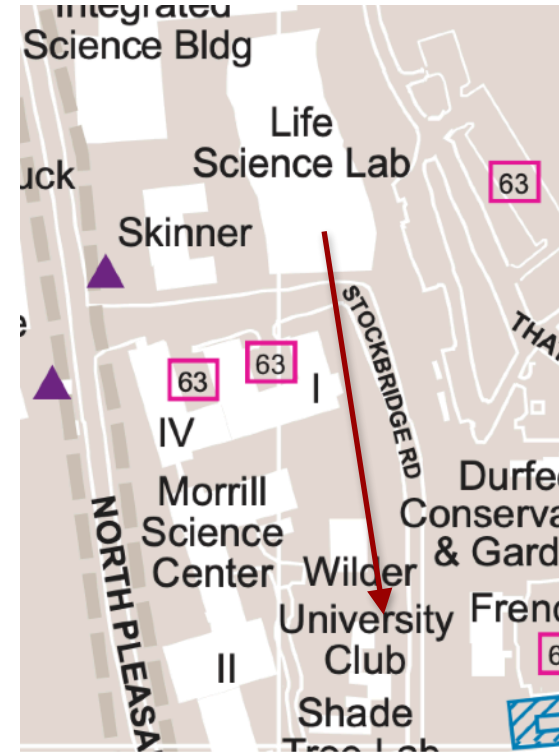
Hampshire Dining Commons

- Large dining hall open during the summer.
- Great example of the award winning food at UMass Amherst.
- Several options, very inexpensive.
- 15 minutes (1 mile) walk from LSL. At least one of us will walk there.



University Club

- À la carte restaurant. Requires reservation: we recommend doing reservations in small groups.
- More information umassclub.com, Phone: (413) 545-2551
- More expensive than the other two options.



Social Event - Tanglewood

- A bus will leave for Tanglewood at 5:00pm from the bus stop at North Pleasant St.
- If you have purchased a ticket for the social event, please, be there on time.
- A picnic bag will be provided just outside this room before the departure (at 4:30pm). The picnic bag is exclusive for those people going to the event.
- Ben Brau will provide more details later today.



Other details

- The campus has site wide eduroam coverage.
- If you can't use eduroam, you can connect to the guest UMASS network using the password you received during registration.
- If the internet does not work, please, contact one of the organizers.

- Restrooms on the 3rd floor of the LSL are under repair.
- Please, use the restrooms on the 2nd and 4th floors.

- Any other problem, contact us. We are here to help.

Thanks for coming!
We hope you will have a great time here.