PHYSICS AND ASTRONOMY DEPARTMENT OPEN HOUSE

Fall 2016 October 8 2016, 8:30 am to 12:00 pm

Physics and Astronomy Department, Watanabe Hall

2505 Correa Road, Honolulu, HI

OPEN TO THE PUBLIC FROM 8:30 AM TO 12:00 PM ALL SESSIONS LAST 30 MIN.

VISITS	SPEAKERS	ROOMS	8:30	8:45	9:00	9:30	10:00	10:30	11:00	11:30
REGISTRATION	MEET YOUR GUIDE	WATANABE ENTRANCE	ALL GROUPS	⊘	⊘	⊘	⊘	⊘	⊘	⊘
WELCOME ADDRESS	P. Lam Chair	HIG 110	⊘	ALL GROUPS	⊘	⊘	⊘	⊘	⊘	⊘
FREE ELECTRON LASER LABORATORY	I. Howe	WAT 102	⊘	⊘	✓	✓	✓	✓	✓	✓
COSMIC RAYS	T. Nelson	WAT 112	⊘	⊘	✓	✓	✓	✓	✓	✓
A GLIMPSE of the UNIVERSE	K. Boddy	WAT 113	⊘	⊘	✓	✓	✓	✓	✓	✓
STARLAB	M. Lum	WAT 114	⊘	⊘	✓	✓	✓	✓	✓	✓
SOLAR OBSERVATION	Solar Students	WATANABE ENTRANCE	⊘	⊘	⊘	⊘	✓	✓	✓	✓
ANTI-MATTER LABORATORY	T. Browder & al.	WAT 221	⊘	⊘	✓	✓	✓	✓	✓	✓
CHAT WITH PHYSICISTS	K. Whitman, C. Light and S. Gimbal	WAT 217	⊘	⊘	✓	✓	✓	✓	✓	✓
NEWS FROM THE DARKSIDE	J. Maricic	WAT 315	⊘	⊘	✓	✓	✓	✓	✓	✓
NANOPHYSICS	K. Sattler	WAT 317	⊘	⊘	✓	✓	✓	✓	✓	✓
DARK MATTER DETECTION	T. Thorpe	WAT 319	⊘	⊘	✓	✓	✓	✓	✓	✓
SPECTROSCOPY	G. Mathews	WAT 415	⊘	⊘	✓	✓	✓	✓	✓	✓
JACOB'S LADDER	M. Slovak & C. Nelson	WAT 417 A	⊘	⊘	✓	✓	✓	✓	✓	✓
THE VERY SMALL AND THE VERY LARGE	X. Tata	WAT 420	⊘	⊘	✓	✓	✓	✓	✓	✓
FUN WITH PHYSICS	M. Nassir & Society of Physics Students	WAT 421	⊘	⊘	✓	✓	✓	✓	✓	✓

SESSION TOPICS

WAT Entrance - MEET YOUR GUIDES - As soon as you arrive please register at the front desk outdoor in front of Watanabe Entrance. You can gather information about the physics open house and get registered for the event.

HIG 110 - WELCOME ADDRESS By P. Lam -
Dr. Pui Lam Chair of the Physics Department will welcome you to this journey in the physics laboratories opened for this occasion to the public to show you the beauty of physics.

WAT 102 - FREE ELECTRON LASER by I. Howe
The Mark III free-electron laser as it was originally commissioned at Stanford in 1984. Research with this FEL and its subsequent configuration as an FEL master-oscillator power-amplifier is presently underway at the UH Manoa campus for remote sensing applications and advanced FEL concepts.

WAT 112 - COSMIC RAYS by T. Nelson
It is well known that in space, far from the Earth, there is no atmosphere. However, outer space is not completely empty - many different kinds of particles can be found there. I will explain what those particles are and why it is important to study them.

WAT 113 - A GLIMPSE of the UNIVERSE by K. Boddy
What do we know about the Universe? How do we go about studying it? What mysteries still remain? We will take a brief tour of the history of the Universe and discuss various aspects of its origin and evolution.

WAT 114 - STARLAB + SOLAR OBSERVATION by M. Lum et al.
Take a tour of tonight's sky with the Institute for Astronomy's StarLab inflatable planetarium. During our 30 minute show, we will walk you through some of the brighter planets, stars, and constellations (both Western and Hawaiian) visible over Oahu over the next few months.

WAT Entrance - SOLAR OBSERVATION by Solar students
Outdoors, in front of the Physics Department Watanabe Hall, there will be stations for solar observation. Weather permitting, we will observe the Sun using amateur telescopes.

WAT 217 - CHAT WITH PHYSICISTS by K. Whitman, C. Light, S. Gimbald et al.
You will have the opportunity to chat with Physicists and ask questions about a typical day of a physicist, or possible career path in physics, which type of job opportunities are available for physicists and so on.

WAT 221 - ANTI-MATTER LABORATORY by T. Browder et al.
We will discuss matter, antimatter and their interactions. Using the tools in the undergraduate senior lab, we will show you an experiment with matter-antimatter annihilation.

SESSION TOPICS

WAT 315 - NEWS FROM THE DARKSIDE by J. Maricic
Although astronomical observations tell us that almost one quarter of the universe's entire mass is composed of the dark matter (unlike the ordinary matter that we are familiar with), we have very little clue about its mass or any other properties.While theorists are brainstorming about what the nature of these most intriguing particles can be, experimentalists are devising detectors to directly detect dark matter particles and measure their mass. We will describe one such detector called the DarkSide that we have been working on, along with its quest to detect and directly confirmed existence of dark matter.

WAT 317 - NANOPHYSICS by K. Sattler
What are nanoflakes? or carbon nanofoam? You will visit a lab where these such low-dimensional nanostructures are created. Get ready for a full immersion in nanotechnology and nanophysics!

WAT 319 - DARK MATTER DETECTION by T. Thorpe
Dark matter is one of the biggest mysteries in physics today. We know it exists, but what is it? How can we learn more, detect it, and study it? I will talk about our ongoing effort to build a directional dark matter detector, basically a sort of dark matter telescope, that can detect dark matter in the laboratory, and see where it is coming from.

WAT 415 - SPECTROSCOPY by G. Mathews
How do you take the temperature of a star, when you can't visit it with a thermometer? How can you know what a star is made of, when you can't bring a sample to a lab? By splitting up light into its component colors (spectroscopy), you can measure these things and more, collecting the basic clues we use to figure out how the universe works.

WAT 417A - A JACOB'S LADDER by M. H. Slovak & C. Nelson
Come to see the demonstration of a Jacob's Ladder. A very Talented and “Mad” Scientist will be making a video and helping with the demonstration together with Igor, her eager but slightly crazed assistant.

WAT 420 - THE VERY SMALL AND THE VERY LARGE by X. Tata
Albert Einstein changed our conception of how we think of space, and surprisingly found that space was created as time passed. This was so bizarre that he found it difficult to accept. We tell this story and discuss how contemporary particle physics (the science of the smallest things we know) ties in with Einstein's ideas and provides a description of our entire Universe, the largest thing that we know.

WAT 421 - FUN WITH PHYSICS by M. Nassir & Society of Physics Students
What do spinning ice skaters do to make themselves speed up? How does a ping-pong ball stay trapped in a stream of air? Why can you see the Phantom Pig, but not feel it? Find the answers to all of these questions and more in Watanabe 421! Experience tabletop demonstrations involving mechanics, fluids, electromagnetism, and light -- brought to you by the Society of Physics Students.

For questions or to schedule a group visit -
M. Jones (mdj@phys.hawaii.edu)

Organization - V. Bindi,

Teachers Contact Person - M. Jones

Logistic - K. Kuroda, R. Tom, K. Mertz, C. McLellan

Clean Up - S. Lopes, I. Tomei

Multimedia - J. Lee, J. D. Nano

Speakers and advisors - P. Lam, I. Howe, T. Nelson, C. Nelson, K. Boddy, M. Lum, T. Browder, K. Whitman, C. Light, S. Gimbal, S. Vahsen, J. Maricic, G. Mathews, M. Slovak, X. Tata, J. Kumar, M. Nassir, T. Thorpe, Society of Physics Students, Solar Observation Students

Student Guides - C. Corti, C. Consolandi, E. Edkins, K. Tatem, B. Hackett