Welcome to our new Faculty Member! Ben Machta is a theoretical physicist interested in the way that order and function emerge from microscopically complicated and noisy biological systems. Much of Ben’s work focuses on understanding the structure and unusual thermodynamics of biological membranes, which are tuned close to a de-mixing critical point. He has sought to understand what this critical point means for the function of ion channels and other proteins residing within the membrane. Ben has used tools from information geometry and statistics to understand why we can so often use simple models to accurately describe microscopically complicated systems. He has used similar tools to place bounds on the efficiency of small thermodynamic machines, like molecular motors that must operate at scales where fluctuations are enormous.

Ben did his undergraduate studies at Brown University, and received a PhD in physics with James Sethna at Cornell University. He is currently a Lewis-Sigler fellow at Princeton University where he carries out independent research and teaches in an advanced interdisciplinary science program for freshmen. Ben began an appointment as an assistant professor in the Department of Physics and the Systems Biology Institute in January 2018.

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Welcome to Gianantonio Pezzullo a Postdoctoral Associate working with Sarah Demers. In his own words “… “My passed research activity (3 years PhD + 2 years PostDoc @ INFN of Pisa) was dedicated to the design of the Mu2e experiment at Fermilab that will search for the charged lepton flavor violating process: $\mu + N \rightarrow e + N$. I mostly have focused my studies on the crystal calorimeter project, but I have been also strongly involved in the development of the track reconstruction code. The experience I gained on calorimetry and tracking sides allowed me to perform several relevant studies: background suppression, particle-identification algorithms, sensitivity estimates, etc. Now that I joined Sarah Demer’s group in Yale, I will focus my research on developing the Mu2e trigger strategy and working with young students for implementing trigger algorithms.”

For more news please see http://physics.yale.edu/news
Friday, February 16 Center for Teaching and Learning Seminar. Dr. Robert Bellin, College of the Holy Cross, “Purification and characterization of Taq polymerase: The development of a multi-week, skill-development based laboratory project for undergraduate students”, CTL 120A-120B at 11:00am.

Friday, February 16 Sackler Discussion Group. Margarida Agrochao, Yale University, “Which neurons regulate walking speed in fruit flies?” and Zachary Levine, Yale School of Medicine, “Intrinsically disordered protein folding and the thermodynamics of amyloid diseases”, SPL 57 at 12:00pm. Lunch served at 11:45am.

Saturday, February 17 Girls’ Science Investigations. Session #3 The Material World. Sloane Physics Laboratory 9:00am-2:00pm by registration only.

Saturday, February 17 2018 Lunarfest. Celebrate the year of the Dog! 10:00am Parade on Whitney Avenue. Click here for schedule of events.

For more seminars see: http://physics.yale.edu/calendar

Announcements

Reminder – Postdoctoral appointments, Visiting Students in Research (VSR) appointments, and Minors in the Laboratory are handled by Daphne Klemme (daphne.klemme@yale.edu); Faculty Appointments (including Research Scientists, Faculty, Visiting Faculty, etc.) are handled by Maria Foley (m.foley@yale.edu); Visiting Assistant in Research (VAR) appointments, Visiting Students or Exchange Students (DSR) appointments are handled by Sandy Tranquilli (Sandra.tranquilli@yale.edu); Sponsored Identities (netIDs for non-employees) are handled by Karen DeFelice (karen.defelice@yale.edu); and Student jobs are handled by Cindy Conforte (Cynthia.conforte@yale.edu).

For further information on any of the items included here or if you would like to contribute to the next newsletter, send email to Daphne Klemme.

For updates on the Yale Science Building, including a new logistics plan. The project encompasses the construction of a new state of the art sciences laboratory at the approximate location of the demolished J.W. Gibbs building, a comprehensive renovation of the KBT Plaza, a lecture hall, and a common area at the south end of KBT Plaza.