Sign up for the MUBA Mentor-Mentee Program by filling out a short Google Form at http://goo.gl/hkb6H. Receive (or give!) advice and mentorship from upperclassmen in navigating the world of chemistry, biology, and biochemistry at MIT. If you’re a new or potential Course 5, 6-7, 7, 9, 10, or 20 major, this is a great opportunity!

Thinking about applying to medical school? Learn how to prepare for application to medical school and about the resources available through MIT Prehealth Advising at the MIT Prehealth Orientation on Wednesday, September 24, from 7:15-8:45 p.m. in room 4-237. Register at http://www.myinterface.com/mit/student/ and contact Jennifer Earls (jearls@mit.edu) with any questions. Pizza will be provided! Also, note that MIT Prehealth Advising offers drop-in hours every Tuesday and Wednesday from 11 a.m.-12 p.m. in room E39-305.

Like research, cutting-edge science, writing, or design? Want to put together MIT’s only undergraduate research journal? Join the MIT Undergraduate Research Journal (MURJ) team! Check out MURJ at its first general body meeting on Tuesday, September 23, at 7 p.m. in room 5-231. Dinner will be provided. MURJ is looking for editors, feature and news writers, research staff, and more! Email murj-officers@mit.edu with any questions.

Looking to receive direct funding for your fall 2014 UROP? The deadline to apply for UROP direct funding is Thursday, September 25. The application deadline for proposals not seeking direct funding is Thursday, October 30. Visit http://web.mit.edu/urop/index.html for more information about UROP funding options and application guidelines, and direct any questions to urop@mit.edu. Complete your application at https://eduapps.mit.edu/uropweb/home.mit.

Welcome to our new MUBA Executive Board members for 2014-2015: freshman representatives Vivian Hu, Nicole Kogan, and Isaiah Udotong; secretary Jae Hyun Kim; and community outreach chair Julie Kim! Feel free to contact the MUBA Executive Board at any time at muba-exec@mit.edu.

Upcoming MUBA Events

Sunday, September 28: 5.07 study break - 3:30 PM - 4:30 PM, location: TBD
Wednesday, October 15: UROP panel - 7:00 PM - 8:00 PM, location: 3-333
Monday, November 24: Faculty dinner - 7:30 PM - 8:30 PM, location: W20-306

Of Interest


Abstract: Saturation mutagenesis—coupled to an appropriate biological assay—represents a fundamental means of achieving a high-resolution understanding of regulatory and protein-coding nucleic acid sequences of interest. However, mutagenized sequences introduced in trans on episomes or via random or “safe-harbour” integration fail to capture the native context of the endogenous chromosomal locus. This shortcoming markedly limits the interpretability of the resulting measurements of mutational impact. Here, we couple CRISPR/Cas9 RNA-guided cleavage with multiplex homology-directed repair using a complex library of donor templates to demonstrate saturation editing of genomic regions. In exon 18 of BRCA1, we replace a six-base-pair (bp) genomic region with all possible hexamers, or the full exon with all possible single nucleotide variants (SNVs), and measure strong effects on transcript abundance attributable to nonsense-mediated decay and exonic splicing elements. We similarly perform saturation genome editing of a well-conserved coding region of an essential gene, DBR1, and measure relative effects on growth that correlate with functional impact. Measurement of the functional consequences of large numbers of mutations with saturation genome editing will potentially facilitate high-resolution functional dissection of both cis-regulatory elements and trans-acting factors, as well as the interpretation of variants of uncertain significance observed in clinical sequencing.

MUBA Executive Board 2014-2015

Justin Yuan, President | Tru Dang, Vice President | Nicole Zeinstra, Treasurer | Jae Hyun Kim, Secretary
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