

) MESSAGE FROM THE DEPARTMENT HEAD

Dear Members of the MIT Physics Community,

The MIT Physics Department is famous for the development of junior faculty into research leaders, for the quality of our teaching, and for our collegial and supportive community. You can see these qualities reflected in a new short film about the department (web.mit.edu/physics/about) and in our receipt of the 2013 Award for Improving Undergraduate Physics Education of the American Physical Society (www.aps.org/programs/education/undergrad/faculty/awardees.cfm). The strength of our community makes it a joy to work and study here.

This spring, two new assistant professors joined our faculty: gravitational wave physicist **Matthew Evans** and quantum information theorist **Aram Harrow**. This fall, they were joined by experimental particle physicist **Yen-Jie Lee** and particle theorist **Tracy Slatyer**; you can read about them in our New Faculty section. Also this spring, we celebrated the promotion of **Robert Simcoe** to tenure. We thanked retiring faculty members **J. David Litster** and **Ernest Moniz**. Ernie stepped down as Director of the MIT Energy Initiative to become U.S. Secretary of Energy. During the past year physics faculty received many notable awards, including the Kavli Prize in Nanoscience to **Millie Dresselhaus** and the Fundamental Physics Prize to **Alan Guth**. For the full list of honors and awards received by our faculty and staff, turn to the Faculty & Staff Notes section.

This was a great year for innovation and discovery in physics at MIT. Our faculty working on the CMS experiment at the Large Hadron Collider played a big role in the discovery of the Higgs boson. **Frank Wilczek** shares his insights on page 36. Our astrophysicists were successful in their proposal to launch a new satellite to search for exoplanets; the Transiting Exoplanet Survey Satellite (TESS) will be launched by NASA in 2018. And our faculty, staff and students continue to make breakthroughs in many areas of physics. On page 56, theorists **Edward Farhi** and **Aram Harrow** give an introduction to the fascinating world of quantum information science.

Our educational program was also in the news this year with our first full courses going online on the edX platform. **Walter Lewin** thrilled thousands of students around the world with his electromagnetism course this spring; I was one of those receiving a certificate of completion! On page 46, **John Belcher** tells the story of 8.02x. Our faculty also helped initiate the physics education program at Singapore University of Technology and Design. I'm proud of our faculty's efforts to continually improve education at MIT while also inspiring and teaching many people around the world: this



Justin Knight Photography

summer, **David Pritchard** offered a mechanics review course on edX and Walter Lewin's classical mechanics course starts there in September 2013. Speaking of MIT, this year we awarded 37 PhD degrees and 104 physics bachelors degrees, a big increase over recent years. The last time we graduated so many bachelors degrees was 1976!

Our success is made possible by the efforts of many, including our alumni and friends. We are very grateful to all who have contributed to us. Support for graduate students remains our highest priority given the challenging national research funding climate for new faculty. If you are able, please consider donating to the Arthur Kerman Fellowship. An anonymous donor will match up to \$250K all new gifts in support of this fellowship. We hope to reach the \$1M goal and fully endow the fellowship by December 2013, for which we need help. All donors who make a commitment of \$65K or more will become a member of the Patrons of Physics Fellows Society and will enjoy a close partnership with our remarkable students. For more information on supporting the Department, please contact our Director of Development, **Erin McGrath**, at either 617.452.2807 or emcgrath@mit.edu.

It has been a great privilege and pleasure to serve the MIT Physics community as Department Head during the past six years; I now move on to the new position of Institute Community and Equity Officer. I urge you to remain connected to the Department by visiting our website, web.mit.edu/physics, by joining our Facebook page, or by following @MIT_Physics on Twitter. If travel brings you to Cambridge, please visit us. In the meantime, the Department welcomes your comments at physics@mit.edu.

With best regards,

Edmund Bertschinger

Head, Department of Physics