



N O T E F R O M T H E C H A I R

*This is our third issue of **ENGenious** and I am coming up on my third anniversary as Division Chair for the Division of Engineering and Applied Science. One of the accomplishments that I'm very proud of is the establishment of a strategic plan for the Division, developed with the help of representatives from each of the options and major centers in the Division. This plan is guiding our educational programs, our faculty hiring, and our fundraising activities, and is being further developed by faculty planning committees in each of the major thrust areas. If you'd like to have a look, it's available online at http://www.eas.caltech.edu/strategic_plan; we would welcome your comments and feedback.*

Our feature piece reports on the formation of Caltech's Information Science and Technology Institute (ISTI), one of the major elements of our strategic plan. The article fills almost one-third of this issue, indicating how important and far-reaching the research and teaching efforts of this new venture will ultimately be. Campus-wide, one-fifth of the faculty and one-third of all students will be involved in this multi-layered, multidisciplinary exploration of the analysis and design of complex natural and synthetic information systems. With its center of gravity in E&AS, ISTI will give us tremendous reach in bringing the best and brightest to Caltech, creating an approach that is likely to be emulated elsewhere, and changing the way the world thinks about and harnesses information. ISTI is a rare opportunity to pull the future a little closer.

As we look around the rest of this issue, you will notice an addition to one of the regular features. Our Alumni section profiles two alums, a younger one (graduated within the last 5 years) and a more established one. We hope you'll enjoy (and reminisce) reading about the post-Tech adventures of Ivett Leyva (PhD '99) and Eric Garen (BS '68).

Sincerely,



RICHARD M. MURRAY

Chair, Division of Engineering and Applied Science



Image at left: Domain patterns in the ferroelectric material PbTiO_3 obtained by using polarized light microscopy. Such microscopic patterns form spontaneously in ferroelectric materials giving rise to unique electro-mechanical properties which are useful for applications in micromachines. Nine faculty members from E&AS are investigating how such patterns can be engineered to produce desired properties well beyond those currently available, and at the limits of what is theoretically possible (see <http://www.femuri.caltech.edu>). This photograph was taken by graduate student Rongjing Zhang in the laboratory of Professor G. Ravichandran. The area imaged is about 2.5 mm x 1.2 mm.