

Fall 2015

Dear Management Science and Engineering Alumni and Friends,

As we begin a new academic year, I am wrapping up my four-and-a-half-year tenure as department chair to turn my attention back to teaching and research, and I am pleased to welcome my colleague, Nick Bambos, as the new chair, effective January 1. Margaret Brandeau will join him as associate chair. I am personally excited about what they will accomplish to move our vision for the department forward over the next several years. You will hear more from them soon.

In my final letter as chair, I'd like to share a summary of the Management Science & Engineering (MS&E) department's achievements during the past four years, along with reflections on what we seek to contribute to academia and society.

There is a popular icebreaker sometimes asked at parties: "If you could have any superpower, what would it be?" Having served as department chair, I now appreciate more than ever the superpowers that our faculty, students, and alumni already possess — above all, the ability to use the tools of our field to help address today's challenging business and social problems.

MS&E is a unique department in that it offers world-class teaching and research that reflects our strengths in both quantitative methods and in the behavioral sciences. Furthermore, MS&E sits within the unique Stanford academic culture and within the larger Silicon Valley ecosystem. Our department is at the forefront in terms of creating new analytic tools, models, and algorithms that address the issues that are arising in an online world that includes markets, social networks, the emerging "sharing economy," etc. We further have the ability to apply the latest behavioral understandings to address questions related to how companies and organizations can exploit these new technologies in the workplace, better manage technology enterprises, and increase the likelihood that technology startups will be successful.

Because we have both quantitative and behavioral strengths, we can do new things that draw upon both perspectives. For example, the analysis of online community structure is of great interest both to social scientists and to the many companies that use social media to connect to their customers. The department recently hired two new faculty members in the area of computational social science, thereby establishing the department as a campus leader in this important new academic discipline. These faculty members will draw upon our existing strengths in computation, data science, and core social science, and will help create new teaching and research opportunities for MS&E that will take the department in directions that we believe are strongly aligned with the emerging 21st-century information economy.

This strategic investment is representative of the new ways in which we can draw upon both our quantitative and behavioral strengths. We seek to constantly create new business and societal impact by providing a unified platform for addressing a wide variety of complex issues lying at the intersection of management, policy, and technology.

As you've read in previous MS&E newsletters, our people come to the rescue by deriving insights that dispatch help to those in need, save lives, protect civil liberties, build companies, and create disruptive technologies that change how we buy, share, and interact with one another. Unlike any other engineering department in the country, we add a behavioral component to our leading-edge use of big data and related decision analytics tools. This combination helps companies, policymakers, and others make complex, critical decisions.

Where other institutions put up walls between disciplines, we embrace an intellectual open floor plan to foster cross-disciplinary efforts, including those outside our own department. For example, our new Accel Innovation Scholars (AIS) initiative, created and run by our Stanford Technology Ventures Program (STVP), supports 12 Stanford Engineering PhD students from a variety of disciplines in discovering the skills and possibilities of technology commercialization, opportunity evaluation, and entrepreneurial leadership.

During the last four years, we have taken specific steps to position MS&E, our students, and others within our ecosystem for a future that will increasingly draw upon MS&E's strengths. Here are a few examples:

- **New Faculty Members:** We have hired five new professors during this period who work in computational social science, economics, operations management, and organizational learning and design. They are employing innovative methods to answer big questions. We are pleased to welcome these brilliant young academics, who will define what we look like in 2025. I introduced **Melissa Valentine** in my 2013 letter to you. We have recently welcomed four more professors:
 - **Itai Ashlagi** was previously on the faculty at MIT and is interested in game theory and the design and analysis of marketplaces, with an emphasis on matching markets. For example, his work influenced the practice of kidney exchange to increase hospitals' donor pools.
 - **Sharad Goel** currently has three papers under review—an analysis of Fourth Amendment issues with NYC's stop-and-frisk program, a study of media bias using crowdsourcing, and research about the economics of online third-party advertising.
 - **Markus Pelger** earned his PhD at the University of California, Berkeley, and has research interests in asset pricing, financial econometrics, corporate finance, and risk management. For example, a recent paper addressed optimal stock option plans for managers.
 - **Johan Ugander's** most recent work seeks to demystify online social network assembly. His work commonly falls at the intersections of graph theory, statistics, optimization, and algorithm design.

- **New Curricula:** Last year we revised our Master’s program from top to bottom, for the first time in 12 years, and are this year introducing new undergraduate and PhD curricula. The world has changed dramatically since our last updates. Now all MS&E students will gain exposure to both the quantitative and behavioral dimensions of our field while retaining the flexibility to follow their interests.
- **Cementing Our Position as Thought Leaders:** Our faculty and students have garnered dozens of prestigious awards during this period, demonstrating that we continue to lead the field with cutting-edge research, set the agenda for our discipline, and turn out entrepreneurial students who have mastery of the latest data-driven analytic methods and behavioral understandings.
- **National Science Foundation (NSF) “Epicenter”:** Through STVP, we are in the final stretch of a five-year initiative to facilitate entrepreneurship and innovation learning in undergraduate engineering education nationally. Dubbed “Epicenter” for National Center for Engineering Pathways to Innovation, this outreach and research effort is helping to transform the way engineering is learned. We are very proud of what this team has accomplished and the long-term impact it will have on engineering education across the country.

These are just a few examples of our efforts to stay at the forefront of our field and keep you proud. Please visit our website for more details: msande.stanford.edu.

MS&E BY THE NUMBERS

MS&E continues to be one of the largest and most diverse departments in the School of Engineering. Here are a few interesting statistics:

- MS&E Faculty: 33
- Active Adjunct and Affiliated Faculty: 47
- Number of PhD students: 103
- Number of courses offered: 163
- Undergraduate degrees conferred in 2015: 61
- Graduate degrees conferred in 2015: 169

NEW BOOKS

MS&E faculty have recently authored four new books you might enjoy:

- *Simple Rules: How to Thrive in a Complex World* by **Kathleen Eisenhardt** and Donald Sull
- *Insight Out: Get Ideas Out of Your Head and Into the World* by **Tina Seelig**

- *The Ethically Responsible Engineer: Concepts and Cases for Students and Professionals* by **Robert McGinn**
- *Scaling Up Excellence: Getting to More Without Settling for Less* by **Bob Sutton** and Huggy Rao

TRANSITIONS

Steve Barley has recently retired as a professor emeritus after a long and illustrious career with MS&E. We look forward to his continued participation in the department as he also enjoys the advantages of retirement.

On a sad note, our much-beloved Professor Emeritus **Hank Riggs** passed away on June 10. We will miss him dearly and will always remember his extraordinary contributions to our field.

STAY IN TOUCH

It's been my honor and pleasure to serve as chair of this magnificent department. As we look to the future, I hope you'll continue to maintain a strong and vibrant connection with MS&E and each other, regardless of where you are in the world. You can update your contact information in the alumni section of our website msande.stanford.edu. We also welcome your ideas and offers of help through email to msande-chair@stanford.edu.

With my best regards,



Peter W. Glynn
Thomas W. Ford Professor
Chair, Department of Management Science & Engineering