

Department of Statistics News

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Chair Trevor Hastie and Student Services Officer Amy Duncan on Commencement Day

Letter from the Chair

Statistics is thriving as a field and so is the Stanford Statistics Department. The demand for well-trained statisticians has never been higher, especially in the financial, biotech, web/infospace, and pharmaceutical industries. Our graduates continue to be in great demand, and high profile companies like Google, Microsoft, and Goldman Sachs have shown success in luring our top [PhD graduates](#) away from academic careers.

The Department of Statistics has so much to recommend it. We have a terrific faculty, supported by wonderful staff, and are blessed with outstanding students. Apart from our top-rated flagship PhD program, we have two MS programs which have attained strong reputations, as well as the popular [M&CS](#) undergraduate major.



The MS in [Financial Math](#) is a joint Math/Stat program that will celebrate the tenth anniversary of its founding in 2009. The number of applicants topped 370 this year, with a target class size of between 25 and 30.

Our MS program in [Statistics](#) is also growing in stature. This year we had over 100 applications for 30 positions, and we are finding both these pools ever more attractive for recruiting PhD students.

Our [PhD](#) program continues to draw about 100 applicants every year, from which we admit about ten. Currently we have 48 PhD students at various stages of their programs.

We have recently had some exciting additions to our faculty. In 2006 the Department gained two new assistant professors, **Nancy Zhang** and **Andrea Montanari** (a joint appointment with EE), and this year we added one more, **Bala Rajaratnam**.

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Ted Anderson

[T.W. Anderson](#) turned 90 in June, 2008. To celebrate this milestone, the Departments of Statistics and Economics organized a special conference in his honor over June 6th and 7th. In presenting their research, the invited speakers pointed out Ted's fundamental contributions and the over-arching influence of his early work.

Kenneth Arrow, 1972 Nobel Laureate in Economics, gave an overview of the early developments in econometrics, and profiled Ted's contribution to econometrics during his time on the Cowles Commission. The list of speakers included many of Ted's former students, coauthors, and colleagues. More details

about the presentations are available at the [conference web page](#).

At the end of the second day, a [special issue](#) of the *Journal of Statistical Planning and Inference* published in recognition of his birthday was presented to Ted by J.N. Srivastava, Editor-in-Chief of the journal.

■ Tze Lai ■

Brad Efron

On May 13, 2008, the department held a "Bradfest" to mark the occasion of [Brad Efron's](#) 70th birthday as well as the publication of his selected works, *The Science of Bradley Efron: Selected Papers*, edited by Carl Morris and Robert Tibshirani. While Brad agreed to the conference and celebration, he requested that it be a small event and asked that people "not act like I'm already dead."

About 50 people from Stanford and Berkeley attended. John Kimmel from Springer presented Brad with a leather-bound copy of the new book, which was already Brad's favorite part of turning another year older. Then there were presentations by Carl Morris and Trevor Hastie on topics representing the 'bookends' of Brad's career, from his work on Stein shrinkage to Least Angle Regression. This was followed by speeches both funny and serious and a photo retrospective of Brad's life narrated by his partner of over 20 years, Donna Spiker.

The results of a week-long caption contest were announced as part of the festivities. The picture was taken when Brad was at the White House to receive his National Medal, and many [hilarious entries](#) were submitted in response to the unique occasion it captured. The winning entry belonged to Jacob Bien, who received his very own autographed copy of *The Science of Bradley Efron*.

In the evening, a group of faculty and friends went to dinner at the Faculty Club, where more speeches and reflections were offered by Donna and long-time colleague and friend, Tom Cover.

■ Rob Tibshirani ■



"Two experts at standard errors."

Tom Cover

For more than 40 years Tom Cover has held a joint appointment in the Statistics Department and the Information Systems Laboratory in Electrical Engineering. During those years, Tom has become one of the world's noted experts on information theory and related topics.

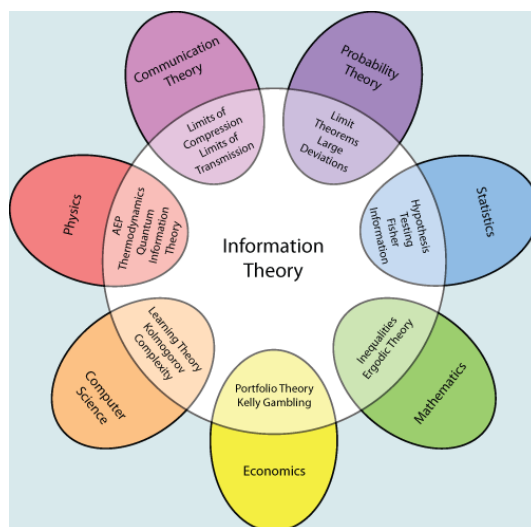
Just a few of those topics were highlighted in the logo for Tom's [70th birthday party](#), seen here. A conference, dinner and celebration were staged by the two departments on May 16, 2008. Abbas Gamal, the director of ISL, started things off, and talks from an international array of scientific notables followed.

The conference concluded with a multimedia retrospective of Tom's life and works, composed by Sergi Verdu of Princeton. A posh cocktail party and banquet at the Cantor Arts Center, with warm tributes by Brad Efron, Dave Forney, Peter Hart, Tom Kailath, Carl Morris, Joy

Thomas, and host Marty Hellman, ended the day's festivities.

There was still more to come, though, as the next day Tom and his wife Karen hosted a barbeque at their Palo Alto home for all the attendants, more than 100 in all!

■ Brad Efron ■



OTHER NEWS

Seen at Amazon.com

Life Distributions: Structure of Nonparametric, Semiparametric, and Parametric Families is the latest release from Albert W. Marshall and [Ingram Olkin](#), released in Summer, 2007.

The new book by [Tze Lai](#) and Haipeng Xing is titled *Statistical Models and Methods for Financial Markets* and is now out.

January 2009 will see the publication of *Self-Normalized Processes: Limit Theory and Applications*, by Tze with Victor de la Pena and Qi-Man Shao, written to mark the 100th anniversary of the 1908 introduction by William Gosset of Student's t-statistic. ☐

Upcoming Events

The next [Seminar on Stochastic Processes](#) is

being organized by **Amir Dembo**, **Persi Diaconis** and **Andrea Montanari**, and will be held at Stanford over March 26--28, 2009. Plenary speakers on the program include Omer Angel (University of Toronto), Maury Bramson (University of Minnesota), Sourav Chatterjee (University of California, Berkeley), Christina Goldschmidt (University of Oxford) and Scott Sheffield (Courant Institute). ☐

From the Editors

We are interested in news about our alumni!

Please email updates and milestones to stat-newsletter@lists.stanford.edu.

Albert Bowker, 1919 – 2008



While he was Chancellor of the University of California at Berkeley, Al once said to his President, David Saxon: "David, if I believe half the things I am told about you, I think you ought to be institutionalized. Remember that, will you, about me?"

More tributes to Al:

- ❖ [Stanford News Service](#)
- ❖ [The City University of New York](#)
- ❖ [UC Berkeley News](#)

In so many ways Al Bowker was a man for all seasons. He became the inaugural Chair of the Statistics Department at Stanford, serving from 1947 to 1963 when he became Chancellor of The City University of New York. In 1977 Al returned to California as Chancellor of The University of California at Berkeley. In 1980 he was appointed as the first Assistant Secretary for Postsecondary Education in the newly formed US Department of Education. He became the founding Dean of the School of Public Affairs at the University of Maryland in 1981, and went on to be named Executive Vice President. He returned to The City University of New York Research Foundation in 1986, where he served as Vice President for Planning until 1993.

Albert Hosmer Bowker was born in Winchendon, Massachusetts, on September 8, 1919. He received his BS degree in Mathematics from MIT in 1941, before joining the wartime Statistical Research Group (SRG) at Columbia. His thesis topic on asymptotic distributions was suggested by Harold Hotelling and approved by Ted Anderson. He

received his doctorate from Columbia in 1949, after Stanford had already recruited him.

Al was a talented leader and developer. At Stanford he helped the Mathematics Department become an eminent organization in applicable math (a term Al preferred to 'applied mathematics'). He had the foresight to attract George Forsythe to campus with the idea of starting a department of computer science, possibly the first in the country. He also formed the Applied Math and Statistics Laboratory and obtained ONR support to sustain it.

A key feature in Al's thinking was that a statistics department would not be large, and that it would be wise to have joint appointments with other departments. Thus the Statistics faculty had joint appointments with Psychology, Math, Economics, Education, Earth Sciences, Electrical Engineering, and the Medical School. As a result, a rather small department has had great influence within the university.

Al was always concerned with what we now call diversity and equity. While he was Chancellor at

CUNY he expanded the university from four senior colleges and a few community colleges to 18 campuses. He implemented a policy of open enrollment designed to permit all students to attend at least one of these. The policy was controversial, but he believed that it was untenable for an all-white university to be located in the heart of Harlem without welcoming the full community. Another example came in 1988, when Al was president of The Cosmos Club in Washington DC, an all-male club for its entire 110 years. Female visitors were not even allowed to walk through the front doors, but were expected to use a side entrance. One of Al's first acts was to change the by-laws to allow women to become rightful members.

The New York Times noted that Al demonstrated extraordinary vision in promoting access and excellence in public higher education, to which we can add that he was a promoter of Statistics in every way that he could find. He will be missed by all those who knew him, and by future students and faculty who continue to benefit from the exemplary efforts of his lifetime.

Sam Karlin, 1924 – 2007

Professor Samuel Karlin made fundamental contributions to game theory, analysis, mathematical statistics, total positivity, probability and stochastic processes, mathematical economics, inventory theory, population genetics, bioinformatics and biomolecular sequence analysis. He was the author or coauthor of ten books and over 450 published papers, and received many awards for his work. Sam was famous for his work ethic and for guiding more than 70 PhD students during his academic career. To describe the collection of his students as astonishing in excellence and breadth is to understate the truth of the matter. It is easy to argue that Sam was the foremost teacher of advanced students in his fields of study in the 20th century.

Karlin was born in Yonova, Poland, on June 8, 1924. He came to Chicago as a young child and attended the Illinois Institute of Technology, where he graduated with a BS in 1944. He earned his PhD in Mathematics from Princeton University in 1947 under the direction of the celebrated Salomon Bochner. His first

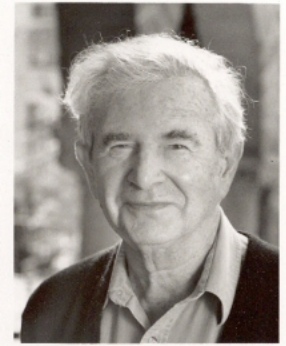
academic position was at the California Institute of Technology, where he attained the rank of Professor in 1955. In 1956 Karlin moved to Stanford, where he was Professor of Mathematics and of Statistics. In 1978, he was named the Robert Grimmett Professor of Mathematics. For six years starting in 1970, Karlin divided his time between Stanford and the Weizmann Institute of Science in Rehovot, Israel, where he rose to become Head of Applied Mathematics as well as Dean of what is now the Faculty of Mathematics and Computer Science.

Professor Karlin received many honors, including elected membership in the American Academy of Arts and Sciences, the National Academy of Sciences USA, and the American Philosophical Society, an association of which he was especially proud. He received a National Medal of Science in 1989, the Lester R. Ford Award of the Mathematical Association of America, and the John von Neumann Theory Prize of the Operations Research Society of America. From 1975 to 1981 Karlin was the Andrew D. White Professor-at-Large of

Cornell University. He gave many invited lectures, including the Josiah Willard Gibbs Lecture of the American Mathematical Society, the Sir Ronald Fisher Lecture of the Royal Society of Great Britain, the Mahalanobis Memorial Lecture of the Indian Statistical Institute, and the first of the Abraham Wald Memorial Lectures of the Institute of Mathematical Statistics.

While Sam Karlin's early research interests focused on game theory, inventory theory, total positivity, approximation theory, and stochastic processes, more recently his principal areas of concern were molecular biology and bioinformatics. Besides an extraordinary depth and breadth of research, Sam had an unparalleled role as adviser and teacher of Ph.D. students. One former student said that Karlin had "an uncanny sixth sense about the capabilities, interests, and psychological makeup of each student," knowing "when to intervene with close guidance, [and] when to leave [each student] alone to struggle." This gift is so very rare, and we are fortunate that Samuel Karlin used it to guide his teaching for so many decades.

■ Richard Olshen and
Burton Singer ■



Former grad student Burt Singer has a clear memory of what it was like to be outside Karlin's office at Stanford. "The door was closed, but it might just as well have been open. You could hear the shouting."

More tributes to Sam:

- ❖ [Stanford News Service](#)
- ❖ [The New York Times](#)
- ❖ [Lee Altenberg's Math Genealogy Page](#)

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Letter from the Chair

(Continued from Page 1)

[Nancy Zhang](#) graduated from our department in 2005 with **David Siegmund** as her advisor, and then spent a year and a half as a post-doc at UC Berkeley working with Terry Speed. Nancy specializes in genomic applications of statistics.

[Andrea Montanari](#) received a PhD in theoretical physics from the Scuola Normale Superiore in Pisa, Italy. From 2002 until 2006 he was Chargé de Recherche at Laboratoire de Physique Théorique de l'Ecole Normale Supérieure, Paris. Among his many interests are the theoretical aspects of graphical models and large assemblies of elementary components.

Bala Rajaratnam received his PhD from Cornell University, and joined Stanford in 2007 as a post-doc. Luckily for us he was here during our search for a new assistant professor, and we snapped him up. Bala works on graphical models.

In addition, there was the 'new' appointment of [Iain Johnstone](#), who finished four years in the H&S Dean's Office. We were afraid that his apparently unmatched ability (and willingness) to get his mind around the financial issues facing the School would lead to indefinite incarceration in the administration.

Our faculty continue to haul in awards. In July, 2007, **Brad Efron** received the [National Medal of Science](#) for 2005, awarded by the President of the United States at a ceremony in the East Room of the White House. **Nancy Zhang** received one of four silver prizes in the [New World Mathematics Awards](#) for her PhD thesis work. **Jonathan Taylor** received the 2008 [André-Aisenstadt Mathematics Prize](#) for his work in Gaussian random fields. **Andrea Montanari** was the recipient of an NSF Career Award in 2008 and co-awarded the [ACM Sigmetrics](#) Best Paper Award. He was also invited to give a mini-course at the XII Brazil Graduate School of Probability in August 2008, which he co-taught with **Amir Dembo**. Amir himself will give the Lévy Lecture at the 33rd [Conference on Stochastic Processes and Their Applications](#) for the Bernoulli Society, to be held in Berlin in 2009. **Jerome Friedman** will be the 2009 IMS Wald Lecturer at the [Joint Statistical Meetings](#) in Washington, DC. **David Siegmund** gave the [IMS Rietz Lecture](#) for 2007, **Rob Tibshirani** delivered the IMS Medallion Lecture in the same year, and **Jonathan Taylor** will be the IMS Special Invited Lecturer for 2009. Graduate student **Daniela Witten** was one of two winners of the 2008 [Gertrude W. Cox Scholarships](#) presented by the ASA Committee on Women in Statistics and the Caucus for Women in Statistics.

I am happy to report that during my chairmanship the number and quality of the [social functions](#) have increased. In separate events we celebrated the arrival of our new faculty, Brad's National Medal and later his [70th birthday](#), and **Ted Anderson's 90th**. We are getting quite good at this now, and even have a secret Department [wine cellar](#), although it does not (yet) compete with those found at Oxford and Cambridge.

■ Trevor Hastie ■