

PUBLISHED PAPERS

Baker J.W. and Cornell C.A., 2008. Vector-valued intensity measures for pulse-like near-fault ground motions, *Engineering Structures*, 30 (4), 1048-1057.

Baker J.W. and Cornell C.A., 2008. Uncertainty Propagation in Probabilistic Seismic Loss Estimation, *Structural Safety*, 30 (3), 236-252.

Baker J.W., Schubert M., and Faber M., 2008. On the Assessment of Robustness, *Structural Safety*, 30 (3), 253-267.

Baker J.W. and Faber M., 2008. Liquefaction risk assessment using geostatistics to account for soil spatial variability, *ASCE Journal of Geotechnical and Geoenvironmental Engineering* 134 (1), 14-23.

Tothong P., Cornell C.A., and Baker J.W., 2007. Explicit-directivity-pulse inclusion in probabilistic seismic hazard analysis, *Earthquake Spectra* 23 (4), 867-891.

Baker J.W., 2007. Quantitative classification of near-fault ground motions using wavelet analysis, *Bulletin of the Seismological Society of America* 97(5), 1486-1501.

Sarabandi P., Kiremidjian A., Eguchi R., Application of Statistical Inferencing Techniques in Building Inventory Compilation, *5th International Workshop on Remote Sensing Applications to Natural Hazards*, September 10~11, 2007, Washington, D.C.

Sarabandi P., Kiremidjian A., Terrain Dependent Correspondence Search for 3D Urban Modeling Using Multiple High-Resolution Satellite Images, *URBAN2007*, April 11~13 2007, Paris, France.

THE JOHN A. BLUME EARTHQUAKE ENGINEERING CENTER
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Blume Center News continued from page 1

On April 24, **Prof. Greg Deierlein, Abbie Liel and Charlie Kircher** also presented three related papers at sessions on the ATC 63 project and collapse assessment by nonlinear analysis at the 2008 ASCE Structures Congress in Vancouver.

THREE BLUME CENTER STUDENTS WIN OUTSTANDING STUDENT PAPER

Three Ph.D. students from the Blume Center have won the American Geophysical Union 2007 Fall Meeting Outstanding Student Paper Award. Pablo F. Sanz (*Finite element modeling of fracture reactivation and bedding slip during folding*) Fushen Liu (*An extended finite element algorithm for cracks with rate- and state-dependent coefficient of friction*) and Joshua A. White (*Stabilized low-order finite elements for simulating coupled solid deformation and fluid flow in fault zones*).

All three papers were written with their advisor, Ronnie Borja.

The new address for the Structural Engineering & Geomechanics offices is:

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All phone numbers and email addresses remain the same.



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STRUCTURAL ENGINEERING & GEOMECHANICS OFFICES MOVE TO Y2E2

In January, the program and faculty offices that were located in Terman Engineering moved into the recently completed Yang & Yamazaki Environment & Energy (Y2E2) Building located at the corner of Panama and Via Ortega. The Blume Center is still located in Building 540.

The Y2E2 Building will be one corner of the new SEQ2, along with the School of Engineering Building which is currently under construction and due to be completed in 2009. The other two buildings which will make up the new quad will be the Nano Center (due to be completed in 2009) and the Bioengineering/Chemical Engineering Building (due to be completed in 2010).

The SEG staff, faculty and student offices join the rest of Civil & Environmental Engineering, as well as such diverse groups as the Woods Institute for the Environment, the Global Climate and Energy Project, the Center for Ocean Solutions, the Precourt Institute for Energy Efficiency, the Environment and Natural Resources Law and Policy Project, the Program on Food Security and the Environment and the Bill Lane Center for the Study of the North American West.

Two new laboratories for the SEG program in the Y2E2 building are being completed and have been put to use right away. One is the new Structures & Geotech teaching laboratory that houses equipment for the soil mechanics and foundation engineering classes, structural models for the introductory structural engineering course and table-top testing equipment for materials testing and the annual spaghetti bridge competition. The second lab is a research lab dedicated to research on new construction materials with low ecological impact. The current focus of this lab is on developing and characterizing biobased composites that can replace petrochemical plastics and composites as well as wood and engineered wood in the construction industry. The lab houses two fume hoods, a temperature controlled room, a respirometer for controlled degradation studies, a large oven for structural component fabrication and a Weatherometer to study the impact of accelerated aging of materials.



Students in the new Structures/Geotech Lab test spaghetti bridges during the annual competition.

BLUME CENTER NEWS

On September 27, **Prof. Greg Deierlein** presented the paper, "Assessing Building Collapse Performance and Associated Requirements for Seismic Design" at the 2007 SEAoC Annual Convention. Co-authored by **Curt Haselton** (Ph.D. 2007), **Abbie Liel** (Ph.D. 2008) and **Charlie Kircher** (Ph.D. 1979) the paper describes to collapse assessment procedure employed in the recently completed ATC 63 project to standardize procedures for evaluating seismic response factors (R-factors) and related criteria for seismic design.

In October, 2007, **Prof. Jack Baker** spoke on *Ground motions and intensity measures as a link between seismology and engineering* at the California Institute of Technology.

Prof. Jack Baker was on the Invited Discussion Panel regarding Ground Motion Selection at the Annual Technical Meeting of the Consortium of Organizations for Strong Motion Observation Systems (COSMOS), in Emeryville, CA on November 9.

From November 18-20, **Prof. Helmut Krawinkler** attended the International workshop on Measures for the Prevention of Total Collapse of Existing Low-Rise Structures, held in Istanbul, Turkey. He gave an invited presentation on "How to Predict the Probability of Collapse of Non-ductile Building Structures".

Prof. Jack Baker spoke at the 8th Pacific Conference on Earthquake Engineering, Nanyang Technological University, in Singapore, Dec. 5-7. His talk was entitled, *Measuring bias in structural response caused by ground motion scaling*.

Prof. Jack Baker was invited to give a lecture, *Risk-based assessment of robustness: what can it do and what can't it do?*, at the European Union Robustness of Structures, 1st Workshop (COST Action TU601). ETH Zurich, Switzerland. February 2008.

On February 4, **Prof. Helmut Krawinkler** attended a symposium on "Recent Advances in Mechanics of Solids and Fluids" held in Vienna, Austria, to honor Prof. Franz Ziegler at the occasion of his 70th birthday.

Prof. Jack Baker taught a Short Course on Probabilistic Seismic Hazard Analysis at the Nuclear Regulatory Commission in Washington D.C. on Feb 11-12

Prof. Kincho Law was invited to speak at the Distinguished Lecture Series, The Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin, March 4. His lecture was entitled, *Emerging Applications of Computing, Information and Communication Technologies in AEC*. Prof. Law also spoke on *Wireless Sensing for Structural Monitoring and Control* as part of the Structural Engineering Seminar Series, The Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin on March 5.

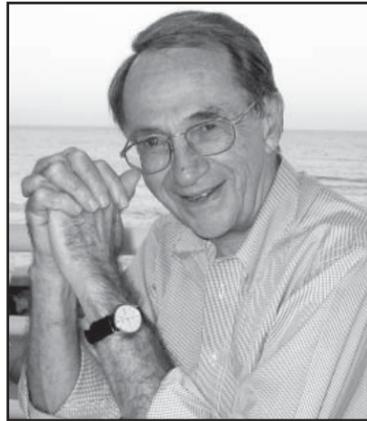
Dr. Renate Fruchter organized and chaired a session on Collaboration: People, Creativity, and Media and made a presentation on GLOBAL TEAMWORK ECOSYSTEM at the 6th MediaX Conference, March 3-4.

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In Memoriam

C. Allin Cornell 1938-2007

With great sadness do we convey that Allin Cornell passed away after a two year struggle with cancer on December 14th, 2007, at the age of 69.



C. Allin Cornell was born in 1938 in Mobridge, South Dakota. He received his three academic degrees at Stanford; an A.B. degree (1960) in architecture, and an M.S. degree (1961) and Ph.D. degree (1964) in civil/structural engineering. His 1964 PhD dissertation, *Stochastic Process Models in Structural Engineering*, and his 1971 book, *Probability, Statistics, and Decision for Civil Engineers* (co-authored with Stanford Professor Jack Benjamin), laid the foundation for his pioneering work in modeling random environmental loads on structures and determining the structural response to those loads. His book remains a standard reference for students and researchers to this day.

After graduating, Allin served on the faculty at MIT from 1964 to 1983 before returning to Stanford as a research professor. At Stanford, he held a half-time research appointment while doing consulting work on a half-time basis. This arrangement allowed him to more easily facilitate the transfer of his research into practice, where it has seen widespread adoption due to his efforts.

Allin's impact on structural engineering, seismology, and geophysics is immeasurable. He brought rigorous mathematical approaches for uncertainty assessment into all three fields. His seminal paper on "Engineering Seismic Risk Analysis", published in 1968 in the *Bulletin of the Seismological Society of America*, is the foundation for modern seismic risk assessment methodologies known as Probabilistic Seismic Hazard Analysis. This work was the basis for the first seismic hazard map based on probability theory, published by the US Geological Survey in 1976. Today, his ideas form the basis by which regulatory documents and building codes quantify structural loads due to earthquake shaking.

In addition to Allin's well-known contribution of Probabilistic Seismic Hazard Analysis, he had an important but less quantifiable impact through his advocacy of probability as a decision-making tool. At the beginning of his career, earth scientists (and engineers to some extent) relied fully on deterministic models and resisted quantifying the uncertainty in their knowledge base. Allin instead advocated the use of Bayesian decision theory to quantify lack-of-knowledge uncertainty and make optimal decisions in the face of this uncertainty. When he advocated this approach in his 1971 book, it was a rare perspective. But thanks to Allin's dedication, clarity of communication, and continued demonstration of its benefits, this perspective has become widely adopted in the fields of building code calibration, seismic hazard mapping, and recent performance-based engineering guidelines.

Allin's pioneering work has been recognized through many awards and honors. In 1981 he was elected to the National Academy of Engineering at the age of 43. The Earthquake Engineering Research Institute has honored him as the 1999 EERI Distinguished Lecturer and has awarded him the Institute's highest honor, the Housner Medal, in 2003. The Seismological Society of America has given him its most prestigious award, the Harry Fielding Reid Medal, in 2001, and the American Society of Civil Engineers has awarded him the Huber Research Prize in 1971, the Moisseiff Award in 1977, the Norman Medal in 1983, and the Freudenthal Medal in 1988. He was the inaugural recipient of the International Civil Engineering Risk and Reliability Association's CERRA Award in 1987. He is one of only a few engineers to be elected as a Fellow of the American Geophysical Union in 2002. These many honors from the diverse fields of engineering, earth science, and structural reliability indicate the depth and breadth of his brilliance.

The following quote, written more than ten years ago by Professor Hareesh Shah who has worked most of his professional career in areas similar to those emphasized by Allin Cornell, reflects the high regard for Allin felt by his close colleagues and collaborators: "Allin is by far the finest researcher in the field of probabilistic risk analysis in the world. He has been the intellectual leader of the structural reliability discipline since its early years. I cannot think of any other individual at the intellectual and visionary level in this field as Allin."

The profession will remember Allin for his ground breaking contributions and for his unique ability to combine brilliance in probability with sound engineering knowledge and judgment. His colleagues will remember Allin as a superb collaborator who was always willing to share his deep knowledge and insight for the good of the team. His students will remember Allin as the ideal mentor in every respect. And all of us will remember Allin as a warm, friendly, caring, and helpful human being. Our profession has lost a leader and visionary, but Allin's impact will be felt for a long time through his ideas and the many people he influenced.



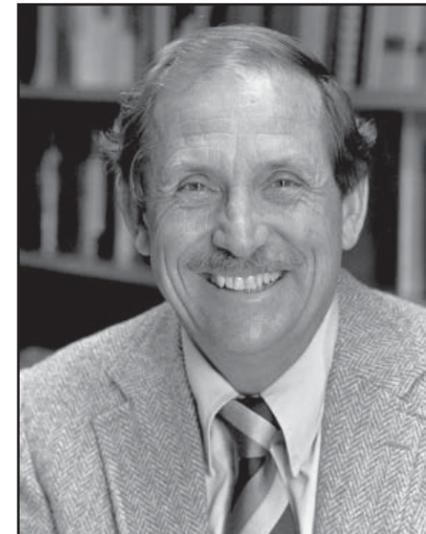
Allin is survived by his wife, Elisabeth Paté-Cornell, who is a professor and chair of the Department of Management Science and Engineering at Stanford, his five children, Eric, Robert, Phillip, and Ariane Cornell and Joan Fazzio, and two sisters, Joan Scheel and Bonnie Bassinger.

In Memoriam

James M. Gere 1925-2008

With great sadness do we convey the news that Professor James M. Gere passed away after a long battle with cancer on January 30, 2008, at the age of 82.

Jim was born in Syracuse, NY on June 14, 1925. He enlisted in the U.S. Army Air Corps at age 17 in 1942, serving in England, France and Germany. In June 1946 he returned to Rensselaer Polytechnic Institute on the G.I. Bill. On completing his B.C.E. degree in 1949 and his M.C.E. degree in 1951, he was awarded one of the first NSF Fellowships and chose to study at Stanford. He earned his Ph.D. in 1954 under the guidance of Stephen Timoshenko and was offered a faculty position in Civil Engineering. He was a member of the Stanford civil engineering faculty from 1954 to 1988.



During his tenure at Stanford he authored or co-authored nine very popular and widely read books. His book on *Mechanics of Materials*, originally co-authored with Stephen Timoshenko, has become a classic of engineering education. His other well known text books, used in engineering courses around the world, include: *Theory of Elastic Stability*, co-authored with Stephen Timoshenko; *Matrix Analysis of Framed Structures and Matrix Algebra for Engineers*, both co-authored with W. Weaver; *Moment Distribution; Structural and Construction Design Manual*, co-authored with Helmut Krawinkler; and *Terra non firma: Understanding and preparing for earthquakes*, co-authored with Hareesh Shah.

Jim served as Department Chair (1967-72) and Associate Dean of Engineering (1960-70 and 1987-88), and in 1974 co-founded the Blume Earthquake Engineering Center and served as its first Co-Director, together with Hareesh Shah. He was invited with colleague Hareesh Shah as the first foreigners to study the earthquake-devastated city of Tangshan, China in 1980.

During his tenure at Stanford and in his retirement Jim had an enormous impact on the life of his students and his colleagues with his superb teaching and mentoring, the many books he wrote, and the outstanding example he set in emphasizing and practicing positive professional and human values. He was universally respected and admired by students, faculty and staff at the university. Jim always felt that the opportunity to work with and be of service to young people was one of his great joys. He practiced this joy superbly while active on the

faculty, and continued to be a most valuable member of the Stanford community during his retirement when he gave freely of his time to advise students and to guide them on various field trips to the California earthquake country.

Jim was an avid hiker and runner and lover of nature. He regularly visited Yosemite and the Grand Canyon national parks. He made over 20 ascents of the Half Dome in Yosemite as well as "John Muir hikes" of up to 50 miles in a day. In 1986 he hiked to the base camp of Mount Everest, saving the life of a companion on the trip. Jim was a dedicated runner and completed the Boston Marathon at age 48, in a time of 3:13.

On a personal note, there will never be a better and wiser colleague than Jim Gere. He was a father figure to all of us who joined the faculty between 1954 and 1988. He mentored and advised us by example and with unselfishness and humbleness. Jim always stressed the positive in even the most precarious situation. He was the steady support who held us together and made us work as a team. His cheerful personality and wonderful smile will be forever present in our minds and hearts. He was a true gentleman and he was just the nicest person, much respected by all. How fortunate we all are that Jim touched us by being part of our lives and careers. We will miss Jim enormously.

Jim is survived by his wife of 61 years, Janice; daughter Susan, sons William and David, grandchildren Clifford and Rachele Gere of Hollister and Dewitt Durham of Palo Alto, and brothers Frederick of Roseville, CA and William of Cheshire, CT.

