DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ILLINOIS

MEMORIAL SERVICE
IN MEMORY OF HEINI HALBERSTAM

TUESDAY, APRIL 29, 2014

- Opening remarks
 Matthew Ando, Professor and Chair, Department of Mathematics, University of Illinois

- Video clip 'From China to Urbana-Champaign'
  This documentary, about the Chinese student population at the University of Illinois during the past 100 years, features Heini and Doreen Halberstam. Published April 9, 2014.

- Earl Berkson, Professor Emeritus, Department of Mathematics, University of Illinois

- Bruce Berndt, Professor, Department of Mathematics, University of Illinois

- Edward Bruner, Professor Emeritus, Department of Anthropology, University of Illinois

- Kevin Ford, Professor, Department of Mathematics, University of Illinois

- Harold Diamond, Professor Emeritus, Department of Mathematics, University of Illinois

- Michael Halberstam, son of Heini and Doreen Halberstam

PLEASE JOIN US IN 239 ALTGELD HALL FOR
A RECEPTION IMMEDIATELY FOLLOWING THE SERVICE.

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1867
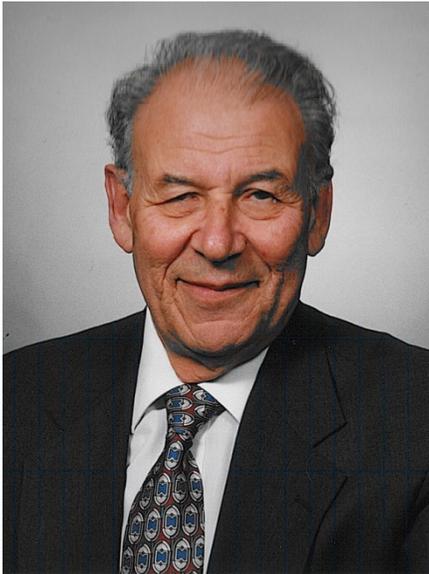
Heini Halberstam
1926-2014

Heini Halberstam died at home in Champaign, Illinois on January 25, 2014 at the age of 87. He had a mathematical career extending over 60 years and had been active until the last months of his life. Heini was an internationally known figure in number theory, particularly for his work in sieve theory. In addition to his scholarship, Heini was treasured for his encouraging and optimistic manner, beautiful writing, energy, and his interest in people.

Heini was born in 1926 in Brux, Czechoslovakia, where his father was the rabbi of the Orthodox congregation. When he was ten years old, his father died, and he and his mother, Judita, moved to Prague. After the German invasion of Czechoslovakia, Heini's mother arranged for him a place on a Kindertransport train to London. He never saw her again, as she died after being deported to a Nazi work camp. After several placements in England, Heini had the good fortune to come in the care of Anne Welsford, who recognized his ability and encouraged and supported him through his university studies.

At the University of London, Heini studied mathematics and earned his PhD degree in 1952 under the direction of Theodor Estermann. After holding faculty positions in Exeter and Royal Holloway College, Heini was appointed in 1962 to a named professorship at Trinity College, Dublin. From there he moved to the University of Nottingham, where he served at various times as Head of Department and Dean of the Faculty.

Soon after Heini secured a position in Exeter, he married Heather Peacock. They had four children, two of whom live in the U.S. and two in Britain; Heather was tragically killed in a road accident in 1971. Heini subsequently married Doreen Bramley, who has two children, who reside in Britain. They have eight grandchildren.

Heini came to the Illinois Department of Mathematics in 1980, served as Department Head 1980–1988, and retired as Emeritus Professor in 1996. To mark Heini's retirement, the Illinois Math Department held an international conference on number theory in his honor. During his career, Heini held visiting positions at Brown, Michigan, UC-Berkeley, Syracuse, Ohio State, Paris, Ulm, Scuola Normale Superiore at Pisa, Tel Aviv, York, Hong Kong, and Matscience (India).

Heini's research ranged over several areas of analytic number theory, including Waring's problem, mean value theorems, probabilistic methods, combinatorial number theory, and small and large sieves. Some of his research collaborators were Harold Davenport, Peter Elliott, Klaus Roth, Hans-Egan Richert, and Harold Diamond. His conjecture with Elliott about the distribution of prime numbers in arithmetic progressions is of great interest and remains one of the outstanding problems in this area.

Heini was an author of several influential research monographs. One, with Roth, *Sequences*, served to make accessible research in several areas of number theory, particularly sums of integers from given sequences and the probabilistic method of Erdös and Renyi. Another, *Sieve Theory*, with Richert, provided accounts (some for the first time) of important work of Brun, Selberg, Rosser-Iwaniec, and J.-R. Chen. Also, his long-time collaborations, first with Richert and then with Diamond, led to the book *A Higher Dimensional Sieve Method*. The last project was supported by computational work of several of Diamond's students, particularly William Galway.

Heini supervised 14 PhD students and many masters students and postdocs. Several of his students went on to distinguished careers, among them Kevin Ford of the Illinois Department of Mathematics. Heini also had a life-long passion to improve mathematical instruction. At Nottingham, he helped start the Shell Centre for Mathematical Education, was a director of the Centre, and was a member-at-large of the International Commission on Mathematics Education, 1979–1982. He continued work in mathematical education after coming to the U.S. and published several articles on this subject.

Heini was a member of the London Mathematical Society for 59 years, and he served as an LMS Vice President and secretary of the LMS Journal. Also, Heini was a member of the American Mathematical Society for 57 years. In addition, he was a member of the editorial board of several journals, and he wrote over 150 Mathematical Reviews. Further, Heini served as an editor or co-editor of some 10 volumes of collected mathematical papers and conference proceedings.

He was elected to the Royal Irish Academy in 1963 (resigned 1966) and was a Fellow of University College, London, from 1967 onward. Heini gave an invited one hour lecture at an American Mathematical Society annual meeting in 1980, and was named a Fellow of the AMS in 2012.

Over the years, Halberstam held research grants from the U.S. Army, NATO, and the National Science Foundation. A gifted writer, Heini was frequently called upon for expository articles, obituaries, and book reviews. An example of Heini's talent is provided by his review in the AMS *Notices* of *The Indian Clerk*, a fictionalized account of the interaction between the celebrated mathematician Ramanujan and his patron, G. H. Hardy.

One of Heini's post-retirement projects was to visit Prague and follow his mother's path of deportation. More recently, he participated in a reunion organized by the Kindertransport Association, and he gave talks in Champaign and other towns in Illinois on the Holocaust and his personal experiences in the Kindertransport.