

IASPEI MEDAL WINNER 2015

International Cooperation for Better Understanding of the Earth

The award of a IASPEI medal has been decided during the General Assembly in Melbourne and will be assigned at the IASPEI Opening Plenary in Prague.

The IASPEI medal is awarded for merits in seismology: for sustaining IASPEI goals and activities and for scientific merits in the field of seismology and physics of the earth's interior.

The IASPEI Bureau is in charge of taking the decision about who will be the recipient.

Nominations of candidates were collected this year until December 31, 2014.

The IASPEI Bureau is proud to announce that it has unanimously selected as the IASPEI Medal recipient **William H. K. Lee**.



William H. K. Lee, IASPEI Medal 2015

LAUDATIO

Awarding the 2015 IASPEI Medal to Dr. William H. K. (Willie) Lee, Emeritus Scientist U. S. Geological Survey, recognizes a career of leadership in seismology and study of physics of the earth's interior -- a career marked by a strong emphasis on international cooperation and sharing of data and procedures and marked by organization of, and significant contributions to, important projects that are specifically identified with IASPEI.

Willie received his B.Sc. degree in Physics and Geology from the University of Alberta, Edmonton. He did graduate studies at the University of California, San Diego, and University of California, Los Angeles. He received his Ph.D. from the latter in 1967. Early contributions were on the subject of his dissertation, the thermal history of the earth, and on heat-flow measurement and analysis. As a graduate student, Willie served on the International Heat Flow Committee, a precursor to his extensive future involvement with international organizations.

Willie came to the U.S Geological Survey (USGS) in 1967 and was soon involved with pioneering observational studies of small earthquake activity on the San Andreas Fault system in central California. Working with Jerry Eaton and others, Willie created the first large-scale continuously-telemetered local seismic network designed to systematically study local earthquakes, which by 1970 had over 100 stations in the San Francisco Bay Area. By the early 1980's the network had grown, in partnership with Caltech, to span the entire San Andreas Fault system and many hundreds of field sites. Willie oversaw all aspects of the network operations in Menlo Park, from selection of field sites to the detailed standards for processing and cataloging the data. He is well known for his rule of π , which states that "everything takes π longer than planned and costs π more than budgeted." Willie used the network to conduct microearthquake studies throughout his pre-retirement career at the USGS: in 1981 he and colleague Sam Stewart published an influential monograph, *Principles and Applications of Microearthquake Networks* (Academic Press).

The studies of central California seismicity led Willie and his USGS colleague John Lahr to write a computer program, HYPO71, for the determination of earthquake hypocenters recorded by a local seismograph network. About 1000 copies of this program were requested and distributed worldwide, and the program is still in use today. Beyond HYPO71, Willie has a strong interest in seeing that software, whether his own or that of others, be made widely available, and he early recognized the importance of personal computers in enabling the dissemination of seismological software. He chaired the IASPEI Working Group on Personal Computers, established in 1988, and edited the IASPEI Software Library, which made a suite of computational tools available through the Seismological Society of America.

In the mid-1970's, Willie and co-authors published journal papers that drew attention of non-Chinese seismologists to catalogs of Chinese earthquakes that had important implications for the understanding of earthquake risk outside of China. Notably, the catalogs spanned millennia and documented the existence of sources in China that would not have been identified in catalogs spanning only a few centuries. These papers broadened the perspectives of many who were mapping seismic hazard in countries for which catalogs cover only a few centuries. Willie's intention that data from diverse earthquake catalogs be incorporated into a comprehensive data-base has continued and has included recent work on the GEM earthquake catalog.

In the late 1970's, Willie began addressing the problem of preserving seismograms from the pre-digital age, so that records of early earthquakes would be available to be reexamined in light of future seismological hypotheses, new analysis methods, and future data. A discussion between Willie and Igor Nersesov in 1976, an IASPEI general assembly resolution in 1977, and the establishment of a joint IASPEI/UNESCO Working Group on Historical Seismograms led to the Historical Seismogram Filming Project, in which over a half-million paper seismograms from globally significant seismographic stations were microfilmed. The project is described in a monograph by Lee, H. Meyers, and K. Shimazaki, *Historical Seismograms and Earthquakes of the World* (Academic Press, 1988).

Willie is a very collaborative scientist, and his strategy for acquiring collaborators is proactive. A characteristic pattern is that he recognizes an important opportunity in seismology, identifies expertise that is necessary to realize the opportunity, and develops a collaborative project with scientists who possess the necessary expertise.

This approach yields innovative research contributions or makes important data sets available to the entire seismological community, and the approach generates communities of scientists who share Willie's interest in the underlying seismological issues. The converse also happens. Other seismologists, well aware Willie's vision and effectiveness, seek out Willie to help on projects that are particularly important to them.

Willie formally retired from the USGS in 1995, but he has continued to make significant contributions to international seismology. A major post-retirement accomplishment was his co-editorship of the two-printed-volumes, three-CD, *International Handbook of Earthquake and Engineering Seismology*, published on the occasion of the IASPEI centennial year. This Handbook involved participation of over 1200 scientists from more than 50 countries. Willie has been a driving force behind growing interest in rotational seismology. He organized an international conference on rotational seismology in 2005, followed by special sessions at AGU meetings in 2006 and 2008, the 2009 publication of a special issue of BSSA on "Rotational Seismology and Engineering Applications" (W.H.K. Lee, M. Celebi, M. I. Todorovska, and H. Igel, eds.), and field tests of rotational sensors in Taiwan. He also co-edited a special journal issue on heterogeneities in the earth's lithosphere. He maintains his efforts to insure preservation of historical seismograms, with a focus now on digitizing data that are currently preserved on microfilm. To this end, he has organized the *SeismoArchives* project at Incorporated Research Institutions for Seismology (IRIS) as a joint project between IRIS, IASPEI, and the USGS. He is concerned that a significant fraction of the world's record of interpreted earthquake data is in danger of being lost, and he advocates, in part by the example of his own efforts, for the scanning and cataloging of seismographic-station bulletins for use by future generations of seismologists.

The IASPEI Bureau, May 2015