Citations for the Test-of-Time Award from 1994

Awards Committee: Tierry Coquand
Dexter Kozen (chair) Leonid Libkin Frank Pfenning

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Two awards were made in 2014 to honor outstanding papers from the IEEE Symposium On Logic In Computer Science 1994 held in Paris, France.

> The Groupoid Model Refutes Uniqueness of Identity Proofs by Martin Hofmann and Thomas Streicher.

This paper opened a series of investigations leading to the development of homotopy type theory, an area of intense current research that touches on the very foundations of the field. The paper contained two key insights: first, that it follows from the rules of type theory that types have a groupoid structure; and second, that groupoids form a model of type theory. The results were quite surprising at the time and opened up a new front in the quest to understand the tradeoffs between intensional and extensional type theory. Although later revised and extended by the authors and others, the original insights were in the original LICS paper and were an essential forerunner of more recent developments on univalent foundations that led to homotopy type theory in its present form.

> A Multiple-Conclusion Meta-Logic by Dale Miller.

Jean-Yves Girard had introduced linear logic about seven years prior to the appearance of this paper and, in several subsequent papers, cemented its role as a quintessential, unifying logic. In this 1994 LICS paper, Miller showed that linear logic could also be used as a logical framework, providing means for the elegant, high-level representation of formal systems. Miller gives examples from the domains of logic (natural deduction) and programming languages (operational semantics, including effects). This appropriated linear logic for purposes of practical specifications of stateful and concurrent systems. This work has been quite influential over the years and even up to the present with the currently active area of behavioral types.