Tony Hoare’s long career in computing is studded with seminal engineering and scientific contributions to Programming Languages; his views on programming language design have been recognized as profound even by those who declined to follow his advice.

Two contributions stand out as fundamental: the development of what is now known as Hoare logic, and Communicating Sequential Processes. Hoare logic is a system for reasoning about imperative programs. It was introduced in the 1969 article “An Axiomatic Basis for Computer Programming”, which is perhaps the most influential 6-page paper ever published in CACM. Drawing on earlier work of Robert Floyd, an entire sub-area of computer science has developed from Hoare’s initial ideas; many modern verification systems build on Hoare logic.

Only 9 years later, CACM published Hoare’s paper on Communicating Sequential Processes (CSP). Contemporary with Milner’s CCS, but pursuing complementary goals, CSP has been enormously influential. It provided the basis for the occam programming language and its realization in the Transputer; it has been used for modeling and verifying the concurrency properties of critical software systems, and inspired a flowering of subsequent concurrency research.

Although either of these contributions would alone justify the achievement award, Hoare is doing more with his Unifying Theories research, which aims to unify theories of programming success parameters, abstraction level and semantic style. Beyond all of this, Tony is renowned for his unflagging courtesy, his inspiration, and his dedication to his chosen calling. He is the epitome of a scholar and a gentleman.

SIGPLAN makes several awards based on nominations from SIGPLAN Members — which means that you can and should make a nomination! Nominations are accepted at any time; those received by 5th Jan are considered for the awards of that year.

The winners of the 2011 Programming Languages Achievement Award is Sir Charles Antony Richard Hoare, FRS, FREng, FBCS.

The winners of the 2011 Software Award are Simon Peyton Jones and Simon Marlow for the Glasgow Haskell Compiler.

The winner of the 2011 Outstanding Doctoral Dissertation Award is Robert L. Bocchino, whose dissertation An Effect System and Language for Deterministic-by-Default Parallel Programming was completed at the University of Illinois at Urbana-Champaign. His advisor was Vikram Adve.

This dissertation makes several significant contributions to the field of parallel and concurrent programming. The main technical contribution is a type and effect system that enables reasoning about non-interference at a fine granularity. A second contribution is support for non-deterministic code sections that are explicitly marked as such. A third contribution is support for object-oriented frameworks, where user extensions are guaranteed to adhere to the framework’s effect restrictions. These contributions are backed by formal models, soundness proofs, and the Deterministic Parallel Java implementation. Evaluation shows that highly satisfactory speedups can be achieved on interesting code bases, sometimes beating the performance of hand-crafted implementations. The members of the award committee were impressed by the quality of the work and the clarity of the presentation.

The winner of the 2011 SIGPLAN Service Award is Prof. Kathryn McKinley, University of Texas at Austin.

Kathryn has served the SIGPLAN community for many years as a researcher, educator, mentor, reviewer, and leader. She has worked in a number of formal SIGPLAN leadership roles, including co-Editor of TOPLAS, Associate Editor of TACO, Program Chair for ASPLOS and PLDI, Editor of “20 Years of PLDI (1979-1999)”, and as a leading proponent of the double-blind reviewing procedures now adopted by many SIGPLAN conferences. She has also served on the steering committees for PLDI, ASPLOS, and OOPSLA (1999-2001), and as Secretary and Treasurer of the SIGPLAN Executive Committee.

Kathryn’s service to the broader programming-languages community beyond SIGPLAN includes her activities on the CRA-W Board as a Regional Mentor, organizer of the CRA-W Programming Language Summer School and CRA-W Workshops on programming languages, operating systems, and architecture. Kathryn has served on the program committees of SIGPLAN’s ASPLOS, PLDI, OOPSLA, CGO, MSP, and ISM conferences, and non-SIGPLAN conferences such as FACT (for which she was also program chair), SIGMETRICS, CC, ICPP, and ISCA.

As a measure of her mentoring skills, Kathryn’s students have also distinguished themselves by winning prestigious awards such as SIGPLAN’s Outstanding Doctoral Dissertation Award, PLDI’s Student Research Competition, and several Best Presentation awards at SIGPLAN conferences. They have also won prestigious graduate Research Fellowships from Microsoft, Intel, Samsung, and the National Science Foundation. As a member of the SIGPLAN community and representative to the broader computing community, Kathryn has hugely influenced the choices of many to pursue successful careers in programming language research and development.

The winners of the award for Most Influential Paper of PLDI 2000 are Vasanth Bala, Evelyn Duesterwald and Sanjeev Banerji for Dynamic A Transparent Dynamic Optimization System.

The winners of the award for Most Influential Paper of ICFP 2000 are Koen Claessen and John Hughes for Quickcheck: A Lightweight Tool for Random Testing of Haskell Programs.

The winners of the award for Most Influential Paper of OOPSLA 2000 are Matthew Arnold, Stephen Fink, David Grove, Michael Hind and Peter F. Sweeney for Adaptive Optimization in the Jalapeño JVM.

The winners of the award for Most Influential Paper of POPL 2001 are Samim Ishtiaq and Peter W. O’Hearn for BI as an Assertion Language for Mutable Data Structures.