

SIGPLAN Awards

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

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 it 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 across paradigm, abstraction level and semantic style. Beyond all of this, Tony is renowned for his unfailing courtesy, his inspiration, and his dedication to his chosen calling. He is the epitome of a scholar and a gentleman.

Each of these awards is selected by a committee. SIGPLAN thanks all of the committee members for their service.

Achievement Award: Andrew Black, Michael Hind, Kathryn McKinley, Jens Palsberg, Peter Thiemann, Philip Wadler.

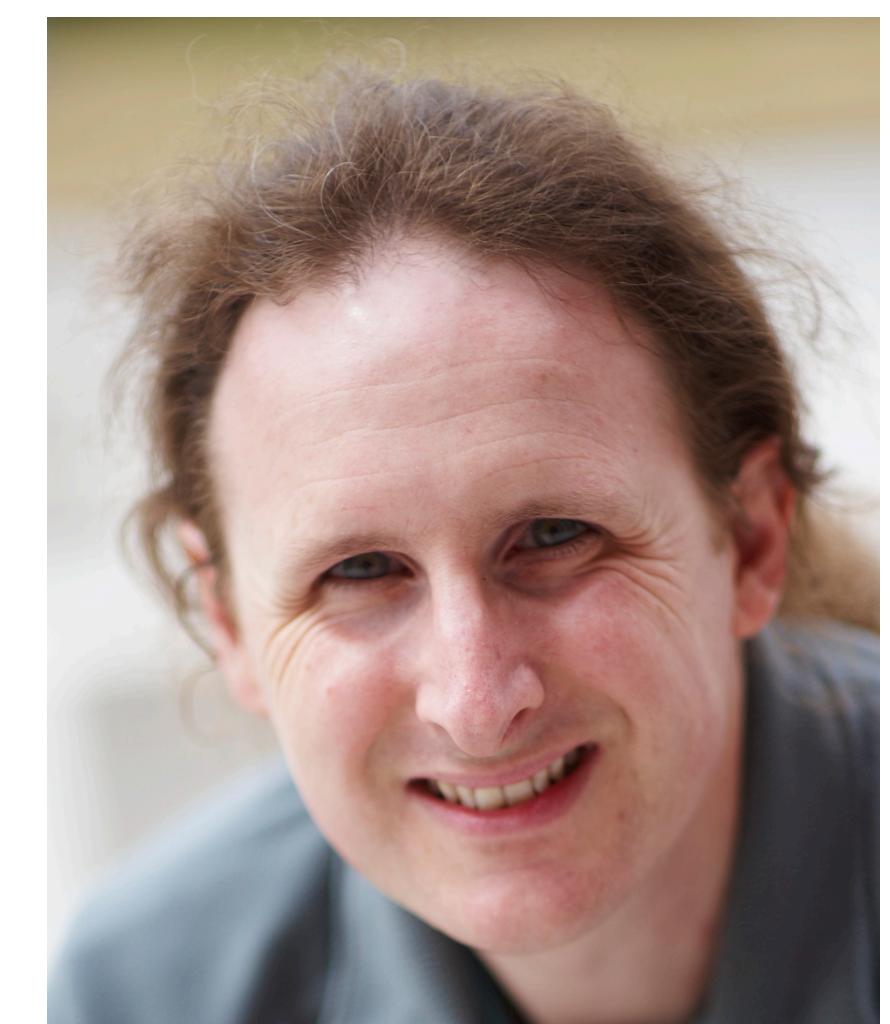
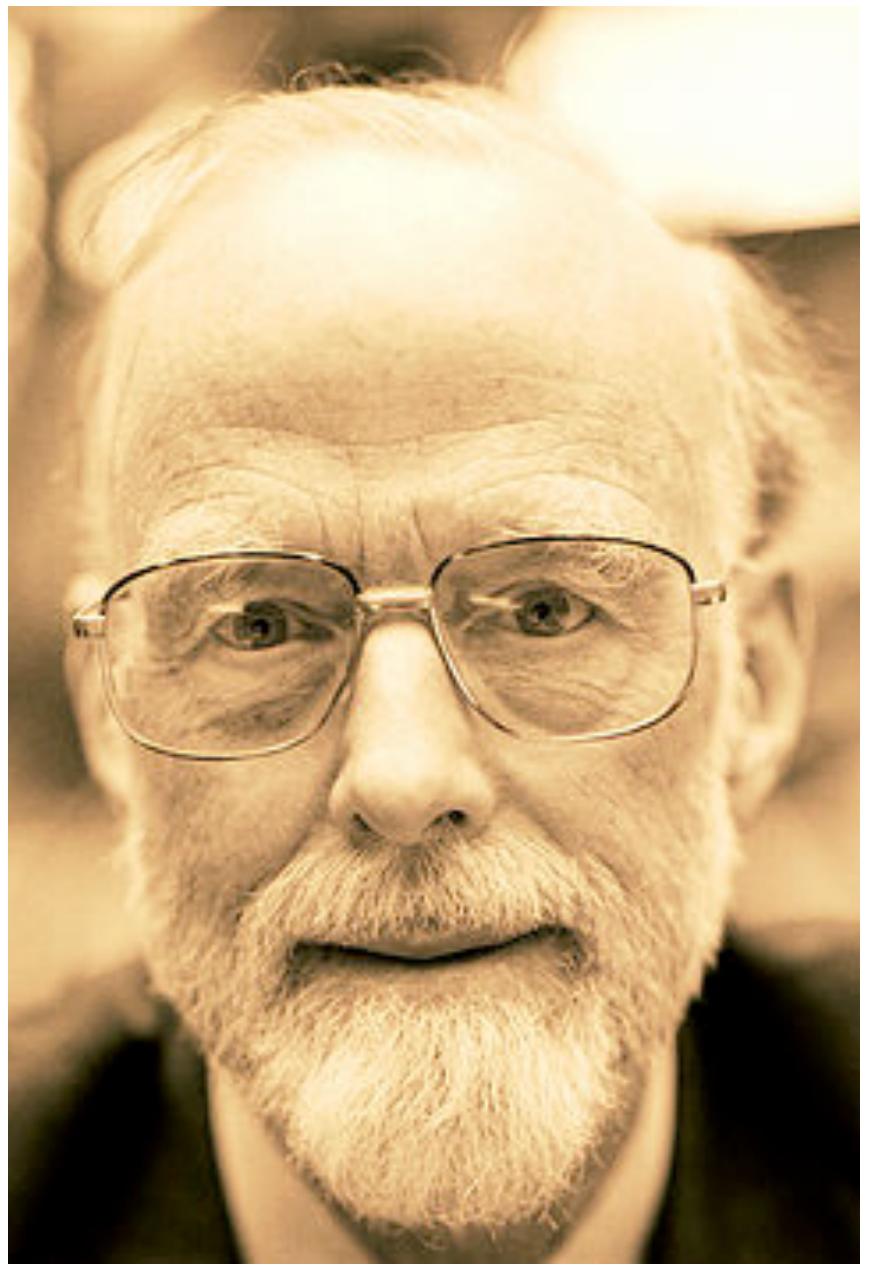
Software Award: Alex Aiken, Andrew Black, James Noble, Jens Palsberg, Peter Thiemann, Philip Wadler.

The **Service Award** is made by the SIGPLAN Executive Committee as a whole.

Outstanding Dissertation Award: Ras Bodik, Matthew Dwyer, Matthew Fluet, Kevin Hammond, Nathaniel Nystrom, Kostis Sagonas, Peter Sewell, Peter Thiemann.

Most Influential Paper Awards: Tony Hosking, Chair. The award given in year N is for the most influential paper presented at the conference held in year N-10. The selection committee consists of the current SIGPLAN Chair, ex officio, a member of the SIGPLAN EC appointed as committee Chair by the SIGPLAN Chair, the General Chairs and Program Chairs for years N-10 and N-1, and a member of the SIGPLAN EC appointed by the committee Chair.

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



Simon Peyton Jones receive the SIGPLAN Software Award as the authors of the *Glasgow Haskell Compiler* (GHC), which is the preeminent lazy functional programming system for industry, teaching, and research. GHC has not only provided a language implementation, but also established the whole paradigm of lazy functional programming and formed the foundation of a large and enthusiastic user community.

GHC's flexibility has supported experimental research on programming language design in areas as diverse as monads, generalized algebraic data types, rank-N polymorphism, and software transactional memory. Indeed, a large share of the research on lazy functional programming in the last 5–10 years has been carried out with GHC.

Simultaneously, GHC's reliability and efficiency has encouraged commercial adoption, in the financial sector in institutions like Credit Suisse and Standard Chartered Bank, and for high assurance software in companies like Amgen, Eaton, and Galois.

A measure of GHC's influence is the way that many of the ideas of purely functional, "typeful" programming" have been carried into newer languages and language features. including C#, F#, Java Generics, LINQ, Perl 6, Python, and Visual Basic 9.0.

Peyton Jones and Marlow have been visionary in the way that they have transitioned research into practice. They have been role models and leaders in creating the large and diverse Haskell community, and have made GHC an industrial-strength platform for commercial development as well as for research.

Simon Marlow and



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 ISMM conferences, and non-SIGPLAN conferences such as PACT (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 *Dynamo: 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 Samin Ishtiaq and Peter W. O'Hearn for *BI as an Assertion Language for Mutable Data Structures*