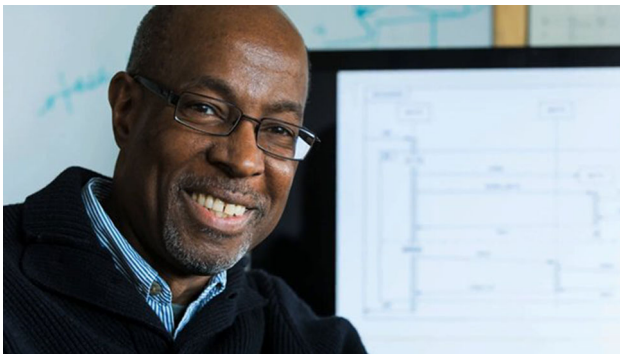


In memory of Robert B. France, Co-Founder and Editor-in-Chief of SoSyM from 1999 to 2015

Marsha Chechik¹ · Geri Georg² · Martin Gogolla³ · Jean-Marc Jezequel⁴ ·
Bernhard Rumpe⁵ · Martin Schindler⁵

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The SoSyM team has been devastated to learn about the passing of Prof. Robert B. France, on the evening of Sunday, February 15th, 2015. His passing was painless, after a battle against cancer. He was 54 years old.



✉ Bernhard Rumpe
Bernhard.Rumpe@sosym.org

Marsha Chechik
chechik@cs.toronto.edu

Geri Georg
georg@cs.colostate.edu

Martin Gogolla
gogolla@informatik.uni-bremen.de

Jean-Marc Jezequel
Jean-Marc.Jezequel@irisa.fr

Martin Schindler
schindler@se-rwth.de

- ¹ University of Toronto, Toronto, ON, Canada
- ² Colorado State University, Fort Collins, CO, USA
- ³ University of Bremen, Bremen, Germany
- ⁴ IRISA/INRIA and University of Rennes 1, Rennes, France
- ⁵ RWTH Aachen University, Aachen, Germany

Robert was a co-founder of SoSyM and served as its Editor-in-Chief since its inception in 1999. He passionately believed that the modeling community needed their own journal to be able to read and publish innovations in the areas of modeling, model languages, use of models, tooling, etc. Throughout the past 16 years, Robert has been a major driving force behind this journal. We dedicate this editorial to his memory.

1 Robert's scientific life

Robert started his scientific life at the University of the West Indies, St. Augustine, Trinidad and Tobago in the Caribbean. He graduated in 1984 and began working as a computer specialist in a project called USAID Census in the St. Vincent office of a US company. In 1986, he moved on to the Massey University in Palmerston, New Zealand, where he received his PhD in Computer Science in 1990. From 1990–1992, he worked as a postdoctoral fellow at the University of Maryland, Institute for Advanced Computer Studies, USA.

Robert was appointed as an assistant professor at the Computer Science and Engineering Department, Florida Atlantic University in Boca Raton, Florida and stayed there for 6 years (1992–1998). In 1999, he moved to the Colorado State University (CSU) in Fort Collins as a tenured Associate Professor and was promoted to a Full Professor in 2004.

In 2006–2007, Robert spent his sabbatical year at Lancaster University in the UK and at IRISA/INRIA in Rennes, France. He also made a number of extended scientific visits: to the University of Nice in 2009 and 2012, to SINTEF, Norway in 2009 and 2011, and the University of Pau in 2003. From 2011, he held a position as a visiting Adjunct Professor at the University of the West Indies. In his visits and travels, he was often accompanied by his wife Sheriffa.

Robert was active at CSU in both organizational and scientific positions for as long as his health allowed him and even helped to organize the Modularity conference which took place in Fort Collins in March 2015.

During his scientific life, Robert made a remarkable number of research contributions. His CV (last updated in August 2014) lists

- 33 journal articles
- 10 book chapters
- 1 invited paper
- 107 refereed conference papers
- 40 refereed workshop papers
- 13 proceedings and journal editorials

and we know that more papers with his name are still being published. As of March 20, 2015, DBLP lists 236 published entries co-authored by Robert, including informal summaries and SoSyM editorials, and an astonishing list of 223 collaborating authors. Google Scholar lists 387 entries! Since he was an Editor-in-Chief of SoSyM from its inception, Robert was never allowed to publish his work there. So his modeling papers were mostly published at conferences. Otherwise, we are sure that his journal paper count would have been even higher!

In addition to his amazing research productivity and a 16-year labor-intensive commitment to SoSyM, Robert was also an active member of IEEE-CS, ACM, and the OMG. In addition, he served on one of the UML task forces as part of his OMG participation. Robert served as a keynote speaker, invited panelist, panel moderator, invited speaker, summer school lecturer, and, in addition, gave numerous talks at companies and conferences all around the world. He also served as an Associate Editor of IEEE Computer (2006–2012) and the Journal of Software Testing, Verification and Reliability (2006–2015). Furthermore, he cared deeply about the Computer Science educational curriculum, serving on the IEEE Computer Society Educational Activities Board (2011–2013). However, his most sustainable scientific service achievement was the role he played in establishing the UML/MODELS conference series. He was the General Chair and the Local Arrangements Chair of the first UML/MODELS conference held in Fort Collins [17], right after an initial UML workshop in France in 1998. This conference series brought together a research community that eventually made SoSyM the success it is today.

2 Robert's honors and awards

Robert's work, passion, and dedication have been recognized by an impressive number of honors and awards. We list some of them below:

- 2015: A special Lifetime award by the MODELS conference. This award will be presented at MODELS'15 in October 2015 in Ottawa.
- 2014: The Caribbean American Heritage Coveted Award. The Institute of Caribbean Studies (ICS) has honored Robert as a notable Caribbean-American, for excellence in science and technology for his long-term commitment, leadership, and achievements in scientific research, education, and service. The award was given to Robert at the 21st Annual Caribbean American Heritage (CARAH) Award Gala on November 14, 2014 in Washington, DC.
- 2014: AITO Senior Dahl-Nygaard Prize in Object Oriented Software Design. Awarded for research on adding formal semantics to object-oriented modeling notations.
- 2014: Colorado State University, College of Natural Sciences Professor Laureate. This is the highest academic title awarded by the College of Natural Sciences and is intended to honor faculty who have made outstanding contributions to its mission with work in the areas of research, teaching, mentoring, and outreach. Awardees display to the rest of the college and university the role model of an excellent senior faculty member.
- 2013: INRIA International Chair (2013–2018), INRIA, France. This award provides funds to visit INRIA laboratories to collaborate on research and give lectures and seminars over a 5 year period.
- 2008: Ten Year Most Influential Paper Award: awarded at MODELS 2008 for the paper: Andy Evans, Robert France, Kevin Lano, and Bernhard Rumpe, "The UML as a Formal Modeling Notation", In *Proceedings of the UML'98 International Conference*, Mulhouse, France, Springer-Verlag, pp. 336–348, 1998.
- 2007: Best Paper Award: MODELS 2007 Workshop on Aspect Oriented Modeling (AOM), TN, USA, Oct. 2007 for the paper: Franck Fleurey, Benoit Baudry, Robert France, and Sudipto Ghosh. "A Generic Approach For Automatic Model Composition".
- 2002: Best Paper Award: International Conference on Engineering of Complex Computer Systems (ICECCS 2002): Geri Georg, Indrakshi Ray, and Robert France. "Using Aspects to Design a Secure System".
- 1999: Best Paper Award: The Tel-isphere'99 Commonwealth of Learning conference, Bridgetown, Barbados: Emanuel Grant and Robert France. "Towards an Internet-Based Education Model for Caribbean Countries".
- 1998: Best Paper Award: The Ninth International Symposium on Software Reliability Engineering (ISSRE'98), Paderborn, Germany: Robert France, Robert Busser, and Maha Boughdadi. "Incorporating a Formal Design Technique in an Industrial Setting".
- 1993: Research Initiation Award / CAREER Award, National Science Foundation, USA.

3 Scientific achievements

A prolific, innovative, visionary researcher. Robert's website says:

"My primary area of research is model-driven development (MDD). MDD research aims to reduce the significant effort currently associated with developing and analyzing large software-intensive systems through the use of modeling languages that provide powerful abstractions, and technologies for manipulating models. Models are created for a variety of purposes, for example, to support formal analysis of functional, security or performance properties, and to support automated generation of testing, implementation, or deployment artifacts. My research group at CSU focuses on:

1. compositional approaches to model-driven software development,
2. managing model evolution,
3. rigorous analysis of software properties using models,
4. use of models to support runtime adaptation of software (models@runtime),
5. model-based development of software-product lines, and
6. domain-specific modeling languages and metamodeling."

Robert was an outstanding researcher. Early in his career he was mainly active in the formal methods area. He felt that formal methods were important to deeply understand and analyze systems and programs. At that time, Robert and others realized that the complexity of systems we develop can only be tamed with the extensive use of models. The next generation of modeling languages that would fit the object-oriented programming paradigm which was dominant at that time, as it is today, was about to converge into the Unified Modeling Language (UML). In 1997, the precise UML group (pUML) started discussions and had its first publications in 1998 [9, 10, 15]. After that, an increasing number of people joined the pUML effort, inspired by the challenge of creating a usable in practice yet precise modeling language. The group met at least twice each year, at appropriate conferences, including at UML/MODELS'99. Robert's interests at that time—bringing together formal methods and usable modeling languages—put him in the front and centre of the pUML effort.

Throughout his scientific life, he continued publishing high-quality papers on analyzing models using precise, if not formal techniques. Some prominent publications include [28] on the analysis of UML behavioral properties, [6, 22, 27] on various aspects of model-based testing, [13] on the question of how to apply formal design techniques in industry, and [14] as early work on the integration of formalisms with informal modeling techniques.

His interests also included combining agility with modeling [25, 26], as well as the more general considerations of

methodological challenges to successfully using models in software development [7, 16, 18].

Robert's research in the last decade focused on the use of aspects in modeling. In [21], Robert and his co-authors discussed adaptivity based on aspects in a model-driven setting and in [24], the development of service-oriented systems with aspects. Ghosh et al. [20] discusses how to apply aspects to describe distributed applications. France et al. [19] and Reddy et al. [23] discuss ways of integrating aspects into design modeling and composing design models using aspects.

A novel and exciting research direction grew out of the use of aspects for variability modeling. In [4], Robert and his co-authors discuss the possibility of using aspect-oriented techniques for feature modeling. Acher et al. [2] extends this approach to decomposition techniques on feature models, and, finally, [3] and [5] concentrate on feature-based development proposing a domain-specific language FAMILIAR for managing large-scale feature models.

Robert was also interested in a variety of specific uses of modeling. For example, in [1] he and his colleagues discussed questions of security based on a generalized role-based access control model that includes geographical and temporal aspects.

In his most recent line of research, he was collaborating with colleagues in the newly formed GEMOC initiative on the globalization of modeling languages [8]. This initiative includes both the loose and the tighter coupling of tools, e.g., for editing or simulating models of several languages as well as language composition. Robert was extremely excited about the possibility to finally be able to efficiently combine several heterogeneous modeling languages, each describing individual aspects and views of the overall system within a single project. A need for this kind of globalization within a precisely defined set of modeling languages, ideally with formal semantics, goes back to Robert's early research work, and, in fact, all the way to his Ph.D. thesis.

The papers discussed above are only some of highlights of the consistently innovative work that Robert has done over his 20 years of academic activity, starting with his first workshop paper at SERF'95.

A tireless and passionate community builder. Robert was passionate about research community building. Beyond the pUML initiative, setting up the UML (MODELS) conference series, and the founding of the SoSyM Journal, he actively promoted various initiatives aimed to facilitate increasing the maturity of MDE and building a community around it. We single out two of such initiatives:

- the ReMoDD initiative which aims to create a repository of models on which to build sound and reproducible experimental results; and

- the GEMOC initiative which aims to develop the foundations, methods, and tools that facilitate the creation, integration, and automated processing of heterogeneous modeling languages.

A talented and dedicated educator. Robert was not only an outstanding researcher but also a dedicated and talented educator. Sharing his knowledge with students, mentoring them, and seeing their success gave him true joy. He was an inspiring speaker who, at the same time, was always accessible to his students. In 2014, Colorado State University named him *Professor Laureate*, the highest honor that can be awarded to a professor, in recognition of his teaching talent and his dedication to his students.

Outside of his university, he actively participated in modernizing and improving the Computer Science Curriculum, by serving as a member of the *IEEE/ACM Computer Science Curriculum Recommendation, CS2013* and as a head of the committee on *IEEE Curricula*. He ran the international program REUSSI—an exchange program for US students in INRIA, France—and mentored many researchers around the world, helping them understand the challenges and rewards of being a researcher, and develop scientific rigor as well as effective communication and collaboration skills.

4 Our personal relationships

Robert has 351 friends at LinkedIn; most of them active members of the modeling community. At LinkedIn, he was also a member of two groups: UML&FM and Jazz group—his favorite leisure activity. This high co-author count is a testament to Robert's approach to research—he was always interested in discovering, discussing, and understanding new scientific questions. He was brimming with enthusiasm and ideas. He was also a perfect collaborator: extremely reliable, hard working, full of ideas, and at the same time extremely friendly, open, and welcoming. All of us collaborated with Robert at various times in his life, on scientific or organizational projects, and all enjoyed this collaboration immensely.

All members of the SoSyM team knew Robert for many years and all consider him to be their personal friend. Yet among us, it was Bernhard who had the longest working relationship and friendship with Robert. We have asked him to highlight a few episodes of this relationship.

Bernhard: “I first met Robert at a workshop on Applying Formal Methods to Object-based Distributed Systems, in 1997. With similar background and interests, we immediately found ourselves involved in passionate discussions

about a variety of research topics. These discussions led to joint publications on UML (the Unified Modeling Language), on issues of formalizing modeling languages, meta-modeling, etc. [9–12, 15]. Robert became one of the principle researchers in the newly formed pUML (precise UML) group.

My discussions with Robert led us to collaborate in a number of research service activities. In 1998, after the first UML workshop, I was asked to organize a follow-up, but I agreed to do this only together with Robert. He recognized the important role such a conference could play in giving a voice to the budding modeling community and graciously agreed. So, in 1999, the two of us ran the first UML conference in Fort Collins, Colorado, with Robert as General and Local Arrangements Chair, and myself as Program Chair. Putting together the local organization and the financing, and dealing with all the bureaucracy was a major endeavor, which Robert handled with his usual humor and grace. He was a perfect organizer!

Based on the success of the '99 conference, Robert, Jean Bezivin, Piere-Alain Muller, and myself formed the UML/MODELS Steering Committee, which Robert chaired, to ensure that the conference continues to run annually. The important role that this conference series has played in the scientific community is due to the large extent to Robert's leadership on this steering committee and the tone he set at UML'99.

Together with Robert, we also started the Journal on Software and Systems Modeling (SoSyM) with a special issue based on that first UML'99 conference. Since that time, Robert acted as Editor-in-Chief of SoSyM, working closely with all the editors, authors, and reviewers to build up the journal's reputation, set its vision, and keep the journal a success. For Robert, SoSyM was really the labor of love. He put his heart and soul into it, helping turn it into the premier publication venue it is today.

Throughout all these years, through all the events and activities, I was truly blessed with having Robert as my colleague, my collaborator, and my close personal friend. We often crossed the Atlantic to work with each other. Through a number of long-term visits to Fort Collins, I got to tour Colorado with Robert and his wife Sheriffa (including a very cold and very windy trip to the top of the Rockies in 2013), shared terrific dinners and wine tastings with them, and had passionate research conversations with Robert that went deep into the night. We celebrated Robert's last birthday together with all participants of a Dagstuhl seminar on Globalizing Domain-Specific Languages, many of them being close friends of Robert's, in a small German winery in October 2014. Even at that seminar, as always, Robert was full of passion, enthusiasm, and ideas.”

5 Robert and SoSyM

The International Journal on Software and Systems Modeling (SoSyM) published its first issue in the Summer 2002. A large number of people and organizations had to come together to get the journal off the ground. The list includes Springer (initially Mr. Engesser and now Mr. Gerstner who act as an interface to many other staff members helping us out behind the scenes), scientific advisers such as Jean Bezivin and Pierre-Alain Muller and all the editors and those brave first authors who sent in their good papers, helping make SoSyM a success. However, SoSyM's success is due, to the greatest extent, to the vision, perseverance, good taste, and endless energy that Robert has put into his job as one of its two Editors-in-Chief. At that time, it was necessary to market the journal at various conferences, to precisely define the guidelines for a rigorous yet fair reviewing process, etc. Robert did that with persistence, creativity, and grace.

SoSyM became a success and in a second phase, it needed to continue to run smoothly as the number of submissions steadily increased. Robert and Bernhard divided their responsibilities, with Robert managing the regular papers and Bernhard the special issues and expert voices. That was the time when Geri Georg and Martin Schindler started helping

out with the journal as well. They concentrated on the workflow of papers, allowing Robert to concentrate his energy on the initial reading and judgment of papers, their distribution to Associate Editors, managing critical cases, and also stepping in when various problems arose. Like any other journal, SoSyM was not immune to having authors complain about their papers being unfairly rejected, double submissions (which, to our knowledge, all have been detected before publication!) and plagiarism. Robert handled many of such cases—always politely but firmly and fairly.

As the number of submissions and published manuscripts continued to increase, two years ago we have restructured the process of handling papers yet again, introducing three Associate Editors-in-Chief—Martin Gogolla, Marsha Chechik, and Jean-Marc Jezequel. Their role is to do the initial judgment of new manuscripts, before they are sent out for a detailed review, as well as to manage the assignment of Associate Editors to papers. This restructuring enabled Robert to take a more strategic role in the development of SoSyM.

SoSyM would simply not exist in its current shape without Robert and without the tremendous job he has done on it in the past 16 years. For example, this issue breaks another record in the number of pages in it. All these terrific papers that we are so excited to publish!



This is a picture of the first SoSyM Editorial Board Meeting, UML 2002, October 2002—Dresden, Germany. Back (top stair, left to right): Michael Jackson, Steve Cook, Bran Selic, Jean-Marc Jezequel, Jean-Michel Bruel, Bernhard Rumpe, Martin Gogolla, and Heinrich Hussmann. Front (bottom stair and below, left to right): Stuart Kent, Robert France, Geri Georg, Perdita Stevens, and Hermann Engesser. We were all so proud of the successful start of SoSyM.



Only a few years later, the journal became well established. This is a picture from the meeting during the MODELS/UML 2005 conference in Montego Bay, Jamaica, where Robert was born. Just prior to this picture being taken, he explained the current status of SoSyM and how it had changed over the last year. Also on the picture (clockwise order on the table: Jean-Michel Bruel, Heinrich Hussmann, Bran Selic, Unknown, Martin Gogolla, Steve Cook, and Stuart Kent).

6 Robert's life and family



This picture shows his 2014 birthday at Dagstuhl.

Robert was born on October 8th, 1960 in Jamaica and was raised in Guyana and St. Vincent. He studied Computer Science in Trinidad & Tobago, then moved to New Zealand for his Ph.D., and then to the US for his professorship positions.

He was warm and gentle, compassionate and kind, encouraging and helpful. He was full of positive energy. He loved sports, played a guitar, and enjoyed Jazz and Caribbean reggae. He was a devoted family man, had two children—

Richard and Jeanelle—and a loving wife Sheriffa. In recent years, she often accompanied him, both on his long sabbatical as well as on shorter visits to conferences.

Robert did not slow down or stop working when he found out about his cancer. He definitely wanted all of us to continue making modeling a success. He once said that it was his family and his work that kept him alive, let him think of positive things, and distracted him from his illness. He died on February 15th after a long struggle with his cancer at

home, in peace, with Sheriffa by his side. He and his family decided that he should be buried in St. Vincent, where he was raised and where his parents still live.

Our deepest condolences to Robert's family: his wife Sheriffa, son Richard, daughter Jeanelle, his grandmother and parents, his sisters and brothers, and many nieces, nephews, and cousins. Rest in peace, dear Robert!

The SoSyM team.

Marsha, Geri, Martin, Jean-Marc, Bernhard, and Martin

7 Further information on the web

The following are some of the websites describing Robert's work and giving tributes to him on his passing:

- Robert's website with CV, projects, and publications: <http://www.cs.colostate.edu/~france/> and http://q.b5z.net/i/u/10104311/f/Dr._Robert_France_Bio.pdf
- Tribute to Robert from his friends at IRISA/INRIA: <http://people.irisa.fr/Benoit.Combemale/tribute-robert-france>
- Colorado State University <http://www.natsci.colostate.edu/2015/02/20/the-passing-of-robert-france-professor-of-computer-science/> and <http://source.colostate.edu/in-memory-robert-france/>
- The Models Conference Special Lifetime Award <http://cruise.eecs.uottawa.ca/models2015/RobertFrance.html>
- Video laudatio on Robert' Excellence in Science and Technology Award by CSU <https://vimeo.com/110493837>
- About the Caribbean American Heritage (CARAH) Award <http://thevincentian.com/dr-robert-france-to-receive-coveted-award-p6758-1.htm>
- Repository for Model Driven Development (ReMoDD) <http://www.cs.colostate.edu/remodd/>

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