

Toronto Section Celebrates, and Celebrates, a Milestone

BY ALEXEI BOTCHKAREV

When the [external cardiac pacemaker was declared an IEEE Milestone in Electrical Engineering and Computing](#) in 2008, the Toronto Section didn't just pick a day and hang a plaque. Instead, it had a party—one that lasted 15 months. I was the section chair at the time and we realized that no single event could reflect the greatness of the technical achievement and its impact on humanity. And so our section celebrated the event from almost the day we learned the pacemaker was to become an IEEE Milestone. Other sections would do well to follow our lead.

The pacemaker was developed in 1950 at the University of Toronto Banting Institute. There, Drs. Wilfred Bigelow and John Callaghan successfully paced the heart of a dog using an external electronic pacemaker-defibrillator with implanted electrodes. John Hopps, a scientist at the National Research Council of Canada, developed the device, which led to the use of cardiac pacemakers in millions of people. It also marked a starting point for the discipline of biomedical engineering and the whole industry of electronic medical devices.

Our section nominated the pacemaker for a Milestone award in 2006, and it was approved in 2008 by the IEEE Executive Committee. Typically, the next step would be to hold a dedication ceremony to place the plaque, and that would be it. But we wanted to do more.

We also made a blunt observation: Most IEEE Milestone achievements are well known and have already been recognized long before they become Milestones. IEEE's proclaiming it a Milestone affords no additional value to the achievement. It is IEEE that receives mileage from the Milestone, whether IEEE had a connection to the innovation through its members or not.

Milestones provide IEEE with an opportunity for extensive publicity for the organizational unit that nominated it, and that raises IEEE's public visibility. It's an opportunity that should not be missed. The dedication ceremony for the plaque should be only one step in a series of events. The celebrations have extended news value that can last from a year to 18 months after the Milestone is approved.

Milestone celebrations should be high on a section's priority list, and there should be a consensus among the executive committee members of the activities' importance and of their willingness to participate in them.

A SUCCESSFUL PLAN

We formed an ad hoc Milestone committee of more than a dozen executive committee members to lead and coordinate our activities. Life Senior Member Pelle Westlind led the committee. Senior Member Patrick Finnigan, who initiated the Milestone proposal and spearheaded the efforts to get IEEE approval, continued to play a key role. We gathered and analyzed information on how other sections celebrated their Milestones. The 2008 Sections Congress in September in Quebec was a great opportunity for collecting more information and experiences from other IEEE groups that had held Milestone events.

We also gathered biographical information on Hopps, including his inventions before and after the pacemaker. He had been awarded the 1985 IEEE Canada McNaughton Medal for his "scientific contribution" and for his "leadership in establishing national and international societies in the field of biomedical engineering."

His son, Don, who lives in Ottawa, was invited to help with our efforts, and he joined enthusiastically.

Articles about the pacemaker and Hobbs were written and published in our section's annual [newsletter](#), *IEEE Canadian Review* magazine, and posted on the section's Web site.

SPECIAL EVENTS

We organized several special events. The first was at the Toronto Section's annual meeting in October 2008. Luckily, Medtronic of Canada, a world leader in cardiac pacemaker development and manufacturing, is located in Mississauga, Ont., and its president, Neil Fraser, agreed to speak at the meeting. His talk, "The History and Advances of the Cardiac Pacemakers," was attended by 100 members.

The next event, organized by the section's IEEE Engineering in Medicine and Biology Society chapter, was held in May 2009. The keynote speaker was Shelley McKellar, an associate professor in the department of history at the University of Western Ontario. A specialist in medical history, she spoke on "Repairing the Diseased Heart: The Impact of Medical Engineering." A wine-and-cheese reception accompanied the event, which attracted 50 people.

One of the most important celebrations was a special session on the Milestone topic at the IEEE Toronto International Conference—Science and Technology for Humanity, held in September 2009 at Ryerson University. The conference covered advanced interdisciplinary areas across a broad spectrum of IEEE fields of interest and attracted 360 papers by authors from 29 countries, of which 186 papers were accepted. The special session included presentations by representatives from academia, hospitals, and the medical devices industry on "Cardiac Electrophysiology Advancements," "Electrical Engineering Applied to Cardiac Electrophysiology," "Cardiac Pacemakers: Industrial Perspective," and related topics.

Organizing a symposium or a workshop on a Milestone is wonderful way to pinpoint how the invention stimulated further development of science and industry.

The plaque dedication ceremony took place at the Banting Institute on 26 September 2009 during our conference, some 15 months after we first learned of the Milestone award. About a dozen people, comprising Toronto Section volunteers, representatives of Region 7, and members of Hopps's family, attended. To avoid uncertainties with weather, as well as the difficulties of arranging proper safety and security in a large city, we consciously didn't take a risk of having a large gathering at the site. However, the plaque unveiling ceremony was continued afterward as part of the special session at the IEEE Toronto International Conference. The event was broadcast online.

AFTER THE CHAMPAGNE

Following the dedication ceremony, it might seem that Milestone activities can be considered complete. But not in our case. The final activity was to recap the events at the section's annual meeting in October 2009. That presentation summed up everything done by our Milestone committee.

The IEEE's Milestone Web site doesn't offer advice about post-dedication ceremony activities, but I have two recommendations. Because celebration activities leave behind a large volume of materials, photos, presentations, and other information, these historic documents should be preserved, categorized, and published on a dedicated page on the section's Web site. In addition, inventions assigned a Milestone status continue to have their own "lives" and celebrate anniversaries. It would be good for the section to make a tradition of celebrating those anniversaries, say every 10 years. I also suggest making these two recommendations the official

responsibility of the section hosting the milestone. And it should also consider throwing a party, the way Toronto did.

The author, a senior IEEE member, is an adjunct professor at Ryerson University.

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