

OBITUARY

Nico Nibbering (1938–2014)

A pioneering figure in European and international mass spectrometry and a close personal friend, Nico Nibbering, died on August 25th, 2014. His death coincided with the opening of the International Society for Mass Spectrometry biannual conference in Geneva, Switzerland. This coincidence is compelling because Nico was one of the founders of this society, and he was committed to international cooperation and promoted activities that brought together people from many lands.

Nicolaas Martinus Maria Nibbering (Nico) was born May 29, 1938, in Zaandam, The Netherlands, a small city just north of Amsterdam. His early years were during World War II and the occupation of the Netherlands. He and his wife Tini have some vivid memories of those years, especially the winter of 1944, called *Hongerwinter* (Hunger Winter), which was one of the coldest in Europe, made worse by the occupation and lack of food. Many survived on eating frozen potatoes and tulip bulbs. Nico was raised following the war by his aunt as additional care was needed by a large family during those spartan years. Following his high school education in Zaandam, he began to study Chemistry in 1956 at the University of Amsterdam where he would earn his Ph.D. in Chemistry in October 1968. His thesis: “Mass spectrometry of some aralkyl compounds with a functional group in the side-chain” under the direction of Professor Dr. Th. J. de Boer, was a harbinger of his strong interest in organic mass spectrometry. During those years, he was given charge of the mass spectrometry service resource at the University of Amsterdam, which he managed in addition to his Ph.D. studies, an example of his commitment and diligence. To relax, he and his wife-to-be would travel by motorcycle, interests he maintained throughout this life.

Nico married Christina de Waart, and they have four children: Erik, Hans, Vincent, and Karin. Nico and Tini's son Erik is also a scientist and serves as Head of the Department for femtosecond spectroscopy of molecular systems at the Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie in Berlin. Nico's wife (Tini), is well known in MS circles as she often joined Nico on many of his international travels and shared his interest in other cultures and lands.



Nico Nibbering at the Keith Jennings-Jim Scrivens Birthday Symposium, Warwick, UK, December 2012.

I recall stories of his introduction to international mass spectrometry at the 1967 International Conference in Mass Spectrometry in Berlin. His mentor, Professor de Boer, was uncertain of how well Nico could present his lecture, one of only 83 given at the conference. Nico recalled proudly how he handled difficult questions from Klaus Biemann and Fred McLafferty despite suffering a serious ear infection that had seriously compromised his ability to hear. This early experience gave him confidence that he could compete with the best in our field.

Following this, he was awarded a 1968 Shell Travel Fellowship to the US, promoted by his mentors so that he could learn organic mass spectrometry in North America. As I recall, he visited laboratories of Fred McLafferty (Cornell), Sy Meyerson (American Oil, Chicago), Maurice Bursey (North Carolina), Peter Brown (Arizona), Tom Kinsel (Iowa State), Frank Field (Esso Oil, NJ), among others. His travel laid the foundation for his interest in international MS. Later we would laugh at all the pictures we both would take on these early trips, thinking that such travel may never happen again. They were different times, the cold war was hot, Europe was still recovering from the war, and without travel



The Nibbering Family at home in Abcoude, The Netherlands, in 1974. The children from left are Karin, Vincent, Hans, and Erik.

fellowships, it was too expensive for starting professors to travel abroad.

Nico was promoted to Associate Professor in 1975 and Professor in 1980. In 1988, his laboratory was acknowledged as The Institute of Mass Spectrometry at the University of Amsterdam. He was honored as a member of the Royal Academy of Arts and Sciences of the Netherlands in 1988. He was awarded the Thomson Medal of the International Mass Spectrometry Committee in 1991, and the Joannes Marcus Marci Award in 1992. He served both as Chairman and President of the European Society for Mass Spectrometry and International Mass Spectrometry Society. Nico has also been a member of many editorial boards of mass spectrometry journals, including *JASMS*, serving for a time as editor of the *Journal of Mass Spectrometry* and *Mass Spectrometry Reviews*, and of volume 4, Organic Applications, of the *Encyclopedia of Mass Spectrometry*. The latter volume, nearly a 1000 pages, is a *tour de force* on the mass spectrometry of organic compounds. In his home country, he played a role in forming the Dutch Society for Mass Spectrometry (NVMS), and served as chair during the 1970s. He remained active in writing, editing, reviewing, and lecturing long after his retirement, even at the 50th anniversary meeting of the NVMS in the spring of this year.

Following his interest in promoting international MS, Nico would become the chair of the 12th International Congress on Mass Spectrometry in Amsterdam in 1991, a meeting that was a model of organization, one of his



The Nibbering Family in Abcoude, 1986. From left, Erik, Vincent, Hans, Karin, Tini, Nico.

strongest attributes. He was also an honorary member of the Netherlands Society for Mass Spectrometry, the British Society for Mass Spectrometry, the Indian Society for Mass Spectrometry, and the Japanese Society.

Following his return from the US in 1968, supported by the Shell Fellowship, Nico quickly established a distinguished and productive research group in Amsterdam and built an international center for physical organic mass spectrometry and instrument development. He published more than 400 articles on many different aspects ranging from studies on the structures and fragmentation mechanisms of organic ions to accounts of new techniques and instrumental methods. He and his coworkers were pioneering figures in ion cyclotron resonance mass spectrometry, and they built the first Fourier transform ICR mass spectrometer in Europe and developed various approaches, particularly in the area of ion selection and isolation. His papers on “correlated harmonic excitation fields” and mass selection in ICR are among his most highly cited.

His studies in ion chemistry occupied most of his interest, and they were models of thoroughness and high standards. He was particularly interested in the properties of negative ions, distonic ions, carbenes, ion-neutral complexes, H_3O^- , NH_4^- , and other unusual chemical species. He studied these species with zest and all the tools at his disposal, including building reference compounds, isotopic labeling, theory, MS/MS, diagnostic ion-molecule reactions, and field ionization kinetics. He loved research that merged chemistry, mass spectrometry, and physics. An example is his attraction to field ionization kinetics for the opportunity to studies chemical reactions and ion rearrangements on the picosecond to microsecond timescale. In later years, he developed a

deep interest in lasers and MS. His interests were broad-based, and he made early contributions to biological mass spectrometry as reported in a 1974 paper on pyrolysis of nucleic acids.

Despite some health issues in recent years, Nico continued to attend meetings, including the 2014 Dutch and German MS Meetings, the 2013 ASMS Conference in Minneapolis, where he stayed with us in our small townhouse there, and the 2012 International Conference in MS in Kyoto, where he presented an opening tutorial lecture. Nico's lectures were clear and full of enthusiasm for his subject, punctuated by frequent questions "The structure of the ion is . . . Ja?" to engage his audience. Furthermore, the lectures were often ready weeks ahead of schedule. He also continued writing about his favorite subject, that of ion chemistry in an article, "Highlights of 50 years of ionic reaction mechanistic studies," which is in press in *International J. Mass Spectrom.*

I met Nico in 1974 at the Philadelphia ASMS conference, during which time he was a visiting scientist in the laboratory of Fred McLafferty. A few months later, during my first trip to Europe, we spent nearly 2 weeks together at a NATO School on gas-phase ions in Biarritz, France. We became close friends given our similar modest backgrounds in our youth and our interests in science and travel. He invited my wife and me to come to Amsterdam from France, and normally one viewed such invites as a matter of professional courtesy. But he insisted again and again, and we accepted, traveling economically on Eurail Passes, which was common at that time. This was the first of many visits to the Nibbering household in Abcoude. Their home was not only a refuge from jet lag after crossing the Atlantic but more importantly a place of warmth, home cooking, and bike rides during which we experienced the smells of the land and the closeness of sky and water of rural Netherlands. I spent more days in their home than any other except for my own and came to know all his children. My wife and I last visited before and following the First



Nico Nibbering and Paula Gross during our most recent visit to Abcoude, September 2013.

International School on Mass Spectrometry in Siena in the fall of 2013, where Nico and I gave tutorial lectures. I will treasure the memories of this good man, scientist, and teacher, and of his home and family in The Netherlands as will so many other travelers. Nico's enthusiasm, commitment, interest in and support of others, and, particularly, his dimpled smile will be sorely missed.

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