

Vale Professor Fraser Stoddart Remembered by his former students

Professor Sir Fraser Stoddart, 2016 Chemistry Nobel Prize winner and Knight of the “Nano Realm”, recently passed away at 82 while visiting family in Australia. His contributions to artificial molecular machines and his influence on so many people’s lives are immeasurable. His passing already has been covered by outlets such as the *Washington Post*, *C&E News*, the BBC, *South China Morning Post* and many others. We had the privilege of working with Fraser during his time at Northwestern University, and wish to pay our respects by sharing personal recollections of what it was like to work with him as a supervisor in his late 60s and early 70s.

Even at the age of retirement, Fraser was known for his incredible work ethic, but he never saw it as work. He loved coming to the lab, which he affectionately called the “Research Palace”. According to group lore, each day he was up by 5 a.m., spent hours writing emails, and then worked at the lab until 6 p.m. After dinner, he would return to the lab to work until midnight. Five hours of sleep was all he needed. No rest for the wicked, he would say! Most nights, he could be found bent over a manuscript, pen in hand, deep in thought. Part of Fraser’s magic was his ability to inspire the feeling of participating in something bigger just by how hard he worked – not to mention his raw passion for science, unstoppable drive and the never-ending support he gave his students.

Fraser’s weekly group meetings, which he called “Group Therapy”, were held on Saturday mornings, and he placed immense importance on them. He would often go to extraordinary lengths to attend, even flying back from Europe during two-week-long conferences just to be present. After Group Therapy, he would return to Europe, a nearly 20-hour round-trip. This commitment underscored the tremendous value he placed on these gatherings, where he set the highest standards for his group. Fraser expected nothing less than the best presentations – not just in terms of results, but also in how they were communicated. You can’t just show your results, you need to tell a story, he would always say! He worked closely with group members, including a graphic designer, to perfect both the science and the narrative. When preparing his own presentations, Fraser would manually cut and paste slides, using sticky notes to illustrate the exact style he envisioned. His meticulous, hands-on approach to crafting presentations was reminiscent of the work of French visual artist Henri Matisse, reflecting his dedication to every detail. Fraser’s methodical preparation and his focus on storytelling made his presentations as impactful as the science behind them.

Fraser’s attention to detail reflected his organised and perfectionist nature, which he also applied to manuscript



Image Credit: Jim Prisching

preparation. He meticulously organised printed drafts in manila envelopes, with the tops cut off to easily see the titles, and always made corrections using three different colors of Pilot Capless fountain pens. For lunch, he often ate cheese and crackers while continuing to make edits. Once corrections were finished, he would sit with the authors to review each comment, ensuring everyone was on the same page. The number of manuscript drafts could easily be in the double digits. As the final draft neared, Fraser would project it on the big screen and read it aloud with the other authors, ensuring every detail was perfect before submission. His commitment to quality and his boundless endurance made every revision process thorough and precise, setting incredibly high standards for all involved.

Fraser’s astounding machine-like work ethic was equally matched by his benevolent, giving nature. Group Therapies were often held at his house when an important visitor came to town. While presentations were ongoing, Fraser would be in the kitchen preparing a home-cooked lunch for everyone – often 50 or more, including partners and children. Fraser took pleasure in serving others. It was not unusual for everyone to stay late into the afternoon enjoying themselves, an atmosphere Fraser encouraged and also relished. These gatherings were always highly anticipated and reflected his generosity of spirit, for which he was as well known as his rotaxanes, catenanes, Borromean rings, shuttles, switches, pumps and machines.

It was an extraordinary privilege to work alongside Fraser. His legacy is not just about the groundbreaking papers he published but the passion and dedication he brought to his daily life, which he passed on to his students and postdocs. He was a role model in every sense – someone who inspired others not just through his achievements but through the way he lived, worked and encouraged those around him to strive for excellence. He was generous as much as he was hard-working and visionary. The impact he had on people’s lives will live on for generations.

Albert C. Fahrenbach MRACI and Dong Jun Kim MRACI