



CFES Mentorship Medal Citation

Dr. Fred J. Longstaffe

Prof. Fred Longstaffe leads by example. His commitment, passion, integrity and effectiveness in graduate teaching and research are remarkable. At Western University he is a prolific Distinguished University Professor with a stellar international reputation, who specializes in Stable Isotope Science and is cross-appointed between Earth Sciences, Anthropology, Chemistry, and Engineering. In spite of an incredibly busy schedule directing two world-class labs, he is always approachable and available to his students, postdocs, and colleagues. In fact, he has made a lasting impact on many of their lives.

While demanding much of his mentees, at the same time he inspires them. Indeed, a PhD student once remarked *"I always leave our meetings excited to do science."* Dr. Longstaffe sees his role as developing and nurturing the next generation of world-class stable isotope scientists. He gives new mentees the attention they need then designs thesis projects together with them. Fred even signs a contract with the mentee that clearly spells out expectations on both sides. In the lab he assigns a senior student as mentor to the new student so that both benefit from the experience. His approach is so effective that it has been adopted by Western's School of Graduate and Postdoctoral Studies.

Fred fosters a dynamic and exciting research culture both in and outside the lab. He provides timely guidance, feedback, encouragement and ensures access to state-of-the-art equipment and facilities. Some equipment at Western is unique, having been developed by mentees under Fred's guidance to solve unique problems. When his mentees are able to manage on their own, he encourages independent work and allows them to take risks, make mistakes, and experience the thrill of discovery on their own while gaining confidence and competence with stable isotopes. Yet Fred is there for them when they need re-assurance and schedules weekly meetings with every mentee after hours. He and his team also meet every week to discuss lab techniques, method development, problems, and to hear mentees present their research results. Furthermore, Fred ensures that his students present their research results at international conferences and he helps them to reach the highest standards, including 20 best presentation awards. He tries to attend meetings with his students to see them perform and to introduce them to his international colleagues.

Fred strives to make his PhD students equal or even better scientists than he is. This leads to mutual respect and productivity. Consequently his students tend to finish their programs on time. His research group has received over 30 scholastic awards in the last five years and averages six student-authored, peer-reviewed papers each year, and over a dozen presentations at meetings. He almost always lists his name after theirs on co-authored work.

Fred has developed long-standing relationships with his mentees. Following their graduations, he keeps in touch with them and often continues to collaborate on their thesis and new projects, as well as other matters. In one case Fred even flew to Alberta to help a former PhD student whose husband had drowned, leaving her alone to raise young children. Indeed, most of Fred's former students have gone on to enjoy successful careers in stable isotope labs around the world as educators, research scientists, consultants, lab managers, technicians, or PhD candidates in a variety of disciplines.

Finally, Fred Longstaffe's leadership, integrity, respect, and professionalism in teaching and research have brought international recognition to Canada. His nurturing of world-class independent scientists, and his long-term commitment to their personal and professional development, only serve to enhance Canada's reputation in stable isotope science. Please join me now in recognizing Dr. Fred Longstaffe's exemplary and sustained service as one of Canada's best mentors in the Earth Sciences.

Remarks by Dr. Fred Longstaffe on presentation of the medal

Dear Colleagues and Friends,

Let me first thank the Canadian Federation of Earth Sciences, its adjudication panel, my nominators and most of all my students, past and present, for this recognition. All of you have put up with my eclectic (some would call unfocused) research interests for a very long time.

In my research group and laboratory, there are only three rules:

1. No “fill-in-the-blanks” theses.
2. Everyone spends some quality time in the field to collect their samples – whether these are rocks, sediment, water, gas, megafauna, bugs, grasses or Pleistocene squirrel nests (isotopists get a bad rap – usually well deserved – when they don’t collect at least some of their own samples).
3. Everyone must do his or her own analyses – guided and aided of course by the very competent technical team in my laboratory. Students need to engage the great struggle with the ironmongery, and learn how to wring good data from complex instruments. In doing so, they come to understand the ‘dark’ side of analytical work, and to truly value quality data.

I have been very fortunate to have students who accept these time-consuming rules and even (well some of them...) come to embrace them! The creativity, originality and work ethic that develop in these emerging scholars are always wonderful to observe. They bring amazing ideas and energy to an old guy like me.

My group comprises an interdisciplinary environment in which geologists, geochemists, anthropologists, biologists, geographers, and paleontologists rub shoulders on a daily basis. They help each other in a generous and unselfish fashion. The connections that they make with each other’s disciplines, and with each other, return enormous benefits in terms of the transfer of ideas, technology and know-how. This interaction leads to wide open pathways of thinking. The students become so much more versatile, so much more adaptable, and simply so much better at problem solving from working at the boundaries of disciplines and the limits of their comfort zones.

Let me also acknowledge the agencies and external reviewers that still make some room for our interdisciplinary, curiosity-driven and to some – seemingly madcap – scientific pursuits. They make it possible to fund my graduate students and their research. Let me thank my two universities – Alberta and Western – for giving me the privilege of being a member of academic staff. Not a day passes that I don’t thank my lucky stars for that break in life. And let me thank my wonderful technical staff who give their all to help my students be successful. Nothing happens without this amazing team effort.

My students have given me the gift of eternal intellectual youth, and for this I will be forever grateful.

Fred J. Longstaffe