

Obituaries

Professor Ronald Chase 1940-2022

Professor Chase, Ron for some...

How do I start the obituary about the passing of my PhD supervisor, colleague, friend and inspiration? Allow me to try to summarise him in a few sentences: Professor Emeritus Ronald Chase, who died on the 6th of September 2022, was a multi-faceted person with a rich career. He was a neuroscientist, psychologist and malacologist, a talented writer and dedicated teacher, who also loved gardening, playing tennis and was clearly proud of his family. As will also be reflected in some of the alumni responses that I collected below, he had major impacts in different ways on people and fields of science.

"I first met him outside of class, playing squash at the old gym on Pine Avenue. After telling him of my interests in neurobiology one day after a match, we wrote an unsuccessful grant application to gain funding for me to join his lab over the summer. He was kind enough to take me on anyways giving me my first opportunity to work in the lab and introducing me to the molluscan nervous system." Dr. Benjamin Hall, Lundbeck (Denmark)

Ronald Chase was born in 1940 in Chicago and went to high school in Los Angeles. Only after his passing I learned that he set high school (running) track records that stood for decades and that he went to Stanford University on an athletic scholarship to study Psychology. Subsequently, after starting at Harvard Law School (HLS) he left to go to the Massachusetts Institute of Technology (MIT) for his PhD in Psychology, later called Brain and Cognitive Sciences. He did post-docs at the Max Planck Institute of Psychiatry in Munich and the Department of Zoology at the University of Washington in Seattle. Subsequently, he became professor at the Department of Biology at McGill University in Montreal in 1971, where he stayed until his retirement in 2008. During his career he worked on chemotaxis in octopus, the visual cortex in cats, and especially snail neurobiology and behaviour. On the latter topic, he wrote an influential and comprehensive book "Behavior and its Neural Control in Gastropod Molluscs" (2002).

"He was a gifted writer. I'm grateful for the careful editing he did on my first forays into scientific writing. My writing was improved by having him go through those early papers with his red pen." Prof. Dr. Shelley Adamo, Department of Psychology and Neuroscience, Dalhousie University, Halifax (Canada)

After his retirement, he kept writing and published several books on psychology, going back to the reason for why he turned to neuroscience in the first place: he wanted to understand his brother's mental illness. This was also his motivation to leave HLS and start at MIT at the time. He wrote an impressive book about this titled "*Schizophrenia: A Brother Finds Answers in Biological Science*" (2013). In this book he described his brother's schizophrenia from both a personal and scientific perspective, in alternating chapters. He clearly loved writing and was dedicated to it; several books on psychology followed. This did not go unnoticed, as he was proud to tell me at the time, since this led to a plenary lecture invitation to a major meeting on the topic.

"I always valued Ron as both a friend and an advisor. I hope that I have been able to convey some of the same wisdom and support to my own students. I appreciated great new insights into his background and motivation for studying neurobiology from reading his book a few years ago on his brother's struggles with schizophrenia." Prof. Dr. Roger P. Croll, Department of Physiology & Biophysics, Dalhousie University, Halifax (Canada)

Within the molluscan science community he will definitely be remembered for solving the question why land snails 'shoot' a love dart at their mating partner. As one of his alumni remembers:

"Dr. Chase generously introduced me to his work on snail mating behaviour and I was immediately hooked. Through his enthusiasm and curiosity, he showed me that serious science exists in all disciplines; the questions that leave you baffled, the ones that you can't get out of your mind, are the ones that most deserve to be answered." Dr. David W. Rogers, Max Planck Institute for Evolutionary Biology, Ploen (Germany)

I recognise this feeling. I came into his lab myself having been trained in neurobiology and behaviour and curious about the details of snail mating and left, after completing a PhD, with evolutionary questions that I needed to address about love darts. Thanks to Chase's persistent work on this topic together with (under)graduated and post-docs (including myself), we now know that these snails stab each other with a so-called 'love dart' in order to transfer accessory gland proteins that increase the proportion of the shooter's spermatozoa that gets stored by the recipient for later use in fertilisation. This was a question that could only be answered by integrating findings about these snails' behaviour, physiology, biochemistry, reproductive morphology and genetic diversity. In other words, by addressing proximate questions about how things work, he also answered ultimate questions about why they work the way they do. This integrative approach stuck with several of his alumni throughout their careers, including myself.

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The above also illustrates that he had a broad interest for a range of biological fields and learned more about the ones he required to answer his questions. I think this is one of the reasons for why his former students found him inspiring and refer to him as a great teacher, mentor and inspiration:

"Ron gave me the opportunity to study in his lab in the 90s, I was young, a new immigrant to Canada and away from home for the first time. It was a difficult time for me, but this experience set me up for many future successes. I will always be thankful to Ron for giving me this first step in this right direction." Dr. Smriti Agrawal, Calgary (Canada).

Without putting any emphasis on it, he also showed how science does not always have to involve expensive, sophisticated, high-tech material and equipment. For example, he liked fixing things to be reused and he stimulated students to customise their recording equipment or setup to suit their specific needs. Likewise, rather than buying expensive, commercial snail feed, we made it ourselves in the lab from the raw ingredients, based on a recipe that he had optimised. In my lab we now refer to this as the Chase mix. Another trick-of-the-trade was harvesting spines from the cactus plants in the windows of the lab and using these, instead of stainless-steel micro-pins, to pin out the central nervous system of other organs of snails for (electro) physiological recordings. One downside to this clever method, as many of his alumni will remember, was that you would regularly get some of these small cactus spines stuck in your hand or arm if you were not careful.

"I had the pleasure to work in the lab of Dr. Ron Chase when I was an undergraduate student who knew next to nothing about fundamental research. My stint in his lab was instrumental with my decisions to get extra training in basic science research throughout my career. Without Ron as a supervisor and mentor early on, chances are I would not be the clinician-scientist that I have become." Mathieu Lemaire MSc MDCM PhD FRCP(C), Department of Pediatrics & Biochemistry, University of Toronto (Canada)

He always insisted on being called Dr. Chase by the people who started in his lab. You somehow had to earn calling him Ron over time. But he was a modest man and humble about the impact of his scientific contributions. Nevertheless, throughout his scientific career Ron wrote many research papers, reviews and several books that altogether made significant contributions to different fields of science. As he might have modestly concluded himself, with his disarming sense of humour: He nearly became a (rich and famous) lawyer but instead realised that he just (!) needed to understand how the brain worked. He certainly helped advance the field of neuroscience, and snail (neuro)physiology along the way, but by asking questions, debating and genuine curiosity he contributed so much more.

References

- Chase, R. 2002. *Behavior and its Neural Control in Gastropod Molluscs*. Pp. xx+314. Oxford: Oxford University Press.
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