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Searching For The Fountain of Youth

University of California biologist Dr. Michael Rose, Queen's Artsci '75, MSc '76, is making headlines and stirring controversy with his groundbreaking research, which appears to raise the very real possibility that science can dramatically extend the longevity of all lifeforms -- including humans.

By James FitzGerald, Queen's Arts '72

When Michael Rose, a brilliant 16-year old biology freshman, arrived at Queen's from Toronto in September 1971, some of us who met him were struck by his rare mix of character traits, uncommon even at an elite university: insatiable intellectual curiosity, rock-solid self-confidence often mistaken for arrogance, and the will power to make his high career ambitions come true. Here was a dynamic young man -- actually, a boy prodigy -- who was clearly determined to push back boundaries wherever he went.

Today, a quarter century later, Professor Michael Rose has bloomed. Now 43, he has single-handedly pioneered a whole new scientific field -- the evolution of aging -- and is currently gaining international recognition for his groundbreaking achievements.

"We now know why aging occurs and what to do about it" exclaims Rose from his laboratory at the University of California at Irvine. After 20 years of painstaking work selectively breeding fruit flies, he says he has proven that it is theoretically and practically possible to double the lifespan of human beings. No wonder the world is now sitting up and taking notice.

Having earned his Bachelor's and Master's degrees in biology at Queen's by age 21, Rose plunged into his doctoral research work at England's University of Sussex in 1976, following up on an idea hatched by a colleague. Starting with a batch of 200 fertilized female fruit flies, Rose methodically bred successive generations from the strongest, longest-lived specimens. Gradually, the flies began to surpass their normal maximum lifespan of about 60 days.

Today, 100 generations removed from their forbearers, the newest strain of robust super-flies live up to 120 days, twice as long as normal fruit flies. By boldly challenging the idea of a fixed biological lifespan, Michael Rose has

opened up the very real possibility that science that dramatically extend the longevity of all lifeforms -- including that of human beings.

"It's inevitable that it will start to happen, within our own lifetimes, one way or another" he claims. "It's just a question of marshalling the bio-technology -- pills, IV drugs, surgery -- to make it happen." Progress will be slow and tedious, and only affluent populations will be able to afford it, but Rose believes the absolute genetic ceiling of human life of approximately 120 years, unchanged for millennia, can be incrementally pushed up to 200, 250, perhaps even 300 years.

Covered in a string of mainstream publications including The New Yorker, New York Times, The Economist, Life, Time, and Newsweek, Rose is often taken to task for the myriad social and ethical implications of his controversial work. Impatient with being held responsible for giving birth to "lurid scenarios" of a Frankenstein-ian future imagined by fuzzy-thinking journalists, Rose is ever ready to rebut the voices of political and scientific correctness -- what he calls "the death of the mind" -- with refreshing bursts of precise, rigorous thinking.

"Albert Einstein laid the scientific foundations for television with the discovery of the photo-electric effect" he calmly points out. "Could he, or anyone, have foreseen all the subsequent cultural developments, like TV dinners? Not a chance! That's why prophecy is not something I'm generally impressed with."

However, Rose is generally impressed with the quality of education and training he received at Queen's during his years on campus, 1971-1976. In particular, he remembers entomologist Dolf Harmsen as a classical mentor who opened his young mind and got him thinking as a theoretician.

"A key to a scientist's career is the people with whom he does his research apprenticeship, and Dolf Harmsen was a key for me" says Rose. "A true mentor in science helps you realize your early ambitions, which you aren't yet in a position to act on yourself. When you first start off in academia, you're totally at sea. He supported and encouraged my ambition to be a scientist, which proved very beneficial."

Rose also recalls that during his Queen's years, the Biology and Math departments "were having an affair -- intellectually, not carnally" -- which, as an observer, he found greatly stimulating: "I found the work of all kinds of people in both departments -- Patrick Colgan, Peter Taylor, Leo Jonker, Fred Cooke, among others -- to be very interesting" says Rose.

Indeed, as a student at Queen's, he was voraciously interested in everything, whether it was the artistic avant-garde, ecosystem theory, radical politics, or world religions. Typical of the scope of his omnivorous mind, Rose's fifth book, Darwin's Spectre, to be published this fall, deals with the role of Darwinism in the modern world from multiple perspectives -- political, religious, cultural and scientific.

"I didn't understand it at the time, but one of the biggest influences on me was my fellow Queen's students, who set a standard that is generally not met elsewhere" Rose recalls. "It's not just a question of having ability, but having ability with an interest in using it. The students here at the University of California are incredibly smart, but also intellectually lazy. I fear it's an all-too-common pattern."

As a precocious teenager, Rose remembers feeling general contempt for most of his peers. "At the time, I thought Queen's was an inert, bourgeois cow pasture and the average Queen's student a lame, grades-grubbing, money-grubbing, anti-intellectual philistine. Later I discovered they were actually a cut above because at least they showed sparks of real intellectual interest in a larger world where intellectual discourse is virtually extinct. I can think of people who, at the time, I utterly dismissed but whom I now respect."

If that sounds like a back-handed compliment, its isn't. The son of a Canadian army officer, Rose is simply an old-fashioned elitist, a self-described "young fogey since the age of nine", who believes passionately in high standards of thinking and refuses to apologize for it. If the truth sometimes hurts -- "and science is only interested in the truth" -- then so be it.

"Many of the scientists in my field are doing this work because they want to live longer, but I'm not" says Rose with characteristic matter-of-factness. "I simply want to satisfy my curiosity. That's what turns me on the most. If you gave me a choice between making a fabulous scientific discovery that changes the way we look at life, and living an additional five years, I'll take the former every time."