

Lessons from health research luminaries

What do leading health researchers know that others don't? The legacies of three of Canada's most celebrated scientists provide a few clues. Canadian Medical Hall of Fame 2014 laureates Adolfo de Bold, Ronald Worton and Max Cynader cite perseverance, collaboration and an entrepreneurial spirit among the secrets of their success.

Rethink publish or perish

Adolfo de Bold's 1981 discovery of atrial natriuretic peptide — a hormone secreted by heart muscle cells — established that the heart has an endocrine function. The finding overturned conventional understanding of the heart as a mere pump, and revolutionized patient care for conditions such as hypertension and heart failure.

That discovery was the pinnacle of some 12 years' study of storage granules in heart cells — a theme that initially ran contrary to the wishes of de Bold's graduate supervisor Sergio Bencosme at Queen's University in Kingston, Ontario. Even so, de Bold credits his breakthrough to the carte blanche he enjoyed under Bencosme, including freedom from the pressure to publish.

"When you get an artist to do a work of art, you cannot specify parameters; that will limit the inspiration," explains de Bold. "I don't think it would be possible to do the same kind of work now, because you have to demonstrate that things are of obvious practical value."

Stick to your guns

Another pitfall of the increasing emphasis on translation, even in basic science, is the temptation to "jump from theme to theme" in an effort to

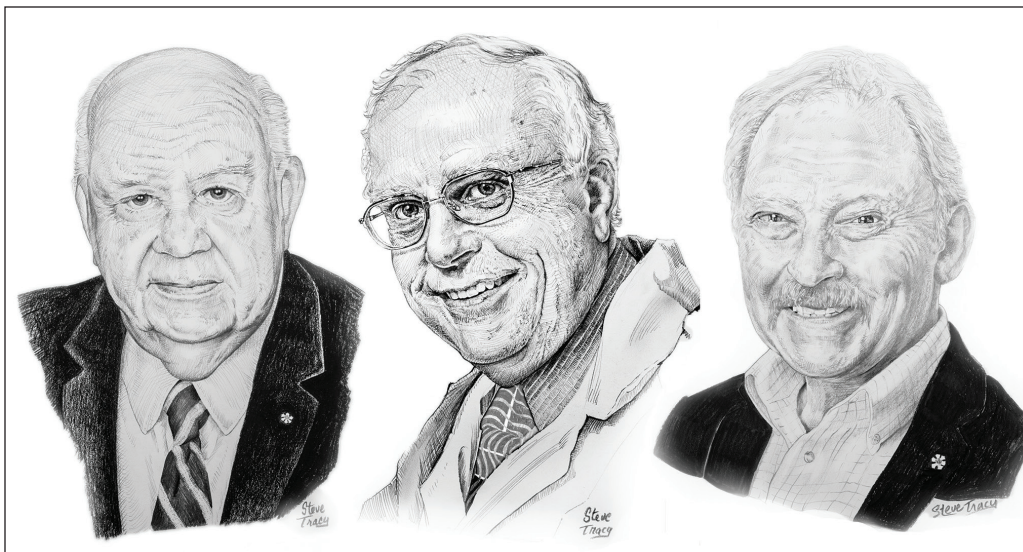
pluck the lowest hanging fruit, says de Bold. "In my mind that shows a lack of original thinking. You'll never get to fully explore anything."

In addition to his role as director of the Cardiovascular Endocrinology Lab-

about maintaining high standards ... and it reflected well on those who made it."

Work the water cooler

Collaboration is crucial to achieving such high standards: "Science is tough



Visionary health scientists (left to right) Adolfo de Bold, Ronald Worton and Max Cynader reflect on lessons from their legacies.

oratory at the University of Ottawa Heart Institute in Ontario, de Bold is a professor in the university's departments of Pathology and Cellular & Molecular Medicine. He advises young scientists to pick a big dream and stick with it. Perseverance and hard work "always pay off," he says.

Genetics pioneer Ronald Worton similarly blended lofty ambitions with rigorous discipline during his more than a decade tenure as scientific director at the Ottawa Hospital Research Institute. The tough review process he established — in which senior scientists undergo re-evaluation every five years — was instrumental to the institute's becoming one of Canada's premier research organizations.

"Our scientists realized they had to perform to a high level and if they didn't they'd be out, and we were really good at sticking to our guns on that point," says Worton. "For the remaining people, it made them realize we were serious

enough without people having chips on their shoulders," says Worton.

In addition to his groundbreaking identification of the gene and protein product defect in children with Duchenne muscular dystrophy, one of Worton's greatest contributions to genetics is a legacy of bringing scientists and institutions together. He was founding scientific director of Canada's Stem Cell Network and has headed the Canadian Genetic Diseases Network and American Society of Human Genetics, among other organizations.

"You can't share ideas with people you don't know," he explains. "The networks in particular had a really important role to play in getting people to know one another, to trust one another ... and from that, collaboration happened spontaneously; it didn't have to be forced."

Neuroscience trailblazer Max Cynader realized early in his career that the best collaborations also reach

across professional and academic silos. “I’ve always felt that the conventional departmental affiliations that universities have aren’t such a great idea,” he says. “In a biochemistry department, for example, you’ve got everyone using the same methods on different subjects — one guy’s doing biochemistry of the liver, another of the eye — so they don’t have that much to teach each other.”

To that end, he founded the multidisciplinary Brain Research Centre and the Djavad Mowafaghian Centre for Brain Health, both at the University of British Columbia in Vancouver. The first centre brought together fundamental scientists from diverse disciplines; the second has added clinical research and advanced clinical care to the mix.

By keeping research close to care, “they’re each going to bring their own special perspective to the same problems,” says Cynader. “The dream is that every patient will have a chance to be a research subject; their data will flow upstairs to the guys in white coats and then revolutionary discoveries will flow down for the benefit of patients everywhere.”

Embrace enterprise

Cynader has brought the same multidisciplinary spirit to many entrepreneurial endeavours. His contributions to technology development include the creation of gene therapy products to treat brain diseases, voice recognition software used in cars and intelligent hearing aids.

Cynader also doesn’t accept the distinction some peers make between the academic and commercial worlds. “Running a company isn’t that different from running a large research lab,” he says. “You’ve got to meet payroll, make revolutionary discoveries, work with a lot of partners whose visions might not be the same as yours, raise money, find consensus and deliver results.”

And as pools of government funding for health research continue to stagnate, it’s an opportune time to dip a toe in new revenue streams. “That’s the direction in which the funding is going at all levels,” says Cynader. “My advice to young researchers is to jump in; the water’s fine.” — Lauren Vogel, *CMAJ*

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