A blueprint for medical research stardom

Success in medical research can bring praise, prizes and you might even see your face on a stamp, but star researchers say fame is a byproduct, not the goal.

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So you want to be a superstar researcher, published in prestigious medical journals, showered with international awards, lauded by peers in public, envied by peers in private. Hate to break it to you, but if fame is what you seek, you may already be headed in the wrong direction.

“You need a real passion for research, a passion based on curiosity rather than on becoming famous,” says Dr. Jack Hirsh, professor emeritus of hematology and thromboembolism at McMaster University in Hamilton, Ontario. “A lot of people go into research because they hope to become famous, a much smaller percentage because they are really curious.”
Young, ambitious researchers seeking career advice could do worse than heed the words of scientists who have already accomplished great things in their fields. CMAJ recently spoke with Hirsh and two other recipients of Canada Gairdner awards for excellence in biomedical research, asking each, among other things, what it takes to stand out in the competitive world of medical research.

The curious are encouraged to read on and glean a nugget of wisdom or two from the lessons these researchers have learned over their lengthy and noteworthy careers. Fame-seekers, feel free to bail now.

First, let’s dispense with the obvious. To succeed in research, you must be bright and hard working. The list of Nobel laureates isn’t littered with lazy investigators. But there is another trait, one more often associated with artists than lab-dwellers, that is crucial to doing research that makes a difference in the world. To come up with important questions and find innovative ways of answering them, creativity is a must, says Hirsh (Canada Gairdner International Award, 2000).

“Some people could work 20 hours a day, seven days a week, and not achieve much if they lack that creative spark,” he says.

That said, you still have to put in oodles of hours to produce paradigm-shifting research, no matter how creative your spark. Answering big questions takes time and requires sacrifice.

“It can be a lonely life. You spend a lot of time at work, not socializing, and most people outside your field find what you do absolutely boring,” says Hirsh. “It’s a different life, a pretty secluded life, and you have to be pretty selfish with your time. You may not have time to take your kids to hockey.”

But first, before you even get an opportunity to pursue important research, you need to get in the game, earn some clout. The best way to do that, says Hirsh, is to apprentice for a star researcher. A mentor with influence can kickstart your career, open doors, teach you things no book ever will.

“You learn a tremendous amount just by osmosis. It just rubs off on you when you work with the best in the field,” says Hirsh. “The best surround themselves with good people.”

If you are fortunate enough to work with a great mentor for several years, and your collaborations make some noise in the research community, you will have the beginnings of a reputation that commands
respect and, perhaps just as important, attracts funding. Might be time to strike out on your own.

But what topic will you tackle? If you are going to spend years studying something, best make it something worthwhile. Top researchers are more concerned with changing the world than building their résumés. Sure, your name might one day be peppered all over PubMed, but will your work be remembered decades after it was published? Will it have made a difference?

“Often, trivial research is easier to do, and the objective is not to move health care forward,” says Hirsh. “The objective is to get another publication.”

Let’s say you eschew the trivial. You go big, really big — we’re talking international clinical trial, multiple research institutes, tens of thousands of patients. Yeah, you’re going to need some help with that.

This is when other skills, outside of those learned in labs and classrooms, come into play, says Dr. Salim Yusuf, director of the Population Health Research Institute and professor of medicine at McMaster University (Canada Gairdner Wightman Award, 2014).

You have to be entrepreneurial, organized and well-connected in academia and industry. You have to convince respected researchers, clinicians and administrators to join your projects. You have to travel, shake hands and smile. You have to collaborate, negotiate and inspire.

“That is how you get other people to work with you,” says Yusuf. “No single scientist or institute has all the skills needed to answer big questions.”

Another trait you’ll need to survive and thrive is tenacity, says Yusuf. Funding bodies will reject your grant applications. Medical journals will reject your papers. You will expect a study to go one way but it will go another way. Disappointments, failures, unanticipated outcomes — these are all to be expected, not feared.

“The key is to persist,” says Yusuf. “Many studies don’t give us the results we expected, but that is still useful information.”

So you persist and complete a major piece of work. That is followed by another impressive clinical trial, and another game-changing study, and so on. The accolades pour in. You are given a prestigious position at a world-renowned research institute. Your career has exceeded your not-unlofty expectations.
Now what? Well, superstars don’t rest on their laurels. Fame is a byproduct, not a motivator. So what is it, then, that motivates the mid-career research star to keep pursuing difficult projects? Often, it’s an overwhelming desire to address serious problems that still need solving, says Dr. David Sackett, professor emeritus of clinical epidemiology and biostatistics at McMaster University (Canada Gairdner Wightman Award, 2009).

“In clinical epidemiology, the stuff you work on arises from your clinical concerns, from your clinical frustrations about human suffering that you cannot do anything effective about,” says Sackett.

It is also important, eventually, to pass on what you have learned, to give back to the research community that has given you so much. Good researchers become good mentors. They build up the confidence of junior investigators, making them better scientists.

“It’s not an obligation, but I think it’s an important responsibility,” says Hirsh. “It’s one way of keeping things going.” — Roger Collier, CMAJ