

## PAT MORIN

# Catalyzing cancer research

The Ludwig Institute's new deputy scientific director talks about his life, career, avocations—and his role.

We welcome Pat Morin, the Ludwig Institute's new deputy scientific director! A seasoned scientist and science administrator, Pat comes to us from the University of Pennsylvania, where he served as executive director for strategic alliances at the Abramson Cancer Center, overseeing interinstitutional collaborations for drug discovery.

After obtaining his PhD at Boston University in 1995, Pat joined the laboratory led by Bert Vogelstein and Kenneth Kinzler at Johns Hopkins University—before it became a Ludwig Center—as a postdoc, participating in studies on the activation of the Wnt/ $\beta$ -catenin pathway in colorectal cancer. In 1998, he started up his own lab as a tenure-track investigator at the National Institute on Aging, focusing on the molecular biology of ovarian cancer. After 15 years at the NIH, Pat moved over to the American Association for Cancer Research, where he served as senior director of scientific review and grants administration. In that position, he played a leadership role in the Stand Up to Cancer Initiative—working closely with large teams of scientists at multiple institutions—before joining the Abramson Cancer Center in 2016.

Pat will work with the Institute's Scientific



Director Chi Van Dang and CEO Ed McDermott to, among other things, direct research activities, manage collaborative research and review scientific staff. *Ludwig Link* spoke with Pat in early July about his career, avocations and, of course, his new job. Below is an excerpt of that conversation.

**Could you tell us a little about yourself and how you initially became interested in science?**

I grew up in Quebec, Canada and became interested in science at a very young age. At home we had a few bookshelves with all

sorts of books in it, but somehow, I always gravitated towards the science books. In particular, I remember there was a TIME-LIFE book series on various aspects of science that I must have gone over dozens of times. There was one named *The Human Body* and another one named *Health and Diseases* that I found fascinating. My dad worked at a rubber manufacturing company and was able to bring me discarded laboratory equipment, such as flasks and pipets, and I set up a small laboratory in our basement. I enjoyed just sitting there and mixing random liquids pretending I was curing various diseases. One time, I put a bunch of grasshoppers in a cardboard box for future experiments, but during the night the grasshoppers escaped and invaded the whole basement. This led to the premature and permanent closing of my first laboratory. Later, when I was perhaps 12 or 13, I started subscribing to a French monthly magazine called *La Recherche*, similar to *Scientific American*, but a bit more technical. I remember being fascinated by the articles in this magazine, particularly those that had to do with molecular biology and theoretical physics. In the end, I chose biology, which I think was a very wise decision for me.

**How did you wind up starting your research career at Johns Hopkins in the Vogelstein-Kinzler lab, and what did you work on while there?**

I got my PhD working in Tom Gilmore's laboratory at Boston University, where I focused on basic mechanisms of NF- $\kappa$ B regulation. I really wanted to work on something more translational and just as I started looking for a lab for my postdoc, the Kinzler-Vogelstein lab published a series of exciting papers defining how mutations in mismatch repair genes were responsible for HNPCC, a colorectal cancer syndrome. This was extremely elegant scientifically, but also had enormous implications clinically. I applied for a postdoctoral position in the lab and got

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accepted. I did a lot of reading on HNPCC before joining the lab, expecting to work on that project, but Bert and Ken convinced me that working on the protein APC's mechanisms of tumor suppression would be a better fit for my background. We were first able to show that reintroduction of APC in colorectal cancer cells could cause apoptosis. Importantly, building on the molecular findings from our group, as well as others regarding the interactions and regulation of beta-catenin, we were able to identify, for the first time, activating beta-catenin mutations in colorectal cancer. Again, this had significant translational potential, and there are now several companies attempting to develop new compounds to inhibit the beta-catenin pathway in cancer.

**From a 10,000-foot level, what would you say are the main highlights of your research career? What are you most proud of?**

Identifying beta-catenin mutations in cancer was certainly a huge highlight for me and still my most cited paper. It was an exciting time, and I believe it was an important contribution to our understanding of colorectal tumorigenesis. Later, in my lab at the NIH, we studied ovarian cancer and I would say that I'm particularly proud of publishing one of the first gene expression profiling studies in ovarian cancer. Back then in 2000, gene expression profiling was far from routine, like it is today, and it was a technical accomplishment to be able to get a fairly accurate portrait of thousands of genes expressed in ovarian cancer. From that study, we identified claudin proteins as highly expressed in ovarian cancer. This represented

one of the first demonstrations of claudin protein expression in human cancer, and we spent several years trying to unravel the mechanisms and roles of claudins in ovarian cancer. One of these proteins, Claudin-6, is actually being looked at as a possible target in CAR T-cell therapy of ovarian cancer. It's exciting, all these years later seeing that these findings are still relevant.

**You eventually moved over to the AACR, where you worked on the Stand Up To Cancer (SU2C) awards? What did you find most engaging about that work?**

When I was at the AACR, I oversaw the entire grants and scientific awards portfolio. We partnered with a large number of different organizations to award research funding and catalyze research all over the country and, as a matter of fact, all over the world. Knowing that my work could help accelerate research that could lead to breakthroughs in cancer treatment was definitely very satisfying. SU2C was certainly the highest-profile project I worked on, and by far the most complex grant program I oversaw. The selection process was very intricate and included in-person meetings with the finalists. Once awarded, the oversight was thorough and involved regular meetings with the teams. But the most important aspect of SU2C was collaboration in my opinion. Everything was centered on the premise that collaboration accelerates discovery and therefore can bring new therapies to patients faster. This is a concept I truly believe in, and which I found the most engaging about the job. Moreover, overseeing this program involved a constant interaction with the funded scientists, the committee members, AACR colleagues and SU2C leadership, which was also very exciting.

**Could you tell us about your work at the University of Pennsylvania, overseeing an interinstitutional collaboration for drug discovery? What do you think you learned most from that experience?**

My job at UPenn was to catalyze new collaborations between Penn investigators and pharmaceutical/biotech companies for drug development. I think everybody would agree that collaboration between academia and industry is essential for drug development. However, I learned that in practice this can be difficult. The culture is quite different between academia and industry, sometimes with competing interests. Intellectual property issues would almost always delay and sometimes prevent great ideas or projects that we had planned. I don't know that I necessarily have an answer to these complex problems, but what I learned is that it is very important to make everything very clear upfront: What are the goals? What are the terms? Who will do what? If it doesn't look like a win-win, a project that both sides are excited about right from the beginning, it probably won't work.

**How do you envision your role here at Ludwig?**

My experience so far has been that, as you fully assume a new position, you discover additional layers of responsibilities, things that you hadn't necessarily envisioned when you first started. But right now, in addition to the general oversight of the various programs, I see myself as a science facilitator, a catalyst. There is a huge amount of exciting work being done by the Ludwig research community and certainly significant opportunity for collaboration. But investigators are busy with their day-to-day work, which can be all-consuming. I believe that's where I can play a role, in identifying collaboration opportunities and then taking on the responsibility in making these projects happen.

**What do you like to do most in your spare time? Any interests or hobbies you'd like to share with us?**

I have played guitar since I was a kid and have been in many bands over the years, including

"Wild Type," the band that we started when I was in the Kinzler-Vogelstein lab. We played at various scientific meetings and various events to raise money for research—and had a lot of fun. I also love home improvement. I always have a project around the house. Owning a 100-year-old Tudor makes this hobby almost a necessity, but I enjoy it. Finally, I really enjoy wine. This interest goes back many years, but during the pandemic I decided to take the plunge, and I got my level three sommelier certificate.

### **Do you have a favorite band?**

I've had many different favorite bands over the years, different phases I went through, like Led Zeppelin, Rush and R.E.M. However, the one constant band over all these years, a band I can always go back to and enjoy, is the Beatles, so I would have to say my favorite band overall is The Beatles.

### **Who's your favorite author, if you have one?**

On the more classical side, I would say Charles Dickens. I just like the way he crafts his stories and the way he writes generally. In terms of contemporary authors, I really like Ken Follett. I first discovered him when I read *The Pillars of the Earth* years ago and have enjoyed his novels ever since.

### **Do you cook? What's your favorite cuisine?**

I do cook every so often, but my wife is a wonderful cook (in addition to being a great scientist), so she typically takes the lead. I'm more like the sous-chef usually. My favorite cuisine is definitely Italian cuisine, and I could probably eat it every day for the rest of my life, especially if I could pair it with great Italian wines.

### **If you could meet any historical figure—from any walk of life—whom would you most like to meet?**



Wild Type, circa 1996. Clockwise from left: Bert Vogelstein, Ken Kinzler, Bob Casero, Chris Torrance, Ellie Carson-Walter and Pat Morin.

Easy question for me. I have always been fascinated with Abraham Lincoln. Someone who rose from complete poverty, had only one year of formal schooling, to become what many consider the best president this country ever had. He is someone who handled every situation with honesty and humility, someone with great leadership skills who could recognize talent and knew how to make everybody around him better. He was magnanimous and didn't seem to ever hold a grudge. I think a conversation with Lincoln would be fascinating. One of my pandemic readings was *Team of Rivals* by Doris Kearns Goodwin, and it tells the fascinating story of how Lincoln assembled and led his cabinet. I would recommend it to anybody interested in the civil war, Lincoln, or even generally in how to be a great leader.