Learning how to play the piano is a complex endeavour that calls on many dimensions of a human being: large and small muscles working in harmony, the ability to accurately read music on the fly, a finely tuned ear, emotion and motivation. And then there’s keeping rattled nerves under control in
front of judges and audiences.

But how do these complex skills and traits come together along the learning curve from beginner to professional pianist? The answer is complex—after all, it’s humans we’re talking about. But finding the answer to this question was the raison d’être behind the founding of uOttawa’s Piano Pedagogy Research Laboratory, a one-of-a-kind facility that will celebrate its 10th anniversary this fall.

Music professor Gilles Comeau has been lab director since its creation in 2005, when the School of Music’s former student lounge on the second floor of Perez Hall gave way to a home for ingenious cutting-edge music technology. The lab’s colourful décor, natural light and quirky accoutrements instill a sense of calm against a background buzz of creative energy. The centerpiece of the lab is a studio with two Yamaha grand pianos side by side, surrounded by moveable video cameras, LCD screens, sensor technology and interfaces that can track a player’s muscle tension, posture and eye movement as well as provide graphic displays of a wide range of the physical aspects involved in tickling the ivories. The lab has two main functions—to provide special training in multidisciplinary research and to advance scientific research in piano pedagogy. “What I love is working with students who are trained as piano teachers. They get really excited about their research. They have never thought about what sensors could do, or what this curve means. They share their fascination and join my world to become researchers in pedagogy. That’s what is the most rewarding,” says Professor Comeau.

Comeau’s lab has built an international reputation for making advances in analyzing (and helping to improve) pianists’ movements, forces, timing and breathing as well as analyzing what best motivates students to continue with their lessons (including the key role of parent involvement) and better understanding how students learn to read music. For Professor Comeau, the key to the research is in testing assumptions. “We don’t know whether being able to name the notes rapidly contributes to music reading. Some teachers put a lot of emphasis on naming notes with flash cards, and others don’t. In the end, does it make a difference? We’re questioning everything.”

Going forward into the second decade of the piano lab, Professor Comeau’s research teams will be focusing not only on the mysteries of learning to read music but also on playing in a physically healthy way, an area called somatics. “Musicians play with an incredible amount of pain. You think you’re all right with the pain in your arms or in your back as long as you can play,” he says. “It’s hard to change those habits. The solution depends on how much the musician is willing to work.”

During its first 10 years, the piano lab has become a kind of meeting place for researchers and graduate students from many uOttawa faculties and from other Canadian and American universities as well as from Europe. By the very nature of the lab, its operations and pedagogical research require expertise in many fields outside those at the School of Music, including engineering, health sciences, mathematics, psychology, neurosciences, as well as information studies. Over the years, close to 90 paid student researchers and technicians from all of these disciplines have worked in the lab. Funding for the lab comes from a variety of sources including uOttawa, innovation trusts and foundations, instrument manufacturers and, increasingly, private donors. To celebrate the piano lab’s 10 years of success, Professor Comeau and his team will host a number of activities on October 16 and 17, 2015.