



• **Annual Report** •
2012

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Yuanyuan Lu, Administrative Support Services Manager

Jada Watson, Design and Layout

University of Ottawa - Pérez Hall
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Ottawa, Ontario K1N 6N5
613-562-5800, ext. 2704
www.piano.uOttawa.ca

Ann Southam Multi-Media Control Centre



Analog and digital video equipment

- Records piano lessons directly in VHS, DVD, or mini DV format
- Generates picture-in-picture and instant video replay

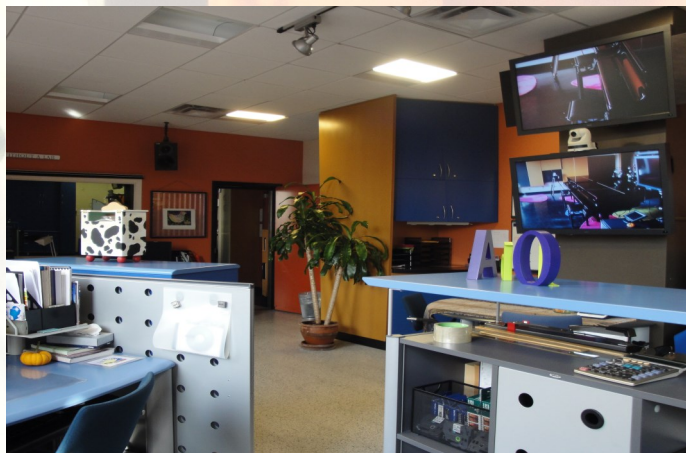
Video conferencing capacity

- Connects international research teams via overseas MIDI transfer
- Facilitates two-way piano teaching between the laboratory and distant, often remote, locations

Production centre

- Enables timely and cost-effective management of all audio and visual files—recording, editing, formatting, transferring

Sylvia M. Gelber Studio



Equipment

- Two 7'6" acoustic pianos with optical sensors and integrated MIDI operating systems (Disklaviers)
- Analog and digital video cameras capture piano lessons for distance teaching
- Large LCD screens allow for picture-in-picture display and instant replay

Recording studio acoustics

- Moveable acoustic panels allowing the customization of spatial resonance within the room
- Soundproof walls impeding sound pollution from exterior sources

"Learning music is not always easy, and this lab is discovering things about learning to play the piano that are astonishing."

—Mme Aline Chétien



Resource Centre



Large reference collection for Researchers

- Piano method books
- Research literature
- Theses and dissertations
- Piano scores
- Audiovisual materials
- Teaching materials

Conference Room



The Lab presents at conferences in other countries via videoconferencing technologies and connects international research teams by way of overseas MIDI transfer.

Multi-purpose environment ideal for

- Seminars, lectures, workshops
- Video conferencing
- Distance education



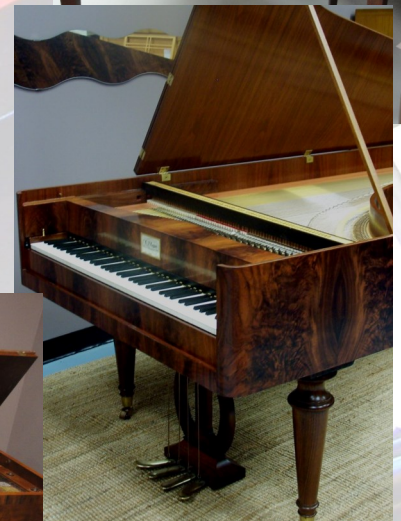
This multi-purpose environment is ideal for seminars and lectures, workshops, and videoconferencing.

Period Instruments Studio

The Period Instruments Studio provides a firsthand opportunity for students to experience music in its historical context. Matters of performance practice and instrument capability are approached with the purpose of exploring musical authenticity. Open to students and researchers, this instrument collection has become a great asset to the Piano Lab.

A selective collection of historic instruments

- One manual harpsichord. This has a Latin proverb inscribed on the instrument: "The hand that doesn't know shouldn't touch".
- Two manuals harpsichord. The harpsichord is a replica of a Dulcken instrument and was constructed by Y. Beaupré.
- Four and a half octave **Morley of London** clavichord. The kit for this instrument was purchased in the UK and put together by Canadian physicist Hugh LeCaine.
- Five and a half octave **Lindholm-Söderström** Clavichord (built by Andrew Lagerquist). This instrument is known for its ability to stay tuned longer and play louder than the average clavichord.



- Five and a half octave **Anton Walter** forte - Piano (built by Richard Hester). The Walter instrument represents a typical fortepiano at the end of the 18th century. All of Haydn, Mozart and Beethoven's early music can be Played on this instrument.
- Six octave **Viennese Graf** pianoforte (built by R.J. Regier). Graf pianofortes were prominent at the highest level of early 19th century musical life: Beethoven, Chopin, Liszt, Clara Wieck and Brahms owned or played them.
- Five and a half octave original **Broadwood** pianoforte. Established in 1728, "John Broadwood and Sons" is one of the oldest and most prestigious piano companies.



Methods

Practice Plan

Method Books Analysis

The piano method book plays a central role in the acquisition of music reading. This study investigates how music reading is being introduced through an inventory of musical signs and reading concepts found in most common method books.

► Name the LH and RH landmarks.



Inching along

Practice Plan

- Circle the ties.
- Name the LH and RH landmarks.
- Which two notes does RH finger 2 play?
- Say the finger numbers where your hands play together.
- **TIPS**

Iggy Inchworm

Inching along

p Look at him crawl - a - long. Hum-ming his sim - ple song.

2 3

Inch by inch, Ig - gy roams, Search-ing for his home.

2 3

You Be the Judge!

Did you hear?

Landmarks: Treble G and Bass F

Treble or G clef: Treble G

Bass or F clef: Bass F

The Treble clef is also called the G clef because it circles around the G line on the staff.

The Bass clef is also called the F clef because it begins on the F line. The two dots are on each side of the F line.

Landmark Guide

- Draw all the landmarks on the Grand Staff below.
- Play these landmarks on your keyboard.

Bass F Treble G Middle C-RH Middle C-LH Treble C Bass C

Suzuki Method

The mother-tongue approach, the corner-stone of the Suzuki method, is based on the assumption that a child can learn to play a musical instrument following the same principles as learning a first language. Considering the popularity of this method, should there be concerns about the real impact of such a teaching approach?

Musical Question

A short melody that DOES NOT end on the "home note." For the C5-finger scale, the home note is C.

Parallel Answer

An answering melody that begins the SAME as the question, then changes and ends on the "home note."

question parallel answer

1 3

Can we make some pan-cakes, yum, yum, yum? We can make some pan-cakes, yum, yum, yum!

Contrasting Answer

An answering melody that does NOT begin the same as the question, but still ends on the "home note."

question contrasting answer

1 3

Can we make some pan-cakes, yum, yum, yum? We can make some pan-cakes, yum, yum, yum!

Note that Grandmother has a parallel answer (measures 5-8). You make up a parallel answer of your own by changing measures 7-8? You make up a contrasting answer?

Repertoire Categories in Piano Method Books

This project provides an inventory of the different categories of repertoire found in North-American piano method books. It also calculates the proportion of repertoire belonging to each category and provides answer to the following: What categories of repertoire are introduced in the piano method books? Which categories are included most often? Which piano method book contains the most variety of repertoire? Which piano method book introduces the multicultural/ethnic elements?

Comprehensive Musicianship

The Comprehensive Musicianship approach evolved as an attempt to create a more well-rounded music education for students. Are piano method books including types of activities central to Comprehensive Musicianship and are those activities integrated within the main curriculum, or are they activities that are presented in parallel?

Did you hear:

Research Projects

Music Reading



Observable Eye-Movement Patterns during the Processing of Linguistic & Musical Syntactic Incongruities

A possible link has been suggested between the way the brain processes the syntax of language and music. We are using eye-tracking technology to investigate the presence and significance of readers' eye movements during the processing of musical and linguistic syntactic incongruities.

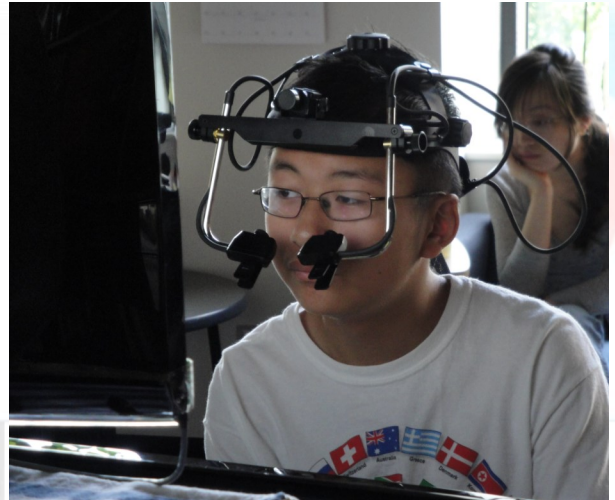


Developing a Tool to Measure Music Reading

Music reading is a skill that many music-education programs seek to develop. In spite of its recognized importance in learning to play a musical instrument, there exists no reliable tool to measure and quantify this skill in relation to reading music written for piano. The Piano Lab is developing the first scale to measure music reading for pianists.

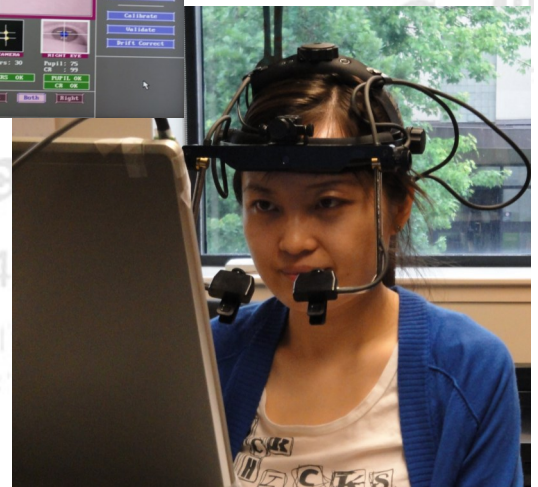
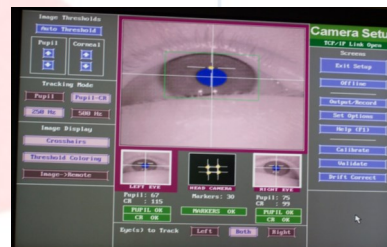
Comparing Different Methods of Sight-Reading Assessment

This study compared three commonly used methods by researchers to assess music reading: sight-reading tests, performance of scales, and evaluation by experts.



Sight Reading and Perceptual Span

This study looks at the effects of notational complexity on the perceptual span of university piano majors during sight playing by using the moving-window paradigm: only a portion of the score around the fixation point is available to the reader and the music only appears when the eyes are looking ahead.



Coordination of Eye and Hand Movements while Reading Music at the Piano

This project extends our fundamental understanding of music-reading processes in young piano students and how these relate to the execution of motor actions in piano playing.

Music Reading



Detailed Inventory of Musical Symbols in Piano Method Books

The Lab is creating a database tracking musical symbols in collections of North American and European piano method books. We are investigating the sequencing of the symbols, the pace at which they are introduced and the way they are reinforced. We have designed a software program that assists with this data collection.



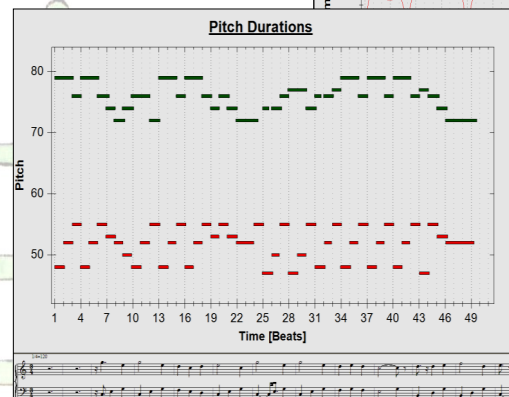
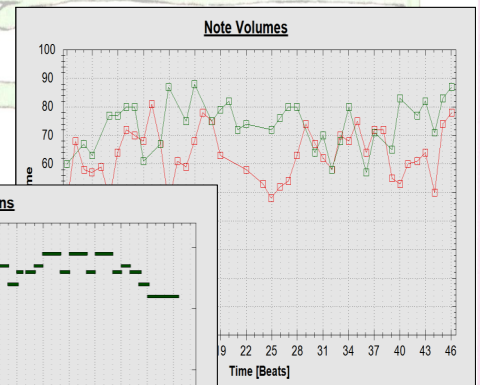
Number of Symbols in Method Books

Every method book uses a different approach to introduce the various symbols piano students must recognize while learning to play piano. Our analysis shows that the number of symbols introduced to students by the time they have finished a complete method ranges from 62 to 262.



Effects of Illustration in Music Books

Many piano method books have a large number of colourful illustrations, which raises significant questions from a music-reading perspective: what is the impact of these colourful sketches on music reading and does their presence lower the quality of performance?



Information Technology Development: MIDIator Software

We have developed a computer analysis tool to evaluate variations of dynamics and timing in piano students' performances.

Motivation

音乐兴趣爱好调查

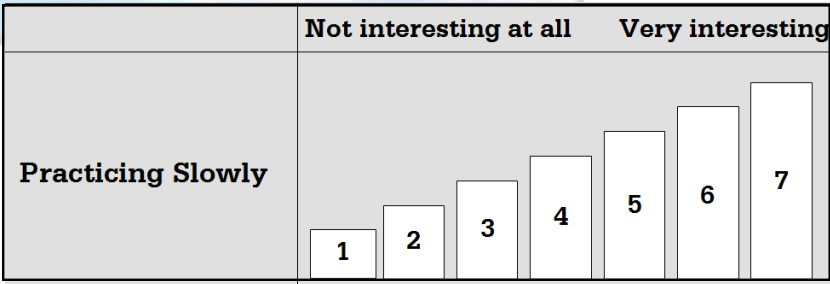
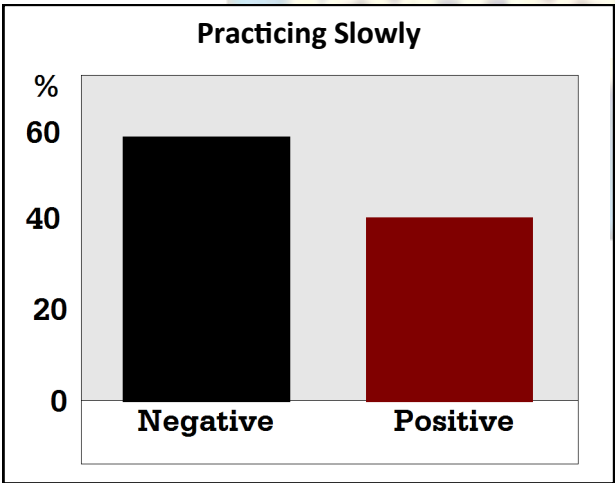
Measuring Young Piano Students’ Degree of Motivation and Their Interest in Piano-Related Activities

A high percentage of young students stop piano lessons within the first 18 months. A likely correlate of this dropout rate is insufficient motivation. To provide better support for children, we developed the Survey of Musical Interest to measure young piano students’ degree of motivation and their interest in piano-related activities, and an accompanying parents’ questionnaire for background information.



Cross-Cultural Analyses

A comparative analysis was done of the motivation levels of piano students from two cultural backgrounds: North America and the People’s Republic of China using the Survey of Musical Interest (SMI), with a corresponding investigation into parental styles and involvement.



Motivation and Practice Strategies

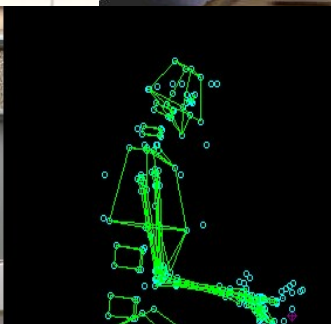
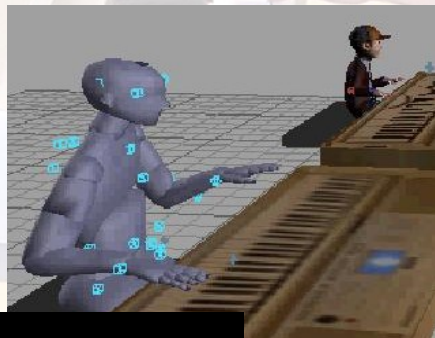
This study examined piano students’ perceptions of their practice strategies and the relationship of these strategies to motivation. Students answered a survey entitled Young Piano Students’ Perceptions of their Practice Strategies, in which they ranked their practice strategies on a scale of 1 to 7. For example, one of the questions asks children how interested they are in practicing a piece of music slowly. Sixty percent of those questioned responded negatively to this statement, showing little to no interest in slow practice techniques.

Physical Aspects of Piano Playing



Analyzing Movement, Force, and Timing in Piano Performance

A sophisticated video-camera system is used to study the finger, hand, and arm movements of piano performers. Spatio-temporal and musical constraints in motor coordination during piano performance are also being studied.

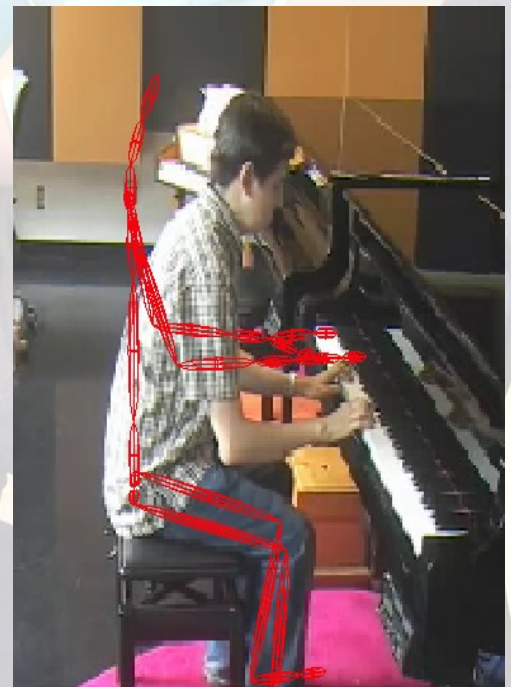


3D Visualization of Piano Playing

A specialized motion capture system provides novice piano students with a 3D representation of a professional performance to help them visualize body posture at the piano.

Warm-Up in a Music Practice Session: An Interdisciplinary Examination of the Issues

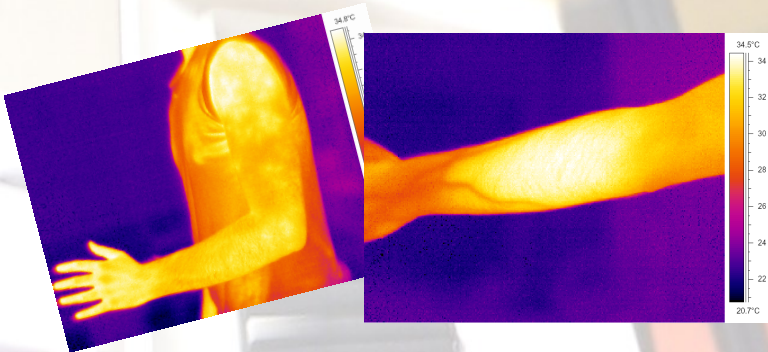
From a biomechanical perspective, warm-up may mean a wide variety of things. This study considers the possible biomechanical implications of warm-up ranging from changes in joint or muscle properties to changes in the nervous system.



Vision-Based Monitoring of a Pianist's Movements

A group of software tools was designed to assist teachers to identify and analyze their students' patterns of movement in piano performance.

Health Issues



Thermal Imaging

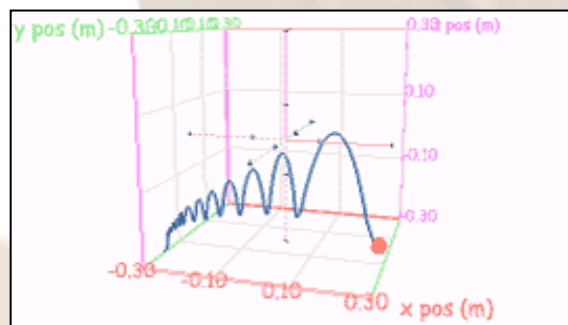
Infrared video technology is used to monitor the temperature of a performer's hands, arms, shoulders, neck and face during piano playing, thereby enabling researchers to pinpoint underlying muscle tension and inflammation.

Piano Playing-Related Health Problems

New technological resources allow us to apply scientific research methods to diagnose, treat, and prevent injuries related to piano performance.

Wrist Stiffness

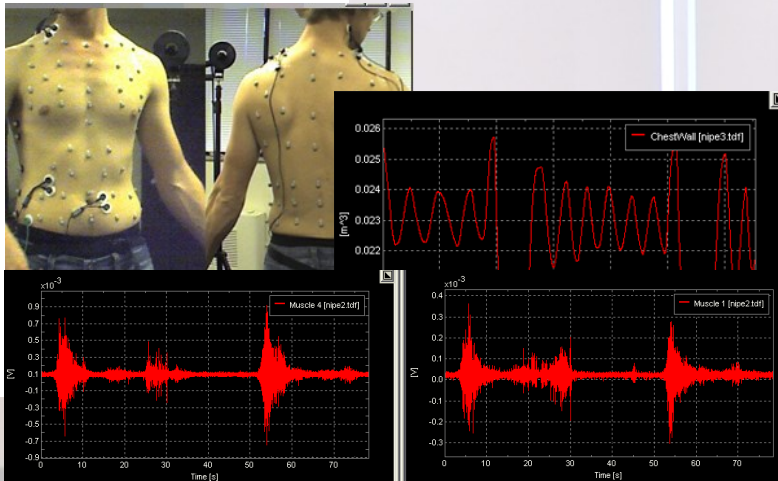
Stiffness, relaxation, co-contraction and multi-joint issues are key concepts in piano pedagogy that also have specific meaning in biomechanics. We examined the wrist movement of experienced pianists in reaction to small, short-duration forces acting on the wrist.



Studying Piano Technique with Motion-Visualizing Software

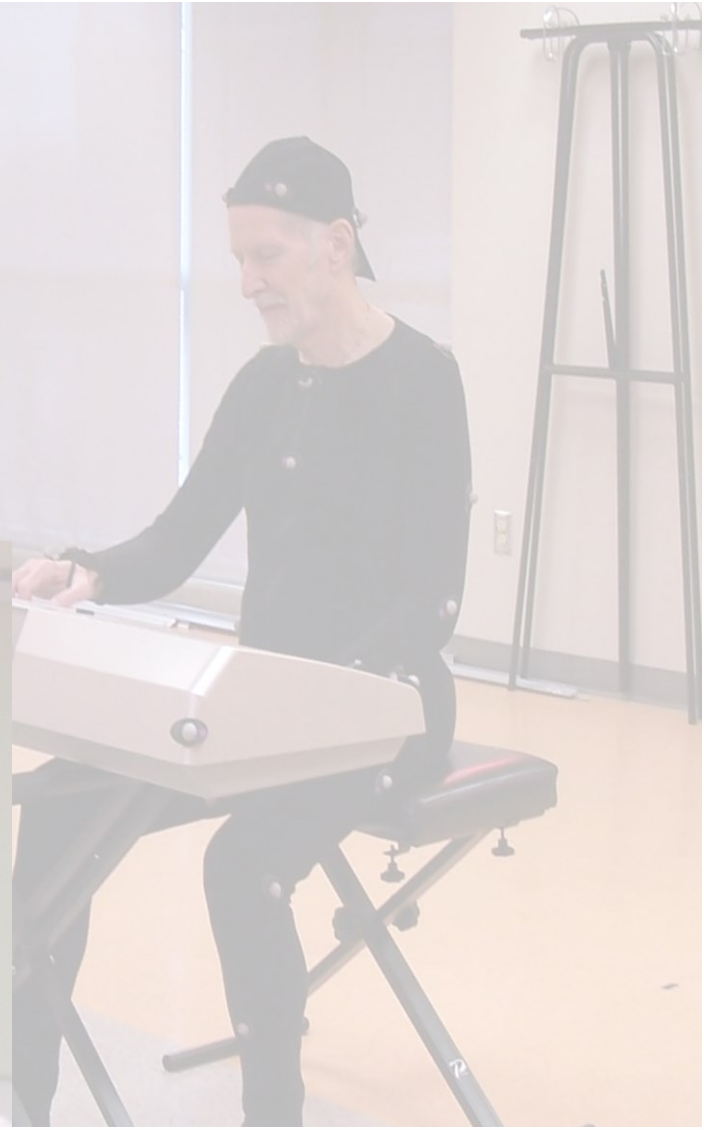
Specialized motion-visualizing software, which graphically represents movement, is used to analyze piano technique.

Health Issues



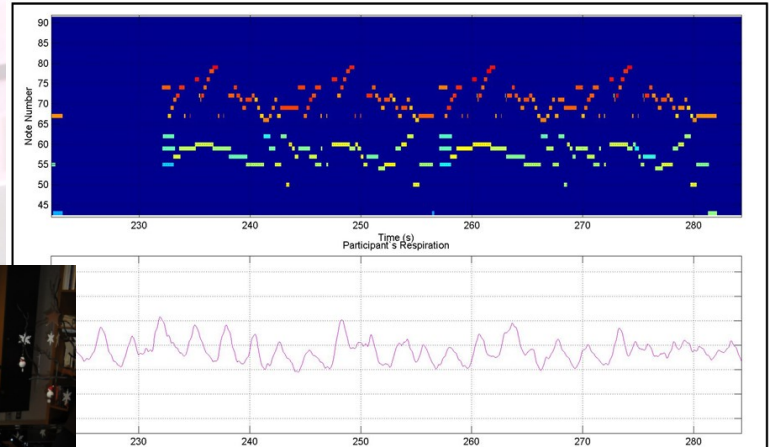
Respiratory Measurement

These experiments are looking into whether the respiratory patterns of novice and expert musicians are factors in the performance of piano pieces, providing a clearer understanding of the physiological aspects involved in piano learning and performing.



EMG and the Choice between Intrinsic and Extrinsic Finger Muscles in Musical Performance

In flexing the fingers, the musician may focus on the use of the large powerful extrinsic muscles that reside in the forearm, or small intrinsic muscles in the palm of the hand. Experimental work based on EMG measurements is used to show some of the implications of this choice on wrist stiffness during piano performance.

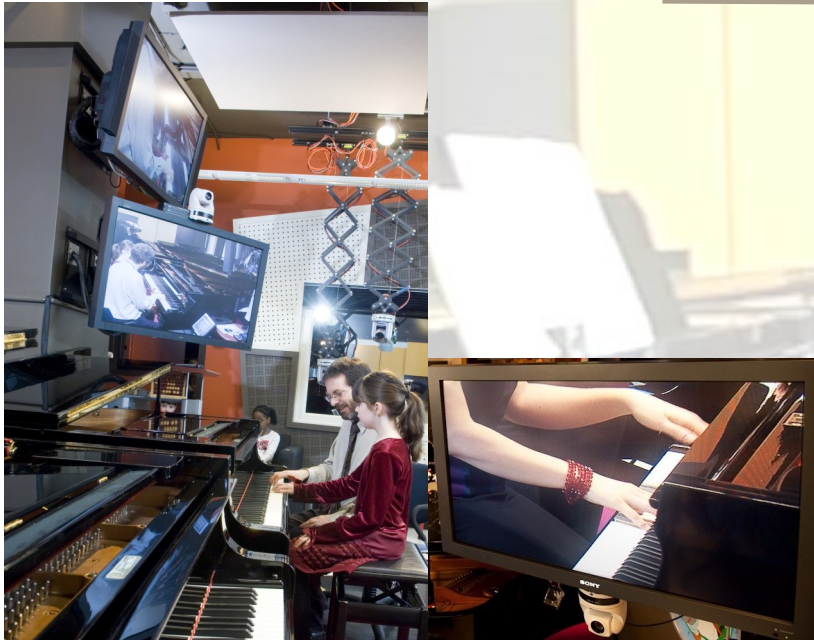


Pianists' Breathing Patterns

This project examined how pianists' breathing is affected by various musical elements such as tempo, metre, rhythm, accentuated notes, melodic complexity and phrasing. Pianists played technical exercises and set pieces while their respiration was being monitored.

Research Projects

Video-Mediated Learning



Video Monitoring in the Piano Studio

The Piano Lab is examining the use of video cameras as teaching tools and research aids in the study of piano playing and learning.



Video Database Development and Its Use as a Tool in Piano Pedagogy

The Piano Lab has been developing a huge database of piano teaching video clips that are available to all students registered in our piano pedagogy programs. The database has over 700 clips illustrating various teaching strategies, technique motions, and full piano lessons.

Distance Education



Trans-Atlantic Piano Teaching: The Alliance of Technology & Pedagogy

With research partners in Finland, we are developing computer programs and software that provide the essential technical interface and teaching tools for distance piano teaching.



Cross-Border Piano Teaching

The Piano Lab has been researching the methodology for starting a young student in piano via distance education.

The challenges are many: there is no physical contact, no face-to-face interaction, and parental involvement may take on extra importance when there is no teacher in the room.



Inuit Keyboarding Project

Music Grid is an intensive program that explores music teaching in the context of broadband videoconferencing. Keyboard lessons are provided via videoconference to a group of young children in Kangiqsualujjuag, Northern Quebec.

Research activities in 2011-2012

METHODS

Researchers:

Gilles Comeau—Music, University of Ottawa
Yuanyuan Lu—Music, University of Ottawa
Kimberley Sundell—Music, University of Ottawa

Poster presentation:

Sundell, K., Comeau, G. (2011). *Comprehensive musicianship and beginner piano method books : A content analysis*. World Piano Pedagogy Conference, Chicago, IL.

Sundell, K., Comeau, G. (2012). *Comprehensive musicianship and beginner piano method books : A content analysis*. Quebec Conference.

Oral Communications:

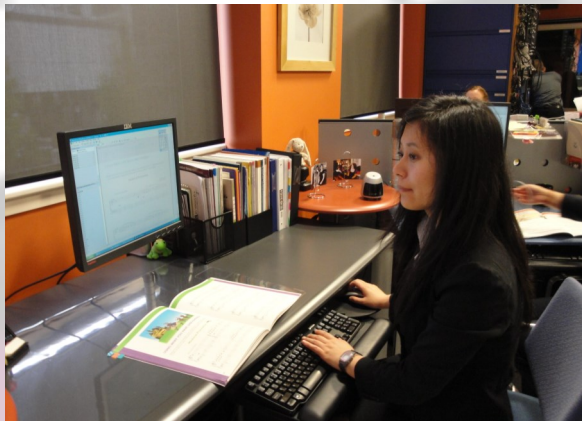
Comeau, G. (2012, November). *Music Lessons: Enriching Your Child's Musical Experience*. Continuing Education Conferences. University of Ottawa, Ottawa, ON. Invited Guest Speaker.

Comeau, G. (2012, October). *What can research on Piano Learning bring to the private piano teacher?* ORMTA Conferences. University of Ottawa, Ottawa, ON. Invited Guest Speaker.

Comeau, G. (2011, July). *Music Reading and the Piano Method Books*. 3rd World Piano Conference. Isidor Bajic Music School, Novi Sad, Serbia. Invited Guest Speaker.

Comeau, G. (2012, February). *Comparing Dalcroze, Orff and Kodály: Choosing your approach to teaching music*. Dalcroze Society of Canada. Toronto, ON. Invited Guest Speaker.

Comeau, G. (2012, March). *Exploring Period Keyboard Instruments: A Masterclass for Students and Teachers*. University of Ottawa. Ottawa, ON. Invited Guest Speaker.



MOTIVATION

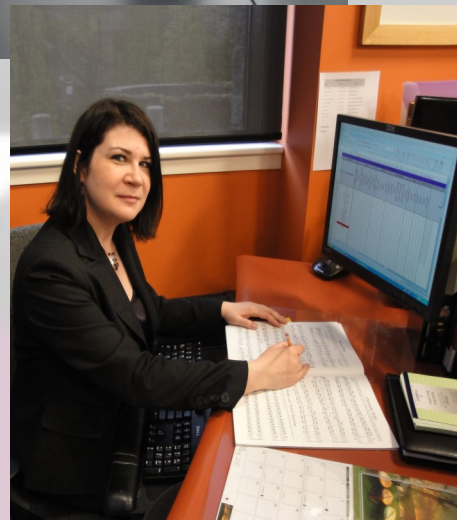
Researchers:

Gilles Comeau—Music, University of Ottawa
Veronika Huta—Psychology, University of Ottawa
Matti Ruippo—Music, Pirkanmaa University of Applied Sciences, Finland
Jaruno Perttunen—Music, Pirkanmaa University of Applied Sciences, Finland
YiFei, Liu—Human Kinetics, Graduate Student at the University of Ottawa
Yuanyuan Lu—Music, University of Ottawa
Émilie Bertrand-Plouffe—Music, Undergraduate Certificate in Piano Pedagogy
Paula Croucher—Music, Undergraduate Certificate in Piano Pedagogy

Papers submitted to refereed journals:

Comeau, G., Huta, V., Liu, Y., Smith, J. (submitted). *Relationships between piano students' motivation and selected aspects of parental influences*.

Comeau, G., Huta, V., Liu, Y. (submitted). *Work ethic and motivation in Chinese and North American children learning to play the piano*.



Gilles Comeau

MUSIC READING

Researchers:

Gilles Comeau—Music, University of Ottawa
Bruno Émond—Cognitive Science, National Research Council
Sylvie Hébert—Audiology, Université de Montréal
Ramesh Balasubramaniam—Neuroscience, McMaster University
Stephanie Ahken—Medicine Student, University of Ottawa
Kimberley Sundell—Music, University of Ottawa
Yuanyuan Lu—Music, University of Ottawa
Allyshia Sewdat—Computer Engineering, Undergraduate Student at the University of Ottawa
Hoang Pham—Medicine Student, University of Ottawa

Papers in refereed journals:

Émond, B., Comeau, G. (accepted). Cognitive modelling of early music reading skill acquisition for piano: a comparison of the Middle-C and intervallic methods. *Cognitive Systems Research*.

Ahken, S., Comeau, G., Hébert, S., Balasubramaniam, R. (2012). Observable eye-movement patterns during the processing of linguistic and music syntactic incongruities. *Psychomusicology: Music, Mind & Brain*. pp. 1-8.

Comeau, G. (2012). Playing by ear in the Suzuki Method: Supporting evidence and concerns in the context of piano playing. *The Canadian Music Teacher*, 62 (3), 42.

Comeau, G. (2012). Suzuki's mother-tongue approach: Concerns about the natural learning process. *The Canadian Music Teacher*, 63 (1), 59.

Papers in refereed conference proceedings:

Émond, B. & Comeau, G. (2012). Cognitive modelling of early music reading skill acquisition for piano. *Proceedings of the 11th International Conference on Cognitive Modeling 2012*. Berlin: Universitaetsverlag der TU Berlin, 43-48.

Oral Communications:

Liu, Y.F., Comeau, G. (2012, November). *The use of eye-tracking technology to measure young piano students' eye movement during sight reading pieces from method books*. Quebec Conference 2012.

Liu, Y.F., Comeau, G. (2012, November). *The effect of notational complexity on advanced piano students' perceptual span and performance quality during sight reading*. Quebec Conference 2012.

Comeau, G. (2011, July). *Music Reading and the Piano Method Books*. 3rd World Piano Conference. Isidor Bajic Music School, Novi Sad, Serbia. Invited Guest Speaker.



Research activities in 2011-2012

PHYSICAL ASPECTS OF PLAYING PIANO

Researchers:

Gilles Comeau—Music, University of Ottawa
Donald Russell—Mechanical Engineering, Carleton University
Isabelle Cossette—Music, McGill University
Flora Nassrallah—Audiology, Graduate Student at the University of Ottawa
Michèle Wheatley-Brown—Music, Graduate Student at the University of Ottawa
Huthaifa Abderahman—Engineering, PHD Student at the University of Ottawa

Papers in refereed journals:

Nassrallah, F., Comeau, G., Russell, D., Cossette, I. (accepted).
Coordination between breathing and different movement markers during pianists' performance tasks. *Perceptual Motor Skills*.

Wheatley-Brown, M., Comeau, G., Russell, D. (submitted). An analysis of terminology used to describe tension and relaxation in piano technique.

Nassrallah, F., Comeau, G., Russell, D., Cossette, I. (in preparation).
Breathing pattern changes observed while pianists performed technical exercises and repertoire.



HEALTH ISSUES

Researchers:

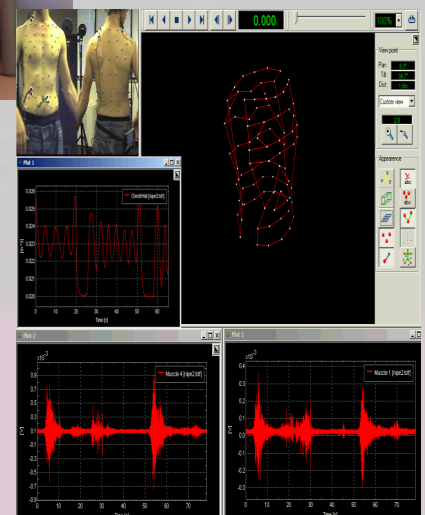
Gilles Comeau—Music, University of Ottawa
Donald Russell—Mechanical Engineering, Carleton University
Monique Frize—Biomedical Engineering, University of Ottawa
Saffa Mohamed—Computer Engineering, Carleton University
Caroline Andison—Mechanical Engineering, Carleton University

Conference papers:

Russell, D., McDill, M. & Comeau, G. (2012, June). *A Biomechanical Investigation of Warm-Up Procedures for Musicians*. Carleton University. Ottawa, ON.

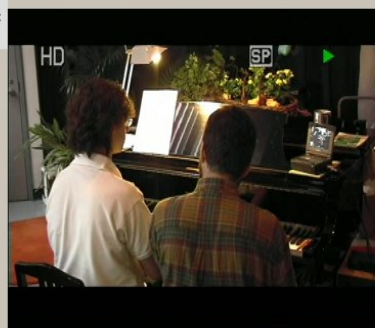
Papers in refereed conference proceedings:

Mohamed, S., Frize, M., Comeau, G. (2011). Assessment of piano-related injuries using infrared imaging. *Proceedings of the 33rd Annual International Conference of The IEEE Engineering in Medicine and Biology Society*, Boston, 4901-4904.



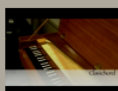
Gilles Comeau

Featured Videos



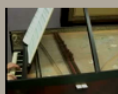
Clip 125

This is a demonstration of a piano lesson being video recorded. The student plays a scale in their lesson. The teacher gives advice when examining the video recording of the lesson to improve the student's piano technique.



Clip 565

Models of a clavichord, harpsichord, pianoforte, modern grand and electric keyboard shown, with descriptions of the key components of the instruments.



Clip 35

A performance of the beginning of Minuet II, from Partita I in B flat, by J.S. Bach. This demonstration shows the mechanisms of the harpsichord.



Clip 34

A performance of Minuet in G Minor, from J.S. Bach's Notebook for Anna Magdalena Bach, BWV 115, by C. Petzold, performed on a clavichord.

VIDEO-MEDIATED LEARNING AND DISTANCE EDUCATION

Researchers:

Gilles Comeau—Music, University of Ottawa

Matti Ruippo—Music, Pirkanmaa University of Applied Sciences, Finland

Martin Brooks—Computer Engineering, National Research Council

Bruno Émond—Cognitive Science, National Research Council

Erin Parkes—Music, Graduate Student at McGill University

Papers in refereed journals:

Parker, E., Comeau, G. (accepted). The Inuit keyboarding project: A cross-cultural distance teaching experience. *Journal of Technology in Music Learning*.

MEDIA COVERAGE

Un Laboratoire de recherche en pédagogie du piano. (2011, July). *Campus. Canal Savoir*.

La recherche au Laboratoire de recherche en pédagogie du piano. (2011, May). *Les samedis du monde. Radio-Canada*.



Gilles Comeau



Music

Denyse Blondin (Université du Québec à Montréal)
William Budai (Indiana University-Purdue University at Indianapolis, IUPUI)
Philip Donner (Virtuosi, Finland)
Francis Dubé (Université Laval)
Elaine Keillor (Carleton University)*
Daniel Landes (Belmont University, Tennessee)
Louise Mathieu (Université Laval)*
Jaruno Perttunen (Pirkanmaa University of Applied Sciences, Finland)*
Kathleen Riley (New York University)
Matti Ruippo (Pirkanmaa University of Applied Sciences, Finland)*
Lauri Väinmaa (Pirkanmaa University of Applied Sciences, Finland)

"Piano Pedagogy hasn't really changed in a long time. Here at the Piano Pedagogy Research Laboratory they're actually finding new information, bringing new data to teachers, pianists and teaching us new techniques. This is extraordinary."

—Jon Kimura Parker



Matti Ruippo



Jaruno Perttunen



Louise Mathieu



Elaine Keillor



Isabelle Cossette



Ursula Stuber

Health Sciences

Nadine Bressler (Epidemiology, Toronto)
Isabelle Cossette (McGill University)*
Ursula Stuber (Université Laval)*

*Current Research Partners

Engineering

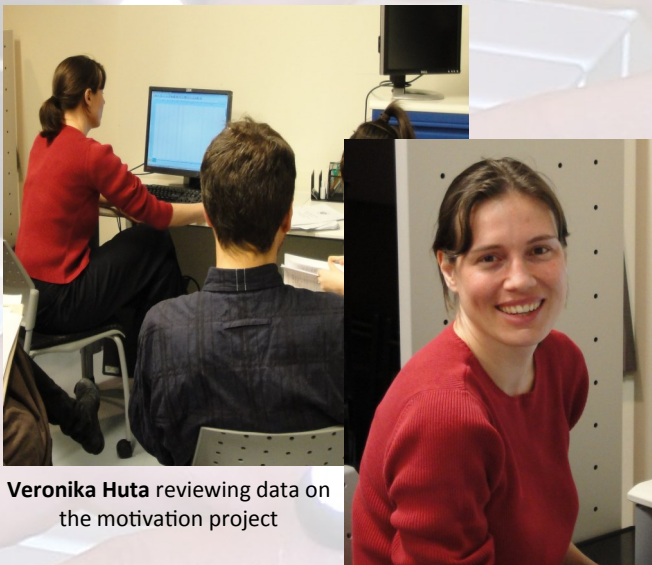
Martin Brooks (National Research Council)*
Abdulmoteleb El Saddik (University of Ottawa)*
Monique Frize (University of Ottawa)*
WonSook Lee (University of Ottawa)
Pierre Payeur (University of Ottawa)
Christophe Herry (Carleton University)
Donald Russell (Carleton University)*
Shervin Shirmohammadi (University of Ottawa)*

Psychology

Alain Desrochers (University of Ottawa)
Isabelle Green-Demers (Université du Québec en Outaouais)
Veronika Huta (University of Ottawa)*
Virginia Penhune (Concordia University)*
Laurel Trainor (McMaster University)



Donald Russell testing the eye-tracker



Veronika Huta reviewing data on the motivation project

Communications

John Spence (Communications Research Centre)*

Cognitive Sciences

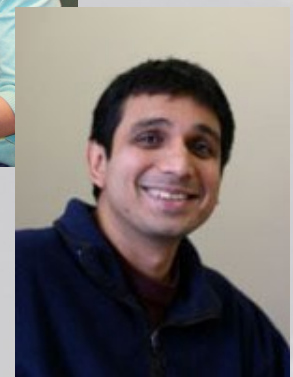
Bruno Emond (National Research Council)*

Neuroscience

Ramesh Balasubramaniam (McMaster University)*



Ramesh Balasubramaniam testing 3-D motion capture



Library Network

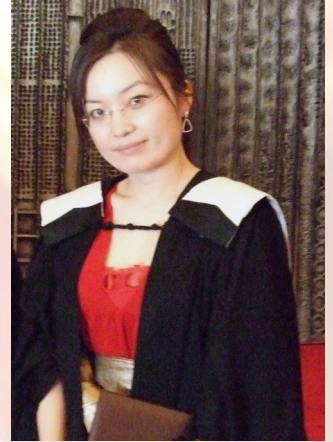
Cécile Prud'homme (University of Ottawa)

Graduate Students

The academic programs associated with the Piano Pedagogy Research Laboratory are research driven. Faculty members are conducting first-class research, which in turn enriches what and how we teach. The program encourages and supports interaction and cooperative effort between students and researchers, which promotes diversified modes of learning.

PhD in Human Kinetics (Research Topic in Piano Pedagogy), University of Ottawa

YiFei Liu (in progress), dissertation focus on music reading
Supervisor: Gilles Comeau



YiFei Liu

PhD in Electrical Engineering, Carleton University

Christophe Herry (2008) *Segmentation and extraction of regions of interest for automated detection of anomalies in clinical thermal infrared images*
Supervisor: Monique Frize

Master of Arts (with Thesis in Piano Pedagogy), University of Ottawa

Allows students to become familiar with existing research in the field and to train as researchers by participating in multidisciplinary research groups.



Kimberley Sundell

Kimberley Sundell (2012) *Comprehensive musicianship and beginner piano method books: A content analysis*
Supervisor: Gilles Comeau

Yuanyuan Lu (2012) *Survey of eighteen North-American piano method books: Repertoire selection and categories*
Supervisor: Gilles Comeau

Michèle Wheatley-Brown (2011) *An analysis of terminology in piano technique*
Supervisor: Gilles Comeau

Catherine Lemay (2008) *Sight-reading for piano students: Comparing three methods of assessment*
Supervisor: Gilles Comeau

Julia Brook (2007) *An on-line digital video library of piano teaching: A case study with five teachers*
Supervisor: Gilles Comeau

Nisreen Jardaneh (2007) *Exploring young piano students' perceptions of effective practice strategies*
Supervisor: Gilles Comeau

Ann Babin (2005) *Music conservatories in Canada and the piano examination system for the preparatory student: A historical survey and comparative analysis*
Supervisor: Gilles Comeau

Line Morais (2005) *L'analogie comme stratégie d'enseignement en pédagogie du piano*
Supervisor: Gilles Comeau

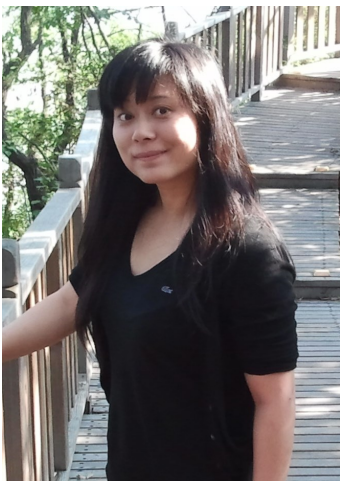
Master of Music (with Major Research Paper in Piano Pedagogy), University of Ottawa

Jason Ray (2007) *The use of technology for the measurement and analysis of piano performance with a discussion of the implications for piano pedagogy*
Supervisor: Gilles Comeau

YiFei Liu (2007) *Cross-cultural analysis of motivation levels of piano students in China and in North America*
Supervisor: Gilles Comeau

Grace Bruno (2004) *Behind the scenes of musical expertise: Genes, environment, personality, motivation and cognition*
Supervisor: Gilles Comeau

Karine Larochelle (2003) *L'impact de la musique dans le développement général de l'enfant de 0 à 6 ans*
Supervisor: Gilles Comeau



Yuanyuan Lu

Master of Applied Science (Electrical Engineering), University of Ottawa

Silvain Bériault (2008) *Multi-camera system design, calibration and 3D reconstruction for markerless motion capture*
Supervisor: Pierre Payeur

Martin Côté (2007) *Video segmentation for markerless motion capture in unconstrained environments*
Supervisor: Pierre Payeur

Master of Applied Science (Mechanical and Aerospace Engineering), Carleton University

Caroline Andison (2011) *EMG-based assessment of co-contraction in forearm muscles while playing the piano*
Supervisor: Donald Russell

Safaa Mohamed (2011) *Evaluation of piano-related injuries using infrared imaging*
Supervisor: Monique Frize

Christy Vant (2007) *Driving point impedance measurements during piano playing*
Supervisor: Donald Russell

Master of Science in Human Kinetics, University of Ottawa

Flora Nassrallah (2010) *Breathing patterns of pianists while executing four performing tasks*
Supervisors: Gilles Comeau, Isabelle Cossette, Donald Russell

Master of Computer Science, University of Ottawa

Javier Mora (2008) *Hapto-visual representation of three dimensional incompressible flows*
Supervisor: Pierre Payeur

Master of Sciences in Interdisciplinary Health Science, University of Ottawa

Lisa Moody (in progress) research topic in measuring health outcomes in musicians
Supervisor: Gilles Comeau



Flora Nassrallah



Lisa Moody



Jillian Beacon



Lindsay Hamilton



Grace Wong

Graduate Diploma in Piano Pedagogy Research, University of Ottawa

Focuses on the study of multidisciplinary research for a better understanding of the processes involved in learning to play the piano. This certificate enables piano teachers to incorporate scientific knowledge into their practice and develops highly qualified professionals with a strong interest in piano pedagogy research.

Grace Wong (in progress)
Lindsay Hamilton (in progress)
Jillian Beacon (in progress)
Meir Sung (in progress)
Vanessa Rektor (2012)
Shannon Maertens (2012)
Yuanyuan Lu (2010)
Ivea Mark (2010)
Michèle Wheatley-Brown (2010)

Shirley Ho (2009)
Marie-Claire Lazure (2008)
Mélina Dalaire (2007)
Erin Parkes (2007)
Julia Brook (2006)
Hoaden Brown (2006)
Leana Azerral (2006)
Nisreen Jardaneh (2006)

Student Involvement

Students have been an integral part of the Piano Lab since its October 2005 opening. Undergraduate and graduate students from a variety of disciplines from the University of Ottawa and Carleton University have contributed to both the administrative and research activities of the Lab.

Music Engineering

Leana Azareal
Ann Babin
Émilie Bertrand-Plouffe
Julia Brook
Hoadan Brown
Tamara Brown
Jacinda Chapman
Mélina Dalaire
Alicia Desjardins
Tamar Dubuc
Emily Gale
Rosemary Harden
Shirley Ho
Bonnie Huor
Nisreen Jardaneh
Danielle Lanteigne
Mary Claire Lazure
Catherine Lemay
YiFei Liu
Yuan Yuan Lu
Shannon Maertens
Sandra Markovic
Lauren McGee
Milada Medinić
Joel Scott-Mignon
Aaron Mogenson
Line Morais
Hiroko Nakagawa
Erin Parkes
Jason Ray
Adam Saikaley
Kimberley Sundell
Michelle Vandal
Sylvain Wellman-Frenette
Michèle Wheatley-Brown

Mathematics Sciences

Daniel de Repentigny
Stephanie Akhen
Hoang Pham

Psychology

Runa Das
Michelle Iznardo
Jacklynne Smith

Communications

Shaun Elie

Marketing

Lina Ji

Engineering

Huthaifa Abderahman
Tanveer Ali
Caroline Andison
Baruylr Baghdasarian
Silvain Bériault
Zacharie Brunet
Pei Cao
Martin Côté
Bowei Han
Christophe Herry
Nimeesh Kaushal
Ali Khanafer
Hanieh Khamseh-Zadeh
Houman Khamseh-Zadeh
Michel Khoury
Daniyal Khurram
Joshua Kotwas
Nimeesh Kaushal
Mathieu Kühn
Jonathan Lam
Javier Mora
Jonathon Neva
Allyshia Sewdat
Mihir Sharma
Junaid Oosman Thair
Christy Vant
Arjun Yogeswaran
Xi Zhang
Samira Zabhi

Health Sciences

YiFei Liu
Flora Nassrallah
Brian Richard
Michael Watson

Sciences

Stephanie Akhen
Hoang Pham

Information Studies

Jada Watson

Film & Sonic

Design

Christian Delahousse



The **Sylva M. Gelber Foundation** supports research and training of undergraduate and graduate students in piano pedagogy research.



Ann Southam (1937-2010) has been one of the Piano Lab's staunchest supporters over the years. She came to the Lab's official opening ceremonies and became a member of the Friends of the Piano Pedagogy Research Laboratory. Her particular interest in the lab's research on music reading led her to establish the Ann Southam Music Reading Fund to promote the Lab's research in this area.

Building an Endowment Fund

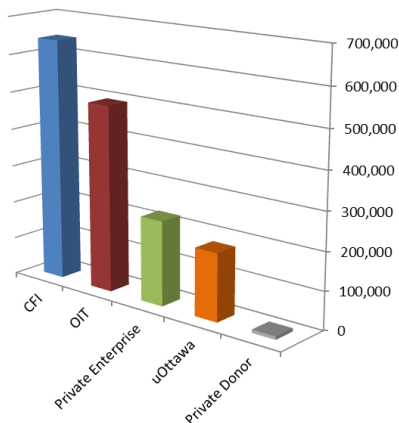
Our ability to pursue the Laboratory's mission depends on the availability of financial resources. We are very grateful to all the Friends of the Piano Lab who have provided financial support to address the Laboratory's emerging needs and priorities.

Official Room Dedication

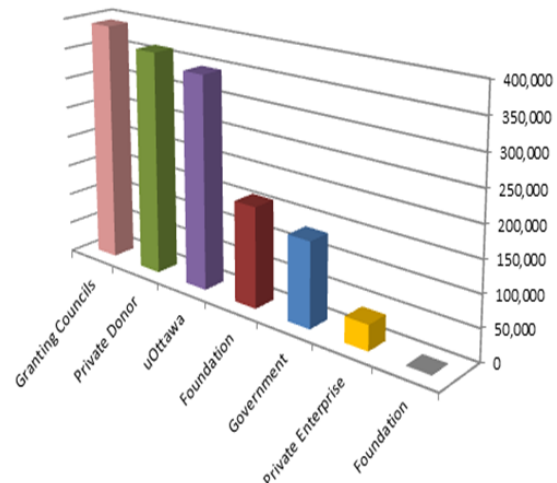
The naming of the Ann Southam Room at the Piano Pedagogy Research Laboratory in November 2011 is a way of further honouring Ann's continuous support for the Lab.



Infrastructure Funding: \$1.55M



Research Funding: \$1.44M





Campus — Un Laboratoire de recherche en
pédagogie du piano
July 2011



La leçon de piano — Découverte, Radio Canada
March 2008

Entretien avec Gilles Comeau - Le monde selon Ma-
thieu — CBOF-FM
October 2007

Notes on the future - The Sunday Edition — CBC Radio ONE
January 2006

Piano revolution - The National — CBC News
October 2005

Entretien avec Gilles Comeau - Bernier et Cie — CBOF-FM
October 2005



Piano: Thermal imaging cameras
December 2005

Young pianist loves his lesson, but really hates to practise
December 2005

**Professors tune in to musicians' pain: Carpal tunnel syndrome, other
conditions could be eased using new imaging system**



Why doesn't every good boy do fine?
2005-2006



Hitting the right notes: New scientific lab keys on piano pedagogy
Summer 2006



Teaching leadership: A laboratory with rhythm
August-September 2006

A high note for piano research
December 2005



Radio-Canada.ca

Les samedis du monde—La recherche au Laboratoire de recherche
en pédagogie du piano
May 2011

Les mystères de l'apprentissage du piano
— Via TVA
February 2006



Piano "Keys" - Tech Now — CTV News
October 2005



Blessures chez les artistes - Panorama — TFO
May 2007

Le laboratoire de recherche en pédagogie du piano -
Panorama — TFO
January 2007

LE DEVOIR

Le pourquoi des fausses notes
March 2006

Un clavier bien mesuré
March 2006

LeDroit

Inuits au diapason d'Ottawa
January 2005



Keys to success
November-December 2007

TIME

The finger fixer: Gilles Comeau
June 2005

TABARET

Harmony in the laboratory
Spring 2005