MEMBERS OF AIRS
Advancing Interdisciplinary Research in Singing

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Dr. Kati Szego, Memorial University of Newfoundland (Folklore), Canada
Dr. Laurel Trainor, McMaster University (Psychology), Canada
Dr. Sandra E. Trehub, University of Toronto (Psychology), Canada
Dr. Christine D. Tsang, Huron University College (Psychology), Canada
Dr. George Tzanetakis, University of Victoria (Computer Science), Canada
Dr. Graham F. Welch, University of London (Education), United Kingdom

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Dr. Ian R. M. Cross, University of Cambridge (Music), United Kingdom
Dr. Steven M. Demorest, University of Washington (Music), United States
Dr. Martin F. Gardiner, Brown University (Music), United States
Dr. Nathalie Henrich, Stendhal University (Speech & Cognition), France
Dr. Susan M. Knight, Festival 500 (Founder & Artistic Director Emeritus), Canada
Ms. Theresa A. Leonard, The Banff Centre (Music and Sound), Canada
Dr. Psycho Loui, Harvard University Medical School (Neuroscience), United States
Dr. Brian J. MacWhinney, Carnegie-mellon University (Psychology), United States
Dr. Esther Ho Shun Mang, Hong Kong Baptist University (Music Education), China
Dr. Jean Mitchell, University of Prince Edward Island (Sociology & Anthropology), Canada
Dr. Richard Parnicutt, University of Graz (Musicology), Austria
Dr. Leslie S. Phillmore, Dalhousie University (Psychology), Canada
Dr. Janice Richman-Eisenstat, University of Manitoba (Faculty of Medicine), Canada
Dr. Gottfried Schlaug, Harvard University (Harvard Medical School), United States
Dr. Sid-Ahmed Selouani, Université de Moncton (Gestion de l'information), Canada
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Dr. Stefanie Sadler Elmer, University of Zurich (Psychology), Switzerland
Dr. Mira T. Sundara Rajan, The University of British Columbia (Faculty of Law), Canada
Dr. Johan E. F. Sundberg, Royal Institute of Technology (Speech, Music and Hearing), Sweden
Dr. Sten Ternström, Royal Institute of Technology (Music Acoustics), Sweden
Dr. Caroline Van Niekerk, Pretoria University (Music Education), South Africa
Ms. Coralie Vincent, Laboratoire Structures Formelles du Langage (CNRS), France
Dr. Jiaxing Xie, China Conservatory (Music), China
Dr. Laurel Young, Concordia University (Music Therapy), Canada

AIRS POST-DOCTORAL FELLOWS (2011-2012)
Dr. Bing-Yi Pan, University of Prince Edward Island (Psychology)
Dr. Steven Livingstone, Ryerson University (Psychology)

PARTNERS
Apple (Edward Smith), Nova Scotia, Canada
Alzheimer’s Society of Prince Edward Island (Corrine Hendricken-Eldershaw), Prince Edward Island, Canada
Confederation Centre of the Arts (Anne Allen), Prince Edward Island, Canada
Culture PEI (Henk van Leeuwen), Prince Edward Island, Canada
East Coast Music Association (Jennifer Campbell), Prince Edward Island, Canada
Grand Avenue Children’s Centre (Cheryl Read), Ontario, Canada
Laurier Institute for Music in the Community (Lee Willingham), Ontario, Canada
Music PEI (Rob Oakie), Prince Edward Island, Canada
Soloway Jewish Community Centre (Maxine Miska), Ontario, Canada
Veterans Affairs Canada (Dr. David Pedlar), Prince Edward Island, Canada
Young at Heart Musical Theatre for Seniors (Catherine O’Brien), Prince Edward Island, Canada

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Dr. Philip Smith, University of Prince Edward Island (Psychology), Canada
Dr. Catherine J. Stevens, University of West Sydney (Psychology), Australia

STAFF
Therese Antonini, Project Manager
Ross Dwyer, Administrative Assistant
Jonathan Lane, IT Co-ordinator
Denise Beaton, Student Assistant
Kelly Gillis, Student Assistant
Erica Ross, Student Assistant
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AIRS SONGBOOK

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Viva la musica
Namana Karu Main
Raga Khamaj
Cibula Iye, Cibula
Simama Kaa, Ruka
Noponkhola
One Voice
Vindum, Vindum, Vefjum Band
Land of the Silver Birch
I’se the B’y that Builds the Boat
Mo Li Hua (Jasmine Flowers)
AIRS Round
O Canada

APPENDICES

DATA SHARING WORKSHOP QUESTIONS
AIRS MIDTERM REVIEW
MEMBERSHIP IN AIRS – POLICY ON MEMBERSHIP
Responsibilities & Benefits of Membership in AIRS
DIRECTOR’S WELCOME

Welcome to the University of Prince Edward Island (UPEI) for AIRS 4th Annual Meeting. For many, it is actually “welcome back”, as our 1st Annual Meeting also took place here, just over 3 years ago. We have much progress to celebrate and much to accomplish in our intensive program from August 21 to 24. Our gathering of over 60 experts, students, partners and stakeholders represents the co-operation and hard work of many individuals. It with the collaborators who contributed to a winning proposal to the Social Sciences and Humanities Research Council (SSHRC) Major Collaborative Research Initiatives (MCRI) Program in 2008. We remain grateful to SSHRC and the Committee members and international external reviewers who saw merit in our proposal and enabled our enormous advances since the start of the grant, April 1, 2009.

A strong home base is needed for success, and the support of the UPEI Island senior administrators is acknowledged. The home team at UPEI, from Psychology, Music, Education, Island Studies, Sociology and Anthropology and the Library provided a foundation, which continues to grow. Gratitude is also expressed to the partners sharing responsibility in the support of this project, honouring formal letters of support for AIRS in 2008. The help of Thérèse Antonini, (AIRS Project Manager), and Ross Dwyer (Administrative Assistant) is much appreciated. Undergraduates Denise Beaton, Kelly Gillis, and Erica Ross, have worked part-time for AIRS for well over a year, and Jonathan Lane has been with the program as the IT Coordinator. Dr. Bing-Yi Pan bolsters our UPEI team working on all three themes of AIRS, as does Dr. Nyssim Lefford, working for a shorter period, focusing on the Digital Library.

Four years ago we dreamed of together advancing interdisciplinary research in singing. This dream became reality. The Midterm Report representing the accomplishments of each Research Team is printed in this Program Book. It reveals that AIRS is breaking new ground in understanding how we learn to sing, how we can teach singing and teach through singing, and how we can improve lives of individuals and societies. Highlights include:

- The new (VAMDA) assessment tool for perception/production aspects of development of singing with data now from three different sites (2 Canadian, 1 UK) (Theme 1.1)
- New studies of infant and adult eye-movements in response to singing (Theme 1.2)
- The new on-line AIRS Test Battery of Singing skills via the Internet worldwide, all cultures and ages (4 to 87+), to illustrate developmental trends and cultural influences (Theme 1.3)
- New collections of children’s songs from PEL to the Grenadine Islands to Tanzania (Theme 2.1)
- New audiovisual collections of a children’s choir, and of formal voice lessons (Theme 2.2)
- Examination of the role of singing on phonological learning of a second language (Theme 2.3)
- Publication of “Island Songs” (Baldacchino, 2011), and administration of the “Quadcultural Songbook” curriculum to Grade V children in Brazil, Canada, China, & Kenya, for investigating singing and cultural understanding (Theme 3.1)
- Administration of the new Intergenerational singing curriculum (Theme 3.2) in 2 sites
- Creation of group singing interventions for persons with lung disease (Theme 3.3)
- Implementation of a functional digital library prototype providing access to information about studies in all sub-themes (Theme 4.0 – Digital Library).

We gather this week to share this new knowledge and to respect the knowledge of each member of our collaboration. It is both our strength and challenge to work across disciplines and cultures.
in order to develop comprehensive theories relevant to both basic and applied research. At our annual meeting, we will reflect on our goals as we work hard and play hard together, and we will rejoice as we think back to June 2009, our first Annual Meeting held on these same premises. The physical and academic premises are the same, but we have moved forward to meet our milestones, broadening our viewpoints, and deepening our insights into both the significance of singing and the issues surrounding it.

The AIRS collaborators have come to UPEI from far and wide, hailing from all but two Canadian provinces, and from 11 other countries, (Brazil, China, Great Britain, France, Iceland, Italy, Japan, Kenya, Portugal, Switzerland, and United States with representation of Greece, India, and Malta by attendees born in those countries. AIRS supported travel for students from all 9 research sub-themes and funded research of students in each of the themes. While the majority of those supported are from Canada, students including recent post-doctorates, from other countries add their perspectives. Acknowledgement is due to Arla Good for serving as the Co-ordinator for the Student and Early Career Professional Group. Time has been scheduled for the group to meet, have fun, discuss among themselves, and share with the entire meeting.

Special recognition is directed to the AIRS Steering Committee: Frank Russo (Theme 1-Development), Patricia Campbell (Theme 2 – Education), and Mary Gick (Theme 3 – Well-Being) for their tireless efforts in monthly meetings, developing policy and steering the course of AIRS so as to enable the progress. The Sub-theme leaders and co-leaders also deserve praise for the advances each has made with their group, including involving student researchers in accomplishing the milestones one-by-one laid out to September, 2012, just next month. AIRS benefits greatly from participation of the Research Team leaders and co-leaders in the Policy and Planning Committee which represents all facets of the project. A full meeting of this Committee precedes the AIRS Annual Meeting and will help to set the course for the next 3 years. We are grateful for the participation and assistance of the AIRS Advisory Board: Dr. Philip Smith, Dr. Hilary Apfelstadt, and Dr. Kate Stevens and appreciate their dedicated presence at this important Annual Meeting. Each has made considerable sacrifice to be with us. Several AIRS members befall unfortunate circumstance that uprooted their plans to be with us. We wish them well.

Throughout the meeting, opportunities to sing will remind us of the wonders of the singing voice. In the first three-plus years of AIRS, we have laid the foundation of our collaboration and of our methods, so as to begin to unravel mysteries of the singing voice. AIRS is now better positioned to define singing from a broad cultural and developmental standpoint, to determine the extent to which every human being can or cannot develop the singing voice, and to obtain evidence showing the benefits of singing for education, intercultural understanding, intergenerational understanding, and other aspects of physical and mental well-being.

I thank each of the many players in the AIRS project for your contributions to the AIRS research. I wish you a most inspirational, communicative, and creative AIRS 4th Annual Meeting, as together, we set the course for the completion of our work over the final years of the project.

Annabel J. Cohen, Ph. D., ARCT
Director and Principal Investigator
AIRS SSHRC MCRI
AIRS 4th Annual Meeting and Technical Program Schedule

Tuesday, August 21 - McDougall Hall, UPEI
(Pre-Conference)

3.1 International Research Project on Singing and Cultural Understanding:
Quad-Cultural Songbook Project: Focus on Children in Brazil, Canada, China, & Kenya

Organized by Lily Chen-Hafteck, assisted by Nancy Gleason & Robert Anderson; participation by AIRS awardees from each country. Other students or AIRS collaborators are welcome.

8:30 AM – 3:00 PM

7:45am Breakfast (provided at Wanda Wyatt Dining Hall – look for us at 1 big table there!)
8:30am Introduction - Dr. Lily Chen-Hafteck
8:45am Report from Brazil (20 minutes)
9:05am Q&A for Brazil
9:15am Report from Canada (20 minutes)
9:35am Q&A for Canada
9:45am Break
10:00am Report from China (20 minutes)
10:20am Q&A for China
10:30am Report from Kenya (20 minutes)
10:50am Q&A for Kenya
11:00am Viewing and comments on Video Data
12:00pm Lunch Break (provided)
12:45pm Introduction, Welcome & Test Battery Proposal – Dr. Annabel Cohen, AIRS Project Director
1:00 pm Data Analyses
2:00pm Plans for the future
2:45pm Wrap-up and Next Steps
3:00pm Meeting Adjourned

Confirmed Attendees:
Lily Chen-Hafteck
Patricia Campbell
Annabel Cohen – Arrives 12:45pm
Robert Anderson
Nancy Gleason
Elizabeth Andang’o (Kenya)
Yue Xiao (China)
Angelita Broock (Brazil)
Beatriz Ilari (Brazil)
Zuraida Abud Bastiao (Brazil)
Alda de Jesus Olivera (Brazil) – Arrives 1pm
Lisa Crawford

Arla Good (Canada)
Kelly Gillis (Canada)

Unconfirmed Attendees:
Xie Jiaxing (China)

Unable to attend:
Frank Russo (Canada)

Available Assistance for Data Analyses:
Jenny Sullivan (arrives afternoon)
Utpola Borah (arrives evenin
Tuesday, August 21
(Pre-Conference)

7:00 PM
For all AIRS Students and Early Career Research Professionals –
Student & ECRP Pizza Dinner
Location: Bill & Denise Andrew Hall Room 142

Note: POSTERS
Posters should be left at registration table to be mounted for display throughout the entire meeting, with opportunities to view before sessions, during coffee breaks. A special poster session takes place Wednesday from 2:15 - 3:30 pm, and the public is invited to view posters from 3:30 – 4:30 pm. Posters are identified with their sub-theme in the program and in the abstract section.
### Tuesday, August 21 Pre-Conference

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<td>Policy &amp; Planning Committee meet to review presentations for Aug. 22</td>
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<td>5:45 PM - 6:30 PM</td>
<td>Policy &amp; Planning Committee dinner</td>
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<tr>
<td>6:30 PM – 9:30 PM</td>
<td>Policy &amp; Planning Committee meeting</td>
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#### AIRS Policy and Planning Committee Meeting

- **Location:** CMTC-AIRS (Robertson Library Building, Lower Level, Room 103)
- **Attendees:** Theme leaders, sub-theme leaders, committee chairs, advisory board and director and AIRS executive staff

| *Hilary Apfelstadt, AIRS Advisory Board |
| *Philip Smith, AIRS Advisory Board |
| *Kate Stevens, AIRS Advisory Board |
| Anna Maria di Sciullo, AIRS Advisory Board (adjunct) |

**AIRS Policy and Planning Committee**

- *Christine Tsang, Co-leader 1.1*
- Laurel Trainor, Co-leader 1.1
- **Frank Russo, Co-leader 1.2 and Theme 1 Leader (Steering Committee)**
- *Sandra Trehub, Co-leader 1.2*
- **Annabel Cohen, Leader 1.3 and Director (Steering Committee)**
- **Patricia Campbell, Leader 2.1 and Theme 2 Leader (Steering Committee)**
  - *Darryl Edwards, Leader 2.2*
  - *Jenny Sullivan, Co-leader 2.3*
  - Andrea Rose, Co-leader 2.3
- **Mary Gick, Theme 3 Leader (Steering Committee)** (repres. by Godfrey Baldacchino)
  - *Lily Chen-Hafteck, Co-leader 3.1*
  - *Godfrey Baldacchino, Co-leader 3.1*
  - Rachel Heydon, Leader 3.2 (by videoconference if possible)
  - Jennifer Nicol, Leader 3.3
- **Jonathan Lane, Technical Support Digital Library**
- **Nyssim Lefford, Facilitator Digital Library**
- Ichiro Fujinaga, Co-leader Digital Library
- George Tzanetakis, Co-leader Digital Library
- **Arla Good, Student and Early Career Research Professionals (SECRP)**
- **Caroline van Niekerk, Global Group (video conference)**
- Corrine Hendriken-Eldershaw, Partner (Laurier Institute for Music in the Community, Ontario)
- **Thérèse Antonini, Administrative Project Manager (Finance), ex officio**
- **Bing-Yi Pan, AIRS Postdoctoral Fellow, ex officio**

**Attending Annual Meeting and Policy and Planning Committee Meeting**

**Agenda:** focus on milestones, mid-term review, and effective annual meeting
### Wednesday, August 22 - McDougall Hall, UPEI

**7:30 AM - 8:30 AM** Breakfast

**8:30 AM – 8:50 AM** Registration/ Coffee

**9:00 AM – 9:15 AM** Welcome, introductions, group singing, and goals of the meeting
- Welcome - James Moran, Assoc. Dean, UPEI Faculty of Arts (2 minutes)
- Annabel Cohen – AIRS Director (2 minutes)
- Philip Smith – AIRS Advisory Board Member (3 minutes)
- Hilary Apfelstadt – AIRS Advisory Board Member (3 minutes)
- Kate Stevens – AIRS Advisory Board Member (3 minutes)
- Singing: Dona Nobis Pacem (4 minutes)

**9:16 AM – 11:00 AM** AIRS Midterm Overview – Orientation Annabel Cohen (3 minutes)

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<td>10:04 AM</td>
<td>Wellbeing: Theme 3 Leader Mary Gick – (4 minutes)</td>
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<td>10:26 AM</td>
<td>Digital Library: brief update/demo – Jonathan Lane/Nyssim Lefford</td>
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<td>10:36 AM</td>
<td>Student-Early Career Research Professionals – Arla Good</td>
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<td>10:41 AM</td>
<td>AIRS Partners and Stakeholders (7 minutes)</td>
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<td>10:51 AM</td>
<td>Global Group – Mayumi Adachi and Stephanie Stadler Elmer</td>
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**11:00 AM – 11:20 AM** Coffee break
11:20 AM – 11:50 AM  Themes breakout (separate discussion for Development, Education, Well-being and Digital Library)

Please take notes during this session for use during group discussion

11:50 AM – 12:20 PM  Reports from each Sub-theme (3 minutes each – within sub-theme, within theme, and across themes)

12:20 PM – 12:45 PM  Group discussion – focus on synergies and translational research implementing change

12:45 PM – 1:15 PM  Lunch – Charlottetown Farmers Market

2:15 PM – 3:30 PM  Closed Poster Session
NOTE: Posters will be displayed throughout the entire meeting.

3:30 PM – 4:30 PM  Public Poster Session welcoming government, partners, stakeholders and UPEI (refreshments and musical entertainment provided)

All SSHRC Reviews take place in the CMTC-AIRS
(Robertson Library, Lower Level, Room 103)

1:00 PM – 2:00 PM  SSHRC Review with the Theme Leaders and the Steering Committee

2:05 PM – 3:40 PM  SSHRC Review with the Sub-Theme Leaders of Themes 1 – 4

4:00 PM – 4:15 PM  SSHRC Review with University Representatives (Dean of Arts, VP Research)

4:30 PM - 5:30 PM  Official Opening with introductions of all attending: AIRS staff, advisory board, research collaborators, partners, stakeholders
Welcome from the Acting VP Academic
McDougall Hall Room 246

5:30 PM – 6:00 PM  Photo opportunity

6:00 PM -7:15 PM  Dinner Buffet
Schurman Market Square, Don & Marion McDougall Hall

7:30 PM- 9:00 PM  Celebration of Singing Concert (organized by Sung-Ha Shin-Bouey)
Steele Recital Hall

9:15 PM  Reception – Faculty Lounge, Main Building
Thursday, August 23 - McDougall Hall, UPEI

7:30 AM - 8:30 AM    Breakfast

Technical Program with presentation titles and authors
(Titles and Authors – detailed abstracts and bios will follow)

8:30 AM – 8:50 AM    Coffee

9:00 AM - 10:40 AM    AIRS THEME 1: SINGING AND DEVELOPMENT

NB: ORAL PRESENTATION ARE LIGHTNING TALKS AND OF NO MORE THAN 12-15 MINUTES
POSTERS ARE LISTED WITH THEIR SUB-THEME BUT WILL BE VIEWED AT LUNCH OR BREAKS

1.0 DEVELOPMENT OF SINGING-GENERAL

9:00 AM – 9:15 AM
Stephanie Stadler Elmer (University of Zurich), Daniel Muzzulini, KSALP-Luzern
(Kantonsschule Alpenquai Luzern)
Early Song Singing Infants discover a rule-based system

1.1 PERCEPTION AND PRODUCTION – INTER-RELATIONS

9:15 AM – 9:30 AM
Amy Fancourt (Goldsmiths, University of London), Christine D. Tsang (Huron University College at Western)
The development of singing perception and its relationship to cognitive development in three cohorts of children aged 5-9 years

1.2 MULTIMODAL (AUDIO, VISUAL, AND MOTOR)

9:30 AM - 9:45 AM
Lisa Chan (Ryerson University), Frank A. Russo (Ryerson University)
The effect of restricted facial mimicry on the perception of emotional song

9:45 AM - 10:00 AM
Mayumi Adachi (Hokkaido University), Helga Rut Guðmundsdóttir (University of Iceland)
Does an Icelandic woman know when a Japanese toddler sings?

10:00 AM - 10:15 AM
Steven Livingstone (Ryerson University), Katlyn Peck (Ryerson University), Frank A. Russo (Ryerson University)
Introducing RA VDESS: a new database of emotional song and speech

POSTERS

❖ Sara Murphy (St. Francis Xavier University), Charlene Parker (Dalhousie University), Petra Hauf (St. Francis Xavier University)
Is This Novel or Familiar? Infants' Looking Responses to Infant-Directed Speaking and Singing

- Niusha Ghazban (Ryerson University), Frank Russo (Ryerson University), Sandra Trehub (University of Toronto), Natalie Ein (Ryerson University), Sabrina Aimola (Ryerson University), & Jean Paul Boudreau (Ryerson University)

Regulating Infants’ Emotions through Maternal Singing and Speech

COFFEE BREAK AND POSTERS  10:15 AM – 10:30 AM

1.3 AIRS TEST BATTERY

10:30 AM – 10:45 AM
Helga Rut Guðmundsdóttir (University of Iceland), Bryndis Baldvinsdottir
Application of the AIRS test battery with Icelandic preschool children

10:45 AM – 11:00 AM
Mike Forrester (University of Kent), Emma Borthwick-Hunter (University of Kent)
Pre-school children's skills with the AIRS test battery

11:00 AM – 11:15 AM
Bing-Yi Pan (University of Prince Edward Island), Annabel J. Cohen (University of Prince Edward Island)
Automated AIRS test battery: A new methodology and preliminary data

POSTERS
- Beatriz Ilari (University of Southern California), Vivian Agnolo Barbosa (Federal University of Parana (UFPR) and Alecrim Dourado Formacao Musical, Brazil), Tiago Madalozzo (Federal University of Parana (UFPR) and Alecrim Dourado Formacao Musical, Brazil)
Musical and non-musical content in children’s favourite tunes

- Sisi Pan (University of Prince Edward Island), Bing-Yi Pan (University of Prince Edward Island), & Annabel J. Cohen (University of Prince Edward Island)
Personality influences on the AIRS Test Battery: A comparison of native Chinese and native Canadian university students on the AIRS Test Battery

11:15 AM – 11:30 AM  DISCUSSION ON THEME 1: DEVELOPMENT

11:30 AM - 12:00 PM  WORKSHOP ON DATA SHARING (CHAIR - MIKE FORRESTER) HELGA GUDMUNDSDOTTIR, JUNE COUNTRYMAN & DONALD MOSES
MacMillian Hall, W.A. Murphy Student Centre

12:00 PM – 1:30 PM  LUNCH
(MacMillian Hall, W.A. Murphy Student Centre)

12:10 PM – 12:20 PM  STUDENT & ECRP REPORT
12:20 PM – 12:40 PM  Félix Neto (Porto University)
Can music change national and racial attitudes?

12:45 PM – 1:05 PM  Elisabetta Corvo (Canterbury Christ Church University)
Exploring the implementation of an English model of health promotion based on singing groups for older adults (Silver Song Clubs) in Italy

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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>12:30 PM</td>
<td>SSHRC Review with the Partners and Stakeholders involved in the project</td>
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<tr>
<td>1:00 PM</td>
<td>SSHRC Review with the AIRS Advisory Board</td>
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<td>1:30 PM</td>
<td>SSHRC Review with the Students at different levels from all units, research sites</td>
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<td>2:30 PM</td>
<td>SSHRC Review with the Project Director</td>
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1:15 PM - 4:15 PM  AIRS THEME 2: SINGING AND EDUCATION – TEACHING SINGING & USING SINGING TO TEACH  MCD HALL

2.1 LEARNING TO SING NATURALLY

1:15 PM – 1:30 PM  Martha Gabriel (University of Prince Edward Island), June Countryman (University of Prince Edward Island), Melissa MacRae (University of Prince Edward Island), Kate Thompson (University of Prince Edward Island), Natalie Sullivan (University of Prince Edward Island)
Children’s informal musicking

1:30 PM – 1:45 PM  Maren Haynes (University of Washington)
“People of the Cloud” in the Evergreen State

1:45 PM – 2:00 PM  Daniella Gramani (Federal University of Paraiba), Caroline Pacheco (Federal University of Paraiba)
How singing is learned by Brazilian girls age 5 – 11 years of age.

POSTERS

- Angelita Broock (Federal University of Bahia), Beatriz Ilari (University of Southern California)
  Children's songs fieldwork project: Bahian children sing their favourite tunes

- Angelita Broock (Federal University of Bahia), Tiago Carvalho (Federal Univ. of Bahia)
  Children’s songs fieldwork project: The case of "Folia de Reis Estrela do Oriente" in Montes Claros, Minas Gerais, Brazil

2:00 PM – 2:30 PM  BOOK PROJECT PLANNING- ALL AIRS COLLABORATORS

2.2 TEACHING SINGING IN FORMAL SETTINGS (INCLUDING FOCUS ON LIFESPAN)

2:30 PM – 2:45 PM  June Countryman (University of Prince Edward Island), Natalie Sullivan (University of Prince
Edward Island)

Formal musicking in a children’s choir: A case study

2:45 PM – 3:00 PM
(John) Christopher Roberts (University of Washington)
Children's Song: Contemporary vs. Historical Versions

3:00 PM – 3:15 PM
Lily Chen-Hafteck (Kean University)
The international project on cultural understanding: An overview

3:15 PM – 3:30 PM Nutrition Break

2.3 Teaching Through Singing

3:30 PM – 3:45 PM
Sandra Cornaz (GIPSA-Lab), Lionel Granjon, Nathalie Henrich (CR1-CNRS), Sonia Kandel, Christophe Savariaux & Nathalie Vallée. (CR1-CNRS)
The Verbotonal Method and the music to enhance French phonetics

Poster
- Henrietta Lempert (University of Toronto), Rachel Williams (University of Toronto), Assunta Ferrante (University of Toronto), Natalie Kwok (University of Toronto)
  Can singing aid language acquisition in post-puberty learners?

3:45 PM – 4:00 PM Discussion of Theme 2: Education

4:00 PM - 6:15 PM AIRS Theme 3: Singing and Well-being

3.1 Singing and Well-being: Cross-cultural Understanding

4:00 PM – 4:15 PM
Benjamin Bolden (Queen’s University), Larry O’Farrell (Queen’s University)
The impact of a culture-bearer on the intercultural understanding of an adult community choir

4:15 PM – 4:30 PM
Rena Sharon (University of British Columbia), Eric Vatikiotis-Bateson (University of British Columbia), Gayle Shay (Vanderbilt University), Laurel Fais (University of British Columbia)
Sustainable new practices for an endangered species of Song

Posters
- Lisa Crawford (University of Southern California), Lily Chen-Hafteck (Kean University)
  Children's Voices on Singing in an Elem Choral Music Program

- Blair Ellis, Lusi Chen, Yuling Chen, Bing-Yi Pan & Annabel Cohen (University of Prince Edward Island)
  AIRS Multicultural choir – Developing a protocol and handbook
3.2 Singing and Well-Being: Intergenerational Understanding

4:30 PM – 4:45 PM
Jennifer Hutchison (Western University), Carol Beynon (Western University), Rachel Heydon (Western University), Susan O’Neill (Simon Fraser University)

I Ain’t No Damn Singer! Exploring the perceptions of older adults involved in an intergenerational singing program

3.3 Singing and Well-Being: Health

4:45 PM – 5:00 PM
Jean Emmerson (University of Saskatchewan), Jennifer Nicol (University of Saskatchewan)

Sing me to sleep: Aboriginal resilience and music

5:00 PM – 5:15 PM
Merrill Tanner (University of Alberta/ Glenrose Rehabilitation Hospital)

Vocal Strengthening Group Treatment

5:15 PM – 5:30 PM
Frank Russo (Ryerson University), Steven Livingstone (Ryerson University)

A novel singing therapy to improve communication of facial and vocal emotion

5:30 PM – 5:45 PM
Amy Clements-Cortes (Baycrest Centre, Toronto, Ontario)

Buddy's Glee Club: Singing for Health and Wellness

Posters

Carina Daugherty (Carleton University), Mary Gick (Carleton University)

Asthma in a sample of Carleton University students

Jennifer Nicol (University of Saskatchewan), Marya Stonehouse (University of Saskatchewan), Katie McCaw (University of Saskatchewan)

Choir Singing as a Health Promoting Behavior

Janet Martin (University of Prince Edward Island), Kay Kleinerman, Annabel Cohen (University of Prince Edward Island)

Qualitative analysis: Benefits of vocal lessons in later life

Marya Stonehouse (University of Saskatchewan), Jennifer Nicol (University of Saskatchewan)

Inclusive Choirs: Welcoming Youth with Disabilities

Tiana Malone (Concordia University)

Laurel Young (Concordia University)

Singing and health: A research initiative at the Centre for Arts in Human Development (CAHD) at Concordia University
5:45 PM – 6:00 PM  DISCUSSION OF THEME 3 SINGING & WELL-BEING

6:30 PM – 7:45 PM  DINNER  (BYBLOS)

7:45 PM – 9:30 PM  Interactive Singing Workshops and Demonstrations (Chair, Patricia Campbell)

7:45 PM
Sandra Cornaz (GIPSA-Lab), Chrystèle Chovelon and Nadia Jauneau-Cury
Ditty as didactic tool for the teaching of French phonetics: Singing and Learning

8:05 PM
Utpola Borah (Ohio State University)
Using multimedia technology to teach North Indian vocal music

8:25 PM
Hans Utter (Ohio State University)
From learning to performing: A case study of Indian vocal music

8:40 PM  DESSERT/COFFEE

8:55 PM
Alda de Jesus Oliveira (Federal University of Bahia)
Using songs from different cultures for the development of voice

9:10 PM
Daniella Gramani (Federal University of Paraiba)
Singing, playing and dancing: Brazilian cultural manifestations

9:25 PM
Jiaxing Xie (China Conservatory)
Presentation TBA

9:40 PM
Lily Chen-Hafteck (Kean University) and 3.1.1 4-country songsters –
Teach another song from Brazil, China, Canada or Kenya, and share some research highlights from the singing and cross-cultural understanding project
Friday, August 24 - McDougall Hall (morning) & Confederation Centre of the Arts (afternoon)

7:30 AM – 8:30 AM Breakfast

8:00 AM – 9:30 AM Coffee/Juice

WORKSHOPS

8:00 AM – 9:30 AM AIRS TEST BATTERY OF SINGING SKILLS WORKSHOP (ROOM 246)
Jennifer Sullivan (Nova Scotia/Ontario), Helga Gudmundsdottir (Iceland/Montreal),
Mike Forrester, Emma Borthwick-Hunter (UK), Beatriz Illari (Brazil/USA),
Annabel Cohen & Bing-Yi Pan (PEI)
Reviewing each of the 11 components and finalizing the protocol
All welcome
3.1 students from the Quad-Cultural Understanding project are also encouraged to attend
The first half hour will entail experiencing the automated AIRS Test Battery as a participant

9:30 AM – 10:00 AM ANALYSIS OF VIDEO
Coralie Vincent (Laboratoire Structures Formelles du Langage (CNRS))
Annotating audiovisual data with ELAN

10:00 AM – 10:45AM DIGITAL LIBRARY WORKSHOP (including a nutrition break) – Mike Forrester, Jonathan Lane, Nyssim Lefford, Theresa Leonard, George Tzanetakis, Coralie Vincent & Donald Moses

10:45 AM – 11:00 AM COFFEE BREAK

11:00 AM– 12:00PM PITCH ANALYSIS WORKSHOP - Steven Livingstone, Stephanie Stadler Elmer, Christine Tsang, Simone Della Bella, & Bing-Yi Pan

12:00 PM-12:30 PM AUDIO RECORDING DO’S & DON’TS: Coralie Vincent

12:45 PM Bus or Taxi to downtown Charlottetown

1:00 – 2:30 PM Lunch - Victoria Row (next to Confederation Centre for the Arts)
AIRS Singer-Songwriters or Simply Singer Informal Performances
Every song has two stories

2:30 PM - 5:30 PM Events will be in the Confederation Centre for the Arts
2:30 PM - 4:30 PM Vocal Master Class with Darryl Edwards –

4:30 PM – 5:30 PM The International Project on Cultural Understanding: a progress report
Lily Chen-Hafteck and the 3.1.1 Quad-Country Researchers
5:30 PM - 5:45 PM  Open discussion - Resolutions and final comments

5:45 PM - 5:55 PM  Comments from the AIRS Advisory Board (Philip Smith, Kate Stevens)

5:55 PM - 6:00 PM  Final Remarks – Annabel Cohen

6:30 PM  Student and ECRP Finale at the Pourhouse

9:00 PM  Deserts and get-together for all
          72 Trafalgar St. (15 minutes walk to the UPEI Campus, between downtown and UPEI)
Stefanie Stadler Elmer (University of Zurich)
Daniel Muzzulini (Kantonsschule Alpenquai Luzern)

Theme 1.0

**Early Song Singing Infants discover a rule-based system**

The phenomenon of early song singing allows studying the infants’ emerging productive musicality. Song singing consists in combining linguistic and musical elements. Both types of elements are vocal sounds differing in fundamental frequency, duration, intensity, and timbre. Here, we focus on children growing up with German as their native language. What does early song singing reveal about the young singer’s ability to adopt rule-based behaviour? The singing-before-speaking hypothesis expects musical features to prevail, whereas some music educators expect the linguistic elements to appear first. To address this question, the following steps are taken: We carry out microgenetic analyses of young children’s song singing using acoustical methods. We also analyze traditional German children’s songs in order to derive and formalize rules. Finally, a meta-analysis is carried out to match the theoretical rules with the children’s productions. Results show that musically stimulated children at the beginning of their second year are able to produce pitch patterns in structured time, to create songs that match well with culture-specific musico-linguistic rules.

Melodic contour, phrase segmentation, metric and rhythmic patterns, their repetition and variation, as well as onomatopoeic syllable formation are major elements children use to create a stream of ordered sounds. Linguistic features such as word formation, however, are less prominent or even absent. Typical for emotional states of playfulness and wellbeing, musically stimulated young children’s vocalizations show more differentiations with respect to musical features than to linguistic ones. These children discover very early how to control pitch and intensity, which prepares them for pre-musical and singing-like vocalizations. Less musically stimulated children tend to focus primarily linguistic features. Altogether, results suggest that song timing rules provide a temporal framework for regular motor movements and for filling in linguistic elements that still may lack semantic meaning.

Dr. Stefanie Stadler Elmer is an Associated Professor of Psychology at the University of Zurich. She received her PhD from the University of Bern and her Habilitation from the University of Zurich. Her main interests in research and teaching concern the development of music and language, song singing, and methods to foster early development in these domains. She is involved in several research projects at national and international levels, e.g., as a collaborator in the AIRS (Advancing Interdisciplinary Research in Singing), supported by the Social Sciences and Humanities Research Council of Canada.

Dr. Daniel Muzzulini studied mathematics, musicology, physics, and philosophy at Zurich University and computer science at FHBB Basle and received his PhD from Zurich University in 2004. He was assistant of applied mathematics of ETH Zurich (1983-1992), research staff member at Zurich University (1992-1993), and programmer (1999-2001). Since 2004 he has been teacher of mathematics at Kantonsschule Alpenquai Lucerne. His main research focus shifted from
mathematical music theory toward the history of science, the formation and chance of theoretical concepts of sound, colour, consonance, timbre, space and time.

Amy Fancourt (Goldsmiths, University of London)
Christine D. Tsang (Huron University College at Western)

Theme 1.1

The development of singing perception and its relationship to cognitive development in three cohorts of children aged 5 to 9 years

Introduction: Berkowska and Dalla Bella (2009a) have proposed a vocal-sensorimotor loop model of singing in which auditory pitch information is mapped onto vocal-motor movements during singing. This vocal sensorimotor loop model suggests that memory, motor skill, perception and feedback all contribute to singing ability. Many components of the vocal sensorimotor loop begin to develop during infancy, but take a long time to reach maturity (Tsang, Friendly & Trainor, 2011). When considering the development of the sensorimotor loop model of singing, it is important to consider how the ongoing maturation of cognitive abilities may interact with different components of the model. This pilot study focused on the role of perception in the development of singing and investigated the interplay between perception, language and cognitive ability in 3 groups of 5-9 year old children across 3 testing sites in the UK and Canada.

Method: Perception was measured using the ‘Vocal Auditory Motor Development Assessment’ (VAMDA).

Perception was measured in two ways:
1. Ability to discriminate between two short melodies (synthesized ‘ba’ female voice).
2. Ability to detect a small pitch interval change (from 200 cents to 5 cents).

The Digit Span subtest of the Wechsler Intelligence Scale for Children (WISC) was used to assess short term/working memory and The British Picture Vocabulary Scales (BPVS) were used to assess receptive vocabulary.

Results: In all groups, there was a significant correlation between raw score on the digit span task and performance on the melody discrimination task, r (22) = .449, p<.05 (UK sample), r (24) =.510, p<.05 (Canadian sample). There was a significant correlation between raw vocabulary scores and performance on the pitch interval discrimination task, r (22) = .530, p<.05 (UK), r (24) = .318, p<0.05 (Canada).

Discussion: The findings support the predictions of the sensorimotor loop model (Berkowska & Dala Bella, 2009) and show that cognitive and language ability interact with the capacity to perceive and discriminate changes in pitch and melody. The next step is to investigate how cognitive, language and musical perceptual ability may relate to pitch accuracy in singing production.

Amy Fancourt has a BSc Honours in Psychology from Durham University, an MSc in Cognitive Neuropsychology from The University of London, Birkbeck College and is currently working towards a PhD in psychology at The University of London, Goldsmiths College. Her research interests include music perception and cognition in children with atypical language development.
Christine Tsang is an Associate Professor and Chair of the Department of Psychology at Huron University College at the University of Western Ontario. She has published several research articles on the development of music perception and cognition. Her many research interests include examining the effect of context on infant musical preferences, multimodal perception of music during infancy, and the role of music training on language and cognitive development. Christine is also a classically trained pianist, and in recent years has started playing the violin.

Lisa Chan (Ryerson University)
Frank A. Russo (Ryerson University)

Theme 1.2 (Short Oral)

The effect of restricted facial mimicry on the perception of emotional song
During vocal communication, faces continuously move and express linguistic, musical, and affective information (Munhall et al., 2004; Thompson, Russo & Livingstone, 2010). Subtle mirroring of visual aspects of singing performance has been shown through use of facial electromyography of observers (Livingstone, Thompson & Russo, 2009; Chan, 2010). According to the facial feedback hypothesis, producing a facial expression of emotion leads to the experience of that emotion. Thus, by unconsciously mimicking facial expressions, observers may have rapid access to the performer’s intentionality. However, it is not known whether mimicry is necessary to understand emotion in song. To better understand the role of facial mimicry in emotional understanding, we examined aspects of facial animation of the observer and the effect of constraining facial movements on emotional and non-emotional judgments. It was hypothesized that the lack of facial mimicry would only hinder emotion-based judgments. Participants were given two judgment tasks (emotional, non-emotional) while their facial movements were either restricted by a clay-based mask (Mask condition) or not (No Mask condition). In the emotional judgment task, participants were asked to identify the emotional intent (happiness, neutral, sadness) and intensity of a singer. In the non-emotional judgment task, participants were asked to identify non-isochronous rhythms. Both groups did not differ in their performance of emotion identification. Interestingly, though, there was an effect of condition on average emotional intensity scores; participants in the Mask condition rated the emotions as significantly less intense than those in the No Mask condition. It was also found that both groups did not differ in their performance of rhythmic judgment. These results suggest that while facial mimicry may not be necessary to identify simple emotions (e.g., happiness, sadness), lacking the ability to mimic may dampen the intensity of perceived emotions, which may have effects on an observer's experience of musical performances.

Lisa Chan is a Ph.D. student in psychology at Ryerson University and specializes in music cognition and perception. She also holds an A.R.C.T. in both Piano Performance and Piano Teaching.

Frank Russo is Associate Professor of Psychology at Ryerson University and Adjunct Scientist at
the Toronto Rehabilitation Institute. He is a member of the AIRS steering committee and is active across all three themes of the project. He is currently serving on the board of directors of the Canadian Acoustical Association and the Society for Music Perception and Cognition. He also serves on the editorial boards of Music Perception, Psychomusicology, and Music Therapy. After earning his Ph.D. from Queen's University at Kingston, Frank completed Post-Doctoral Fellowships in Music Cognition and Cognitive Audiology. He founded the SMART (Science of Music, Auditory Research and Technology) lab at Ryerson in 2006. Projects in the lab tend to be highly multidisciplinary, often incorporating behavioral, computational and electrophysiological methods. Recent projects have focused on sensorimotor interactions and multisensory integration involved in singing and speech.

Mayumi Adachi (Hokkaido University)  
Helga Rut Guðmundsdóttir (University of Iceland)  

Themes 1.1, 1.2 & 1.3 (Short Oral)

Does an Icelandic woman know when a Japanese toddler sings?
Adachi and Ando (2010) demonstrate that Japanese mothers can interpret a Japanese toddler’s linguistically ambiguous vocalizations as either talking or singing, depending on the context sampled. Similar interpretations have been confirmed with Japanese fathers (Adachi & Ding, 2011), Japanese college students (Adachi, 2010, 2011), Chinese college students (Ding & Adachi, 2011), and German mothers (Adachi & Falk, 2012). In the present study, we further explore this phenomenon with young Icelandic women, mothers and non-mothers. Twenty-one Icelandic women listened to the same 50 vocalizations used in the earlier studies and evaluated whether each vocalization sounded as talking or singing. Overall results indicated that Icelandic women interpreted the Japanese toddler’s vocalizations taken from infant-directed speech contexts more as though it were talking than as singing and those taken from infant-directed song contexts more as singing than as talking. We will report the vocal cues used by Icelandic women to differentiate two types of vocalizations in our presentation.

Mayumi Adachi worked as a piano teacher after receiving her B.A. in music education from Niigata University. She studied piano pedagogy at Teachers College at Columbia University, where she completed her M.A. and Ed.M. in music and music education while studying psychology. She received her Ph.D. in psychomusicology at the University of Washington, and worked as a postdoctoral fellow at the University of Toronto at Mississauga. Her interdisciplinary background gave her flexibility in her career, teaching music education (Yamanashi University) and psychology (Hokkaido University), as well as conducting quantitative and qualitative research on a variety of phenomena surrounding the development and learning of music. In the past, she used “singing” as a measure for children’s melodic expectancy and their communication of emotion. As an AIRS project, she has been studying how parents and young adults interpret a toddler’s vocalizations as songs cross-culturally. She chaired the 10th International Conference on Music Perception and Cognition, and has served on the editorial board of Psychomusicology, Psychology of Music, the International Journal of Music Education, and Journal of Music Perception and Cognition.
Helga Rut Guðmundsdóttir is a professor of music education at the University of Iceland. She will work as visiting professor at the BRAMS laboratories for brain, music and sound research in Montreal during the academic year of 2012-2013. Helga’s area of research is within music education and music perception. She has conducted research in the area of children’s musical development, music perception and music reading skills. Recently she has studied musical development in infancy and the impact of parent infant music courses. Currently she is preparing a research study on infants’ song acquisition and a study on the effects of a special music program on 3-year-olds’ pre-reading skills. Helga founded the Iceland center for music research in February 2011 together with 9 other music institutions in Iceland. Helga is the chair of the center and has organized three conferences on music research since the founding of the center.

Steven Livingstone (Ryerson University)
Katlyn Peck (Ryerson University)
Frank A. Russo (Ryerson University)

Themes 1.2 & 3.3

Introducing RAVDESS: a new database of emotional song and speech
This paper introduces the Ryerson Audio-Visual Database of Emotional Speech and Song. Our purpose in creating this battery was to provide researchers with a high-quality, freely-available set of audio-visual recordings of emotional speech and song in North American English. The battery consists of 12 highly trained actors, speaking and singing short statements with 9 different emotions, each with two emotional intensities. We report on psychometric evaluations, facial motion, and acoustic properties. The battery will allow researchers to assess the relative contributions of audio and visual channels, and to draw comparisons between response to emotional speech and song.

With a Ph. D. in Computer Science and Bachelors in Physics and Information Technology, Steven Livingston brings an interdisciplinary skill set to singing research. Since completing his Ph. D. in 2008, he has undertaken a program of research dedicated to understanding the role of facial expressions in singing performance. In 2009, he provided the first time-course analysis of facial expressions in emotional singing. The study, which was done in collaboration with Bill Thompson and Frank Russo, revealed that performers’ facial expressions differentiated their emotional intentions. This research was continued under the supervision of Caroline Palmer and Marcelo Wanderley at McGill University, where he acquired extensive analytical techniques for the study of motion and auditory data. Steven has been an AIRS postdoctoral fellow since 2011, working with Frank Russo at Ryerson University on the development of facial mimicry in emotional singing.

Frank Russo is Associate Professor of Psychology at Ryerson University and Adjunct Scientist at the Toronto Rehabilitation Institute. He is a member of the AIRS steering committee and is active across all three themes of the project. He is currently serving on the board of directors of the Canadian Acoustical Association and the Society for Music Perception and Cognition. He also
serves on the editorial boards of Music Perception, Psychomusicology, and Music Therapy. After earning his Ph.D. from Queen's University at Kingston, Frank completed Post-Doctoral Fellowships in Music Cognition and Cognitive Audiology. He founded the SMART (Science of Music, Auditory Research and Technology) lab at Ryerson in 2006. Projects in the lab tend to be highly multidisciplinary, often incorporating behavioral, computational and electrophysiological methods. Recent projects have focused on sensorimotor interactions and multisensory integration involved in singing and speech.

Sara Murphy (St. Francis Xavier University)
Charlene Parker (Dalhousie University)
Petra Hauf (St. Francis Xavier University)

Theme 1.2

Is This Novel or Familiar? Infants' Looking Responses to Infant-Directed Speaking and Singing

Introduction: By 6 months of age, infants become increasingly interested in their environment (Legerstee et al., 1987). Thus, it is important to understand how social partners should interact with infants so that infants can benefit from attending to these interests. Recent research on infant-mother dyads suggests that infant-directed singing promotes engagement and attention, while infant-directed speaking facilitates heightened arousal and infant learning (Nakata & Trehub, 2004).

Method: To further investigate infants’ responsiveness to these two vocal styles, the present study investigated 24 6-month old infants; responses to infant-directed singing and speaking from a non-maternal source. Infants watched audiovisual stimuli presenting an adult engaging in infant-directed-singing and speaking of both familiar and novel lyrics. During the presentation, infants’ looking behaviour was recorded with respect to overall looking time, and looking time to the mouth and the eye regions.

Results: Overall, looking time was significantly longer for episodes of infant-directed singing than for infant-directed speaking of familiar and novel lyrics, suggesting increased engagement in singing episodes. Analyzes of the proportional looking time for the mouth and the eye regions revealed that infants prefer attending to the mouth rather than the eyes when shown singing and speaking episodes of a familiar song. When the novel lyric was spoken, infants preferred attending to the mouth, however when the novel lyric was sung, infants attended to the mouth and the eyes equally long. This may indicate that infants are interested in emotional information when shown a novel song. Data from 12-month old infants is currently being collected to investigate developmental changes in relation to language onset.

Discussion: Findings could have implications for infant learning and adult-infant interaction, suggesting that infant-directed singing may promote emotional engagement, while infant-directed speaking may facilitate information processing.

Sara Murphy is currently an undergraduate student entering her final year at St. Francis Xavier University. Since November of last year, she has been working for Dr. Hauf as a research assistant.
in the Infant Action and Cognition Lab, giving her the opportunity to expand her knowledge in Developmental Psychology. She has begun working on her thesis and plans to continue her education through graduate studies in Industrial/Organizational Psychology in future years.

Charlene Parker has a Bachelor of Science degree from St. Francis Xavier University and is currently working towards her Master’s in Experimental Psychology at Dalhousie University. Her undergraduate research focused on imitation in infants and her Master’s thesis involves mimicry and its influence on sharing in pre-schoolers. Her main research interests center on social cognition, especially in infancy and toddlerhood. In relation to AIRS, she is interested in the social relationship within the parent-infant dyad and how this experience can be enhanced through singing.

Petra Hauf has a Doctoral degree from the University of Frankfurt, and previously worked as a Senior Research Scientist at the Max Planck Institute for Human Cognitive and Brain Sciences in Germany. Since 2006 she is a Psychology Professor at St. F.X. and a Canada Research Chair in Cognitive Development. One line of her research focuses on infant motor and cognitive development, especially on the development of action and emotion understanding. Furthermore, she is interested in how young infants process infant-directed singing and speaking.

Niusha Ghazban (Ryerson University)
Frank Russo (Ryerson University)
Sandra Trehub (University of Toronto)
Natalie Ein (Ryerson University)
Sabrina Aimola (Ryerson University)
Jean Paul Boudreau (Ryerson University)

Theme 1.2

Regulating Infants' Emotions through Maternal Singing and Speech

Background: The interaction between a mother and her infant has been described as an intricate ‘dance’ involving coordinated singing and movement. It is widely accepted that infant-directed (ID) speech, or motherese, is an effective means of communicating with infants and holding their attention. Infants similarly show a preference and respond to ID singing (Trainor, 1996). ID singing is a universally observed caregiving behaviour used by mothers to change and accommodate their infants’ emotional state (de l’Etoile, 2006; Trehub & Nakata, 2003). While both ID speech and singing appear to be equally successful in modulating infants’ attention and arousal (Nakata & Trehub, 2004), the consequences of maternal speech and singing to regulate stress are less clear. The current study examined infants’ behavioural and physiological responses to their mothers’ singing and speech following an acute stressor induced by mother’s still-neutral face.

Method: Forty-two, 10-month-old infants participated in this study. Using the Face-to-Face/Still-Face (FFSF) procedure (Tronick et al., 1978), the mothers and infants engaged in a three stage interaction: 1) Face-to Face playtime; 2) Mother’s display of neutral still-face; and 3) the Reunion phase. The Reunion phase was controlled such that mothers re-engaged with their infants by either
singing or speaking. Infants were subjected to three repetitions each of singing and speech for a total of six trials over a 30-minute session. Behavioural responses such as visual fixation, motoric activity and emotional valence were coded. Skin conductance levels were monitored via a sensor attached to the infants’ right foot.

**Results:** Behavioural analyses revealed greater visual fixation on the mother during maternal singing (M = 11.50sec) than in maternal speech (M = 5.77sec), F (1,18) = 18.59, p<.001. During visual fixations on the mother, infants demonstrated significantly more “frozen” motoric activity during maternal singing (M = 7.02sec) than during maternal speech (M = 1.72sec), F (1,18) = 17.55, p<.01. Although the induction of stress as measured by skin conductance was comparable in singing and speaking conditions, F (1,8) = 1.08, p>.05, skin conductance level during the Reunion phase was lower during maternal singing (M=.160μΩ) than during maternal speech (M=.926μΩ), F(4,60) = 2.87, p<.05.

**Conclusion:** This is the first study to directly examine the effects of maternal vocalizations in regulating infants’ stress, and our findings indicate that maternal singing provides a form of “homeostasis” in regulating infants’ stress more effectively than speech. The pronounced reduction in motoric activity while visually fixated on the mother during the singing condition is reflective of infants’ sustained attention as well as the relaxing outcomes of maternal singing, an observation consistent with Nakata & Trehub (2004). Ultimately these findings demonstrate the astounding effects of maternal singing and shed new light into the perplexing issues with socio-emotional development.

**Niusha Ghazban** (M.A., Ryerson University, 2009; B.Sc., McMaster University, 2007) is a third year doctoral student under the supervision of Drs. Jean-Paul Boudreau and Frank Russo at Ryerson University, and in collaboration with Dr. Sandra Trehub at University of Toronto. With over 6 years of research experience examining infants’ cognitive and perceptual processes, she has presented at various professional meetings such as International Conference on Infant Studies (ICIS) and Society for Research in Child Development (SRCD). She has served as the Canadian Psychological Association (CPA) Developmental Section Student Representative (2008-2011) and is currently serving as AIRS’s Student Representative (Theme 1). For her doctoral comprehensive, she conducted a major review paper examining mother-infant synchronous interactions from prenatal to toddlerhood as well as in clinical populations when the natural bond and attachment are disrupted. Her doctoral dissertation focuses on emotion regulation through maternal singing after an acute stressor using the Still-Face Paradigm (Tronick et al., 1978). The first part of Ghazban’s project examines how maternal singing and speech can help to alleviate stress in 10-month old infants, while the second study examines whether a mother’s soothing or playful singing is most effective in regulating infants’ emotions. These studies highlight the notion that music and song are a form of “distal communication” that can modulate arousal and attention when physical proximity to soothe the infant is not possible (e.g., driving in a car).

**Frank Russo** is Associate Professor of Psychology at Ryerson University and Adjunct Scientist at the Toronto Rehabilitation Institute. He is a member of the AIRS steering committee and is active across all three themes of the project. He is currently serving on the board of directors of the Canadian Acoustical Association and the Society for Music Perception and Cognition. He also serves on the editorial boards of Music Perception, Psychomusicology, and Music Therapy. After earning his Ph.D. from Queen’s University at Kingston, Frank completed Post-Doctoral Fellowships in Music Cognition and Cognitive Audiology. He founded the SMART (Science of
Music, Auditory Research and Technology) lab at Ryerson in 2006. Projects in the lab tend to be highly multidisciplinary, often incorporating behavioral, computational and electrophysiological methods. Recent projects have focused on sensorimotor interactions and multisensory integration involved in singing and speech.

Sandra E. Trehub obtained her doctorate in psychology from McGill University in 1973. At present, she is Professor Emeritus of Psychology at the University of Toronto and Adjunct Professor at the University of Montreal. She has three principal domains of research (1) infants' perception of melody and rhythm, (2) maternal singing and its impact on infants, and (3) music perception and production in congenitally deaf children with cochlear implants.

Natalie Ein has recently obtained her undergraduate degree in Arts and Contemporary Studies at Ryerson University. Throughout her undergraduate studies, she became fascinated in the field of Psychology and began to pursue a research assistant position in the C.H.I.L.D. Laboratory under the supervision of Dr. Jean-Paul Boudreau in 2010. She became particularly interested in projects related to mother-infant interactions and emotion regulation through singing, and began to work closely on these projects with Ph.D. student, Niusha Ghazban. In her capacity, she was responsible for recruiting participants as well as data collection and coding using both behavioural and physiological measures. This experience has strengthened her research skills and has prepared her for future projects. She has had the opportunity to present a segment of a project as an author at the International Conference on Infant Studies (ICIS, 2012), and is very grateful to AIRS, Dr. Frank Russo as well as her supervisor Dr. Jean-Paul Boudreau and Niusha Ghazban for this experience. She plans on continuing her education to graduate school and continue in research investigating the long- and short-term effects of music and relaxation therapy in children and adults.

As a fourth year psychology undergraduate student at Ryerson University, Sabrina Aimola has had the privilege of working in the C.H.I.L.D. Laboratory under the supervision of Dr. Jean-Paul Boudreau. For over a year, she has been involved in various projects examining infants’ cognitive and socio-emotional development. Her efforts in the recruitment of participants and assisting with projects related to the effects of maternal singing on stress regulation in infants has provided her with extensive knowledge in behavioural and physiological methodologies, the literature, data coding and a presentation at the International Conference in Infant Studies (ICIS, 2012). She is grateful to AIRS, Dr. Frank Russo as well as her mentors, Dr. Jean-Paul Boudreau, and doctoral student Niusha Ghazban for this opportunity. Her involvement in these projects has sharpened her skills as a growing researcher and has prepared her for other prospective research. After completing her undergraduate degree, she plans to apply to graduate programs and pursue prospective research studies with school-aged children and adolescents investigating how family dynamics influence children’s later development.

Jean-Paul Boudreau (PhD, 1997, Tufts University in Boston) is Professor of Psychology and Dean of Arts at Ryerson University. He is Director of the Cognition, Health, Infancy, Learning, Development (CHILD) Laboratory, training home to a thriving undergraduate and graduate student community. His scholarly interests in developmental science include the study of perception, action, and cognition in the first year; the interaction of social-cognition and goal-directed behavior; and the cognitive-neuromotor aspects of childhood disorders, including ASD. Boudreau has published in numerous journals and volumes including Child Development, Infant Behaviour and
Application of the AIRS test battery with Icelandic preschool children

The AIRS test battery of singing was administered to 5- and 6-year-old children (N = 42) in three Icelandic preschools. In this presentation the challenges and successes of administering the test to children of this age will be presented. Issues concerning the adaptation of the test to young Icelandic speaking children will be discussed. In this presentation the children’s performances will be reported on test item 6 which included singing back musical patterns. In order to ensure the consistency of the stimulus the musical patterns were pre-recorded using a child singer with a stable pitch production. The performances were analyzed using a descriptive method of classifying singing performances into categories: 1) Very secure singing, 2) Fairly good singing and 3) Imprecise singing. The criteria for the three categories used will be explained in detail and actual examples from recordings provided. Half of the children tested were in a preschool with a special music teacher (n = 22) and the other half without a music teacher (n = 22). Comparisons between the two groups on test item 6 indicated that there were equal numbers of insecure singers in both groups. However, there were more very secure singers in the group with a music teacher than in the group without a music teacher.

Helga Rut Guðmundsdóttir is a professor of music education at the University of Iceland. She will work as visiting professor at the BRAMS laboratories for brain, music and sound research in Montreal during the academic year of 2012-2013. Helga’s area of research is within music education and music perception. She has conducted research in the area of children’s musical development, music perception and music reading skills. Recently, she has studied musical development in infancy and the impact of parent infant music courses. Currently she is preparing a research study on infants’ song acquisition and a study on the effects of a special music program on 3-year-olds’ pre-reading skills. Helga founded the Iceland center for music research in February 2011 together with 9 other music institutions in Iceland. Helga is the chair of the center and has organized three conferences on music research since the founding of the center.

Mike Forrester (University of Kent)
Emma Borthwick-Hunter (University of Kent)
Theme 1.3

Pre-school children's skills with the AIRS test battery

Introduction: This study looks in detail at the early singing skills of pre-school children using the AIRS test battery. Given the possible constraints of the AIRS singing tasks, we examined various factors that may influence very young children’s confidence when singing. These included the setting of the testing, the presence of parents, using toys and puppets, and procedures for encouraging participation.

Method: 30 children aged 3-4 years were video and audio-recorded using the AIRS battery either in a school setting or in a child-development lab by four different testers. To examine the factors described above, alterations were made during the lab recordings with respect to the procedure and context of testing. Following recordings, audio and video analyses were conducted so as to establish the manner in which the setting, context and procedures influenced children’s singing.

Results: Preliminary analysis indicates that (a) the presence of parents with 3 year-old children may hinder children’s performance; (b) participation by children is enhanced where the tester is more interactive; (c) the use of puppets can aid engagement; and (d) producing an informal setting further encourages children’s participation.

Discussion: The results highlight the importance of flexibility when testing very young children using the AIRS battery. A number of factors appear to impede or encourage children’s confidence when singing with these tasks. Establishing precisely children’s very early singing skills depends in part in providing a supportive environment for the display of their competencies. The nature of pre-school children’s individual differences calls for considerable flexibility on the part of testers. Future analysis of this data set will establish the details of their singing skills across the informal and formal settings realized in this work.

Emma Borthwick-Hunter tested and wrote her final year project for her Psychology undergraduate degree on English primary school children using the AIRS battery and was awarded funding to travel to the 3rd Annual AIRS conference, St John’s in 2011 to display a poster presentation of her findings. After graduating in 2011, Emma has worked in the Child Development Unit at the University of Kent as a Research Assistant within the Psychology department. During this time she tested pre-school children using the test battery and is currently reviewing longitudinal research on the musicality of young children. Emma and Dr. Mike Forrester have been invited to deliver a seminar on Musicality and their work with the AIRS project to Psychology academics at Christchurch University in Canterbury, Kent. They have also been invited to attend and deliver a seminar titled Analyzing musicality during the early years: Small talk and great songs to the SEMPRE 40th Anniversary Conference in September 2012.

Michael Forrester is Reader in Psychology at the University of Kent (England). His interests are in both children's conversation and in early singing skills. Publications include 'Analysing interactions in childhood' (with Hilary Gardner, 2010) and 'Doing Qualitative Research in Psychology' (Sage, 2010)

Bing-Yi Pan (University of Prince Edward Island)
Annabel J. Cohen (University of Prince Edward Island)
Theme 1.3

**Automated AIRS Test Battery: A new methodology and preliminary data**

To standardize the delivery of the AIRS Test Battery of Singing Skills, an automated online system has been developed. It delivers the singing tasks of AIRS Test Battery through a browser with an interactive audiovisual interface, and records the participants’ audiovisual response for each task. An authority module is associated with collected data to control user’s right of retrieval, considering both confidentiality and collaborative sharing. Nearly 100 people across a wide age range (4 to 87 years) have been tested in PEI, and a protocol has been created for analysis of these preliminary data. The entire test will be translated to numerous languages and dialects (some of the translations and transplants are already underway – French, German, Cantonese, Mandarin) and so as to conduct testing worldwide over the Internet. The primary goal of AIRS is to determine the cultural, universal, and individual factors that influence the development of singing. The new automated AIRS Test Battery makes an important stride in this direction. In addition, the system can potentially support other experiments requiring on-line audio or audiovisual recording.

Dr. Bing-Yi Pan received his Ph.D. in physics in 2010 from the Institute of Physics, Chinese Academy of Sciences, Beijing and B.Sc. in physics in 2004 from Shandong University, Jinan. Simultaneously, he received his B.A. in music education in 2008 from Central Conservatory of Music, Beijing. Currently, he holds an AIRS postdoctoral fellowship at UPEI with Dr. Annabel Cohen, is working on the AIRS Test Battery and also contributing to Themes 2.2 and 3.1. He is also interested in formal teaching of singing.

Dr. Annabel J. Cohen is the Director of the AIRS MCRI and also leads the ARS test battery research sub-theme 1.3. She carried out her graduate work in Psychology at Queen’s University and her undergraduate research at McGill University. She is the Editor of Psychomusicology: Music, Mind & Brain and serves as consulting editor on several other journals. She received her ARCT in voice performance from the Royal Conservatory of Music – Toronto, and is a Fellow of the Canadian Psychological Association. She is a member of the Council of the American Psychological Association.

Beatrix Ilari (University of Southern California)

Vivian Agnolo Barbosa (Federal University of Parana and Alecrim Dourado Formacao Musical, Brazil)

Tiago Madalozzo (Federal University of Parana and Alecrim Dourado Formacao Musical, Brazil).

**Musical and non-musical content in children’s favourite tunes**

The purpose of this exploratory study was to examine musical and non-musical contents in children’s favorite song renditions (AIRS Test Battery Component 6). Renditions of favorite songs sung by 23 middle-class Brazilian children aged 5-9, who completed the AIRS test battery, were
assessed. Children’s songs were analyzed in two ways. First, they were examined in light of their musical contents (i.e., singing ranges, melodic accuracy, rhythmic accuracy, and use of expressive features) using 5-point Likert type scales. Second, song lyrics were categorized according to emergent themes. Two independent judges checked 50% of both musical and content analyses. Results suggest that most renditions could be placed between Welch’s (2005) phases 2 and 3 of singing development, with musically trained and older children scoring higher than their peers. In regards to contents, children’s song selections were quite similar to those found in previous studies (e.g., Campbell, 2010; Young, in press). These ranged enormously from traditional children’s songs to pop music, in both Portuguese and English. Interestingly, lyrics were based on typical children’s themes (i.e., animals, routines, acceptable manners), TV and film characters (i.e., Shrek), and ‘adult’ themes like love, sex and sorrow. This last theme was present particularly in songs sung by older children (mainly girls), with younger children singing more traditional children’s songs. Taken together, these results suggest both global and local aspects in children’s sung performances. While there might be similarities in children’s voices and song choices across cultures, local aspects pervade the repertoire that children choose to sing. These repertoires reveal multiple conceptions of children, childhood, and musical childhoods (Young, in press). Implications for music education are discussed.

Beatriz Ilari is assistant professor of music education at the University of Southern California in Los Angeles, CA, and editor of the International Journal of Music Education, the Research Publication of the International Society for Music Education (ISME).

Vivian Agnolo Barbosa is a master's student in music at the Federal University of Parana in Curitiba, Brazil. She is co-director of Alecrim Dourado Formacao Musical School, where she teaches music for children aged 0 to 8.

Tiago Madalozzo, is a lecturer in music education at the Federal University of Parana in Curitiba, Brazil. He co-directs the Alecrim Dourado Formacao Musical School with Vivian Agnolo Barbosa, and teaches music for children aged 0 to 8. He is also the main editor of the forthcoming book “Fazendo musica com criancas” (Making music with children), by UFPR Press.

Félix Neto (University of Porto)

Theme 3.1

Can music change national and racial attitudes?
This study assessed the effectiveness of a musical program at changing national and racial attitudes. The sample consisted of 268 participants who were attending public schools near Lisbon (Cascais and Setúbal), Portugal. Ten intact classes from sixth-grade took part in the study. Eighty five percent had the Portuguese nationality and 15% had a foreign nationality. In the current study we will consider only those participants with the Portuguese nationality, that is, 229 participants. Their mean age was 142.50 months ($SD = 10.20, range = 129-182$). For the purposes of the research national and racial attitudes measures were used. Three national attitudes measures were used:
number of positive trait terms applied to Cape Verdean national group; number of negative trait terms applied to Cape Verdean national group; and overall evaluation of Cape Verdean national group. National attitudes towards the ingroup (Portugal) and another outgroup (Brazil) were also assessed. Two racial attitudes were used: explicit and implicit racial attitudes. Implicit racial attitudes were measured using racial prejudice Implicit Association test (IAT). The program consisted in introducing in the series of songs to be studied and learnt by the pupils during music courses at school a sub-series of Cape Verdean songs together with the regular Portuguese songs. The findings suggest that the cross-cultural musical program has not changed national attitudes toward Portugal (in-group) and Brazil (another out-group). However, in agreement with our hypotheses, participants exposed to the program have improved positive trait terms and affective evaluation attributed to Cape Verdean national group, and reduced negative traits attributed to Cape Verdean national group. Similarly, concerning the racial attitudes the results suggest that the cross-cultural musical program has improved both explicit racial attitudes and implicit racial attitudes. The change seems even higher for implicit racial attitudes than for explicit racial attitudes. The findings are discussed stressing their importance for future research.

Félix Neto earned a Ph. D. in Normal and Abnormal Anthropology from the École des Hautes Études en Sciences Sociales/Paris V (France) in 1980 and a Ph. D. in Social Psychology from the Faculdade de Psicologia e de Ciências da Educação (Universidade do Porto) in 1985. Agregated Professor in Psychology at University of Coimbra in 1990. He is actually a "professor catedrático" of psychology in the Faculdade de Psicologia e de Ciências da Educação at the University of Porto, Portugal (since 1993). He was also the coordinator of the Master on "Cross-Cultural Relations" at Universidade Aberta (1996-2006). He was the director of the Cognition and Emotion from FCT (1994-2002). He was regional representative for Europe from International Association for Cross- Cultural Psychology (1992-1994). He was vice-president of Sociedade Portuguesa de Psicologia (1997-2002). His research interests include social psychology and cross-cultural psychology (especially, migration, mental health, and forgiveness). Author of 18 books and over 200 scientific articles.

Elisabetta Corvo (Canterbury Christ Church University)

Theme 3.3

Exploring the implementation of an English model of health promotion based on singing groups for older adults (Silver Song Clubs) in Italy

Introduction: The aims of the research is to carry out an exploratory study in Italy (Rome) of the value of weekly singing activity for older people, exploring the implementation of a health promotion model based on singing groups for older adults (Silver Song Clubs - SSCs). The beneficial effects of music in terms of well being, increased quality of life and health of older people are supported by several pieces of research; SSCs are music based community interventions shown in the UK to be effective as a model of health promotion.

Method: The research was divided into two main parts. The main objective of Part A was to inquire into the status of the elderly in the city of Rome, and evaluate the role that music has had in their
lives, through semi-structured interviews. Part B was focused on setting up and evaluating singing groups and gathering information from participants on their experiences of singing through standardized and widely-used quality of life questionnaires (at baseline, at the end and 3 months later as a follow up).

Results: Interviews of elderly people showed they are mainly engaged in quite solitary activities, with educational level as a modulating factor. The more educated people are, the more they are interested in the experience of singing. The comparison before and after singing shows a general level of improvement in the two observed singing groups between the baseline questionnaire and the second one, while in the third (follow up) questionnaire, there was an overall decrease but with a number of cases still above the baseline.

Discussion: First analysis shows that the intervention seems to have a good impact on self-perceived health and the quality of life of participants.

Elisabetta Corvo holds a degree in Law (University of Milan – Bicocca), focusing her final dissertation on the sociology of law, and an MSc in Health Promotion and Public Health (CCCU). For the last eight years she’s been focused on her work with an Italian non-profit organization concerned with children and successively with elderly people, particularly those suffering from Alzheimer’s disease. At the moment she is in her third year of MPhil/PhD. Elisabetta’s research theme is to explore the implementation of an English model of health promotion based on singing groups for older adults in Italy.

Dr. June Countryman (University of Prince Edward Island)
Dr. Martha Gabriel (University of Prince Edward Island)
Kate Thompson (University of Prince Edward Island)
Natalie Sullivan (University of Prince Edward Island)
Melissa MacRae (University of Prince Edward Island)

Themes 2.3 & 2.1

Children’s informal musicking
This session focuses on children’s informal musicking. We will share findings from two in-progress research projects, one observing spontaneous musical behaviours of children in three day care centres (ages 2-4), and the other observing instances of spontaneous musicking on school playgrounds (ages 5-12). In both studies the researchers are documenting fragmentary vocal and rhythmic play as well as more sustained instances of musicking. We will use audio and video excerpts to illustrate various categories of this music-making.

Several lines of theoretical inquiry hold analytic promise: 1) multimodal learning/ multiliteracies: we are interested in the idea that musicking is a literacy - a notion that the New Literacy Studies literature does not take up - and we want to chase the educational implications of that idea, aided by cognitive sciences research that confirms the importance of musical (particularly rhythmic) skills in language/literacy attainment; 2) play theories that consider the relationships between play and art (G. Bateson’s notion of ‘aesthetic engagement’) and play and sociocultural learning (Vygotsky) and 3) notions of children’s identity construction.
Martha Gabriel (PhD) is an Associate Professor in the Faculty of Education at UPEI. June Countryman (EdD) is an Assistant Professor in UPEI's Department of Music. Their individual specialties (Martha in literacy education and June in music education) form the starting point for their interdisciplinary research.

Kate Thompson is entering her fourth year of the B. Mus. Program (Clarinet performance) at UPEI. She is also completing a second major in Psychology.

Natalie Sullivan is entering her final year of the B. Mus. Program (vocal performance) at UPEI and is also completing a second major in Psychology.

Melissa MacRae is in the B. Mus. Program at UPEI (Saxophone performance).

Maren Haynes (University of Washington)

Theme 2.1

“People of the Cloud” in the Evergreen State
For the 2011-2012 academic year, I received a fellowship from AIRS to explore sung music performed by Mixtec people indigenous to Oaxaca, Mexico, who have immigrated to the Skagit Valley of Washington State, the majority as undocumented migrant laborers. My paper offers perspectives on Mixtec musical culture through the lens of this year-long field project and incorporates interdisciplinary theoretical approaches from Mixtec history (Ortiz, Stephens), linguistics (Flannery), anthropology (Nicholas), and children’s musical cultures (Campbell, Lum and Marsh). The resultant project offers comprehensive information detailing both musical and extramusical issues impacting the underserved and underrepresented Mixtec-speaking population in Washington State. My research highlights the fluidity with which Mixtec children navigate their binational musical and cultural identities. Through the lens of children’s music, I focused on music production and performance, use of technologies, and multigenerational informal music education in church and home settings. Attention to the church community provides a thorough overview of musical and sacred culture for Mixtecs in the Skagit Valley, illuminating community-based approaches to music acquisition and transmission. Through the lens of interdisciplinary research in singing, my paper attends to the identity and autonomy of the vibrant community historically, religiously and musically while simultaneously revealing unmet needs unique to multigenerational Mixtecs in northwestern Washington which hinder the community’s ability to prosper.

Maren Haynes is a current graduate student in Ethnomusicology at the University of Washington, Seattle. Her research surrounds music and ritual experience with a focus on the varieties of religious music in the United States. She expects to receive her Master's degree and begin doctoral work in 2012.
Daniella Gramani (Federal University of Paraiba)
Caroline Pacheco (Federal University of Paraiba)

Theme 2.1

How singing is learned by Brazilian girls age 5-11 years of age

Different manifestations of popular culture grant many possibilities for one to be involved with Brazilian art forms. In order to understand singing development of children involved in the Maracatu de Baque Virado, we interviewed 4 girls aged 5-11, who were members of different groups situated within the Pina shantytown in Recife. The Nações (nations) de Maracatu de Baque Virado are musical and artistic groups that are normally connected to terreiros de candomble (Afro-Brazilian religion), especially in the city of Recife (circa 1.5 million inhabitants). These cultural manifestations are both dramatic and musical: the dramatic part is presented by the corte (court), and the batuque (musical ensemble) is responsible for the music. The latter is performed through songs (canto das loas) accompanied by percussion instruments. The master leads with the voice, and also directs the batuque. During the time of Carnaval, there is a dispute between the nations, and each year, one of them is the winner. Nações de Maracatu are normally composed by adults, yet some children may also participate as it happened here. All four participating children took part in the corte or batuque, played a percussion instrument called abê, and had a relative who is a member of the group. Interviews took place in the children’s homes, where we also interviewed parents and relatives. Thirteen sung renditions were recorded in both audio and video formats. Data are being analyzed with attention to previous work on music learning in Brazilian popular culture (Prass, 1998; Arroyo, 1998; Queiroz, 2005; Braga, 2005; Náder, 2006; Abib, 2006; Gramani, 2009). A musicological analysis is also being carried out, as a starting point to discuss how singing is learned and how children develop musically in these contexts.

Daniella Gramani, singer, arranger, rabeca (a type of Brazilian fiddle) player and percussionist, is currently a lecturer in popular singing at the Federal University of Paraiba. She holds music degrees from the Faculdade de Artes do Parana (undergraduate and post-graduate), and Federal University of Paraiba (master of music). An active performer and former member of the prestigious groups Mundarêu e Noivas do Allfreddo, she is currently director and singer in the vocal groups "É o que, hómi?!" and "Grameira". She is also an active researcher in the fields of music, culture and education.

Caroline Pacheco holds music degrees from the Escola de Musica e Belas Artes do Parana (undergraduate and post-graduate) and the Federal University of Paraiba (master of music). She is currently a lecturer in music education at the Federal University of Paraiba, where she directs a program of music for children called "Musicalização Infantil da UFPB". Her main interests are in music cognition, music education, child development, and literacy skills in young children.
Angelita Broock (Federal University of Bahia)
Beatriz Ilari (University of Southern California)

Theme 2.1

Children’s songs fieldwork project: Bahian children sing their favourite songs

Children sing in many contexts of their everyday lives. They learn songs and musical games as they interact with teachers, family members and friends, whether in moments of leisure or formal learning (Campbell, 2002). Songs play important roles in many aspects of their lives. But, to this date, little is known about the songs that children choose to sing well as their functions and meanings. Furthermore, how these songs shape early musical preferences remains unknown. This is especially true in the case of Brazil, where research concerning music and children is in its early stages. The present study was conducted in Salvador, Bahia, Brazil with six 4- to 6-year-olds. Although five children participated in the Outreach Project "Musicalização Infantil" of the Federal University of Bahia, they did not know each other. Children were invited to meet with the researcher as in a focus group, and talk about music and sing. Eleven songs were collected: nine traditional folksongs and two pop songs (e.g., Xuxa, Skank). Sung performances included both individual and collective renditions. These musical selections are probably a result of what children learn at home or at school. However, it was also interesting that children chose to sing traditional songs over invented or pop ones. The fact that children were singing in groups and that the researcher was the music teacher of many, possibly influenced their selection. Likewise, it is also possible that this repertoire represents the stereotypical view of music teaching in the early years. As Campbell (2002) suggested, it is generally accepted that teachers, have a very similar repertoire, despite their own particularities. In Brazil, this also happens, with and usually this "common repertoire" contains songs of the folk repertoire. A full musicological analysis of songs, lyrics, contents, singing ranges and meanings attributed to selections will be presented at the meeting. Implications for music education will also be provided.

Angelita Broock is a doctoral student in Music Education at Federal University of Bahia, Brazil. She holds a Master in Music Education from the same University (2009). She created in 2006, and currently coordinates, an Outreach Program at the University for babies and parents. Her research concerns early childhood music education and teacher training. She has worked with AIRS since 2010, contributing to the Brazilian component of the 3.1 project on singing and cross-cultural understanding, led by Dr. Lily Chen-Hafteck.

Beatriz Ilari is assistant professor of music education at the University of Southern California in Los Angeles, CA, and editor of the International Journal of Music Education, the Research Publication of the International Society for Music Education (ISME).
Theme 2.1

Children's songs fieldwork project: The case of "Folia de Reis Estrela do Oriente" in Montes Claros, Minas Gerais, Brazil

Children's universe is highlighted by songs that play reflexive roles and are generative of cultural patterns, expressed socially (Blacking, 1995). Songs sung by children, in turn, have socializing aspects, allowing them to learn new things, negotiate and create modes of belonging. These songs can be derived from children's relationship with a group of experiences in contexts such as the family and the school or through the media. This paper presents the context of "Folia de Reis Estrela do Oriente", a traditional popular Catholic group that is associated with the "festa de Reis" (feasts of the Magi) in the Montes Claros city, Minas Gerais, Brazil. This group is composed by 50-to 60-year-olds, who include children and teenagers in the group, teaching them songs, dances and how to play musical instruments. This is a way to insert younger generation into the dynamics of "Folia de Reis" and to preserve the practice. The present study was conducted during a rehearsal of this group and the data collection was made through video and audio recordings, photographs and interviews with the group leader and participating children. Through observations, it was possible to identify some standards by which the repertoire is transmitted. At the same time, the interviews, as well as the body gestures of some children during the performance, showed an influence of common repertoires to particular musical universe, from genres such as "pagode", "sertanejo" and hip hop. Finally, it was noted that the transmission of songs in the "Folia de Reis Estrela do Oriente" was marked by intergenerational relationships in a group created and controlled by adults (Groppo, 2000), which emphasizes children. It is clear, therefore, that learning music in this context is not simply a transfer of songs, but also a negotiation with the musical universe peculiar to children participating in the group.

Angelita Broock is a doctoral student in Music Education at Federal University of Bahia, Brazil. She holds a Master in Music Education from the same University (2009). She created in 2006, and currently coordinates, an Outreach Program at the University for babies and parents. Her research concerns early childhood music education and teacher training. She has worked with AIRS since 2010, contributing to the Brazilian component of the 3.1 project on singing and cross-cultural understanding, led by Dr. Lily Chen-Hafteck.

Tiago Carvalho is a doctoral Student in Ethnomusicology at Federal University of Bahia, Brazil. He holds the Master degree in Ethnomusicology from the same institution and an Undergraduate in Artes/Música at State University of Montes Claros. His research interests are urban music, popular music, and music and youth culture.
June Countryman (University of Prince Edward Island)
Natalie Sullivan (University of Prince Edward Island)

Themes 2.3, 2.1 & 2.2

**Formal musicking in a children’s choir: A case study**

This in-progress case study of a children’s choir seeks to uncover pedagogical moves that account for the great sound in this particular choir of children (N=21), ages 8 -13. We will share our initial observations about those pedagogical practices that are effective with children, as determined by the resulting choral sound, the children’s reactions, the comments by individual children and the opinions of the director. We will illustrate aspects of the conductor’s pedagogy through rehearsal video clips.

We also analyze the singers’ experience of being a part of the choir, in terms of self-efficacy, skill development, aesthetic experience, belonging and communal identity. These insights are gleaned from semi-structured interviews with pairs of singers. We also examine several parents’ opinions of their child’s experience with the choir.

June Countryman (Ed.D) is an Assistant Professor in UPEI's Music Department, where she teaches courses in Aural Skills, music education and Global musics.

Natalie Sullivan is a research assistant at UPEI with Dr. June Countryman and Dr. Martha Gabriel. She is entering her final year of the B. Mus. degree (Vocal performance) at UPEI, and is also completing a second major in Psychology.

(John) Christopher Roberts (University of Washington)

Themes 2.1 & 2.3 (Short oral)

**Children's Song: Contemporary vs. Historical Versions**

In 2011, I presented my AIRS-sponsored research, which identified and described five different websites that held historical field recordings of children singing from a variety of cultures, transcribed 34 songs, and provided a classification system for the musical material. This follow-up study focused on three recordings from one website (Alan Lomax’s Association for Cultural Equity), tracing the ways in which the three songs have been used by adults interested in bringing music to children. The field recordings of children were compared with similar field recordings made of adults, as well as modern versions, both commercial recordings available for purchase and the “series textbooks” that are commonly used in K-5 music classrooms in the United States and Canada. Similarities and differences regarding instrumentation, performance style, and melodic and rhythmic nuance were noted. In addition, the opinions of children in one fifth grade class were
solicited, in order to gain a perspective on the affective responses of contemporary youth to the sets of recordings.

Findings included the following: (1) The children on the historical recordings were more likely to switch between singing and speaking within the same song, while adults tended to remain in either a spoken or sung modality; (2) The children on the field recordings incorporated more rhythmic syncopation than adults of the same time period; (3) Instrumentation on the contemporary recordings utilized technological options (e.g. computerized musical sound effects), critically altering the sonic experience of the songs; (4) Recordings intended for use in schools simplified the rhythmic complexities found on field recordings; and (5) The vocal quality of the child performers in the series textbooks maintained a purity of tone quality that was not found on the earlier recordings. The modern-day children had a variety of opinions concerning the recordings, with some young students preferring the historical recordings, while others favored the contemporary versions.

In this presentation, sample recordings will be played in order to highlight the similarities and differences between the song versions and the contemporary children’s comments on the recordings will be provided.

Christopher Roberts is a doctoral candidate at the University of Washington, with an interest in world music pedagogy, children’s musical cultures, and the development of children’s musical skills and interests. An elementary music educator for 15 years, he has taught undergraduate and graduate students at the University of Washington, Seattle Pacific University, Seattle University, and the University of Idaho. His publications have been included in the forthcoming Oxford Handbook on Children’s Musical Cultures, Alternative Approaches to Music Education (3rd ed.) (2011) and Multicultural Perspectives in Music Education (2011). Roberts serves as the Northwest Representative for the Council for General Music.

Lily Chen-Hafteck (Kean University)

Theme 3.1

The international project on cultural understanding: An overview

Since February 2012, some children from Brazil, Canada, China and Kenya have participated in the AIRS International Project on Cultural Understanding over a span of 12 weeks. They have learned six traditional songs from each country, a total of 24 songs, together with background information about the songs and cultures. The teaching materials included a songbook and PowerPoint slides that provide the songs and information on their cultural backgrounds in English, Chinese and Portuguese, and demonstration video and audio-recordings that were developed during more than one year by a team of AIRS researchers.

Two schools in each country and two classes of children from each school, ages 10 and 11, participated. One class learned both the cultural information and songs while the other class only learned the cultural information. Children responded to a questionnaire before and after the study to
assess their attitude towards the people from the four countries. A questionnaire on the opinion on the songs of each country was also administered after the unit on each country. Interviews were conducted with both teachers and children at the end of the research. Reports from teachers and researchers were also collected. Currently, the team is working on data analyses.

Lily Chen-Hafteck holds a doctorate in music education from University of Reading, U.K. She is currently Associate Professor at Kean University, USA and has held teaching and research positions at the University of Pretoria, South Africa, University of Surrey Roehampton, U.K. and Hong Kong Baptist University, Hong Kong. She has published numerous journal articles and book chapters on the topics of music and language in early childhood, children’s singing and multicultural music education.

She has served on the editorial board of the International Journal of Music Education, Asia-Pacific Journal for Arts Education and Music Education Research International, and has held positions of the International Society for Music Education as member of its Board of Directors, chair of its Young Professionals Focus Group and Early Childhood Commission. She frequently presents papers and workshops internationally. In 2008, she was the keynote speaker at the International Conference on Children’s Arts Education, held in Nanjing, China. She is the founder and director of the Educating the Creative Mind project that advocates arts-based education for children.

Sandra Cornaz (Université Stendhal- GIPSA-Lab)
Lionel Granjon
Nathalie Henrich (CR1-CNRS)
Sonia Kandel,
Christophe Savariaux
Nathalie Vallée (CR1-CNRS)

Theme 2.3

The Verbo-tonal Method and the use of music to enhance French phonetics

Introduction: Applied linguistic of foreign languages uses various methods to enhance the ability to perceive new phonemes. In Europe, the verbo-tonal method is commonly used. In order to improve the perception skills, the VTM suggests to underline acoustical characteristics of the second language sound which aren't perceived by the non native learner, but which are significant in the target one. To improve segmental correction, the VTM offers many tools. In this experiment, we tested the impact of two of them on auditory abilities. Firstly, the use of a facilitating sound context (i.e. a sound combination process). Then, the use of the frequency modification (i.e. the tone of the sound is inflected). The experiment was conducted in Italy in order to learn more about the verbo-tonal efficiency in the discrimination of the French phoneme /y/, which lacks in Italian. Three main hypotheses were tested. The first hypothesis assumed that /y/ is well differentiated from /i/ but not from /u/ because Italian native speakers perceived /y/ too low. The perceptual distance would be bigger between /y/ and /iu/. Both the following assumptions result from this prediction. The second hypothesis assumed that there is a positive impact of a high class consonant on the front rounded vowel discrimination. The third hypothesis supposed that there is a positive correlation between
high tones and unknown vowel /y/ perception.

**Method:** 35 participants were involved. Most of them studied Language and Literature at the University of Padova, and they had different academic qualifications. They didn’t have any musical aptitude. 23 participants had never been in contact with French and 12 were at a beginner or intermediate level. They completed a music and speech perception test in which they had to perform a two alternative forced choice paradigm task. They had to listen to six realizations of the referent phoneme (/i/ or /u/) used in both French and Italian vocalic system. Each of them was included in a syllable CV-type, the consonant being either /t/ or /p/. Subsequently, they heard a list of 324 items to compare, including the referent phoneme, the unknown phoneme /y/ and a common phoneme in both languages. In this task, /a/ was used as a distractor. Each item could have been produced on three tones: A2, C3, E3.

**Results:** As results of this experiment, we ascertained that non native vowel discrimination ability is linked to (1) contrast, (2) co-articulation, (3) and tone. Sometimes the correlation works only when some of these conditions are correlated or, even the opposite, when the conditions aren't correlated. Globally, the experimentation leads us to the conclusion that the first and the second assumptions received support, pointed out that comparing /y/ to the contrast /i/ may have a positive effect on the discrimination ability of the non native vowel among Italian learners of French. We observe the same positive effect when /y/ is co-articulated with /t/. At the end, we noticed that a correlation between music and discrimination ability exists, but a highest vowel doesn't help to improve the discrimination of /y/. Music may be used to reinforce a perceptual distance between two sound-types already recognized as different by the learners.

_Sandra Cornaz_ is a third year bi-national (France-Italy) Ph. D. candidate with Gipsa-Lab in Grenoble and LFSAG in Turin. Her research study deals with phonetics, Singing-Voice and Acquisition of French as a Second Language. This argument is being developed jointly with _Nathalie Vallée_ (CR1-CNRS), _Nathalie Henrich_ (CR1-CNRS) and _Antonio Romano_ (CR). She is responsible for courses in infant language development, phonetics and general linguistics in the Sciences of Languages Department at the University of Grenoble, Campus 3 (France). She is also a teacher of French as a Second/Foreign Language since 2003 and has worked in Botswana, China, Germany, Italy and France in differing working contexts; she was responsible for the teaching of phonetics for both learners and teachers. To that end, she used French songs and the singing-voice to enhance perception and production. More information is available on http://www.gipsa-lab.i (1/2 p)pg.fr/~sandra.cornaz/.

_Henrietta Lempert_ (University of Toronto)
_Assunta Ferrante_ (University of Toronto)
_Ju Hee Lim_ (University of Toronto)
_Rachel Williams_ (University of Toronto)
_Natalie Kwok_ (University of Toronto)

Theme 2.3

**Can singing aid language acquisition in post-puberty learners?**
**Introduction:** Children seem to absorb new languages with ease, whereas learning a foreign language is a major struggle for most adults. However, although adults perform at chance level when required to extract novel words from a continuous stream of spoken syllables, they evidence learning when exposed to sung syllables. But can singing facilitate language-learning in adults beyond aiding their perception of statistical regularities in the speech stream? If so, which aspects of language does it aid and how?

**Method:** We examine these issues with a novel language comprised of 14 words divided into three classes. The language comes in two versions, a suffix dialect (*hifto wadim vabie*) and a prefix dialect (*ohift wadim ievab*). In one learning condition, the study sentences are sung and in the other condition, spoken. Participants (Introductory Psychology students) repeat 24 study sentences according to condition and are tested for rule learning with 32 spoken sentences (16 legal sentences that did not occur during study trials and 16 illegal instances that violate one of the rules).

**Results:** Currently available results for first language English females (*n* = 33) indicate a comparable number of false negative responses in the speaking and singing conditions (false negative = incorrectly rejecting a legal sentence). In the prefix dialect, correct rejection of illicit sentences did not differ on Trial 1 in the singing and speaking conditions (*Ms* = 8.9 and 8.4) but on Trial 3, performance was reliably superior in the singing than speaking condition (*Ms* = 11.0 and 8.9). In the suffix dialect, speaking was more likely than speaking to elicit correct rejections on Trial 1 (*Ms* = 9.1 and 7.4) but by Trial 3, performance in the two conditions did not differ (*Ms* = 9.2 and 9.1). The results suggest that perception of linguistic features differs in sung and spoken sentences and that the complementary use of both approaches is important for second language acquisition in adult learners.

**Henrietta Lempert** received an honours B.A. degree in psychology and a Master's in clinical psychology from McGill University, followed by a Ph.D. in clinical psychology from Queen's University and fellowship in neuropsychology with Dr. Marcel Kinsbourne. She currently directs the Language and Cognition Lab in the Psychology Department at University of Toronto where she teaches a course in the Research Opportunity Program. She has published extensively in first language acquisition and currently is focusing on putative age constraints on second language grammars.

**Assunta Ferrante,** a linguistics major at U of T, completed her B.Sc. studies in 2012 and will enter Speech and Language Pathology.

**Ju Hee Lim** is entering her 4th year at U of T as a neuroscience and psychology specialist with extensive vocal and piano training in her native South Korea.

**Rachel Williams** completed B.Sc.in Health Sciences at U of T this summer and is planning a career in medicine.

**Natalie Kwok,** a neuroscience specialist at U of T, had a Royal Conservatory of Music Certificate for Grade 8 Piano First Class Honours.
Benjamin Bolden (Queen’s University)
Larry O’Farrell (Queen’s University)

Themes 2 & 3.1

The impact of a culture-bearer on the intercultural understanding

Introduction: Global music experts such as Campbell (2004) suggest a ‘culture-bearer’ may be helpful in negotiating the challenges associated with learning and engaging with music from unfamiliar musical cultures and traditions. Burton (2002) describes a culture-bearer as “one raised within the culture who is a recognized practitioner of the culture’s music” (p. 178). The culture-bearer approach makes sense, but also raises concerns (Vaugeois, 2009). Will the culture-bearer be able to effectively communicate with the musicians, and enable them to gain meaningful understanding of the music? Is it possible for one person, in a protracted period of time, to reasonably provide adequate knowledge of an entire musical tradition, let alone adequate knowledge of the entire culture in which the musical tradition developed? An Ontario adult community choir was recently visited by a guest conductor who taught and conducted music from the African American Gospel tradition. This qualitative case study serves to examine the impact on choir members of working with a culture-bearer (the guest conductor) on repertoire from a particular musical tradition. Of primary interest is any inter-cultural understanding that choir members develop through their music making and learning in this context. The research is guided by the following questions:

1. How does working with an expert from a particular musical tradition impact choir members’ understandings of...
   a) that particular musical tradition
   b) that particular culture in general

2. How were such understandings communicated to the singers?

Method: Qualitative data will be collected through a focus group discussion and interviews with the choristers, and interviews with the guest conductor and regular conductor. Data analysis will involve open coding followed by axial coding of emergent themes (Strauss & Corbin 1990).

Results: We have just begun data collection. Preliminary results will be reported at the AIRS conference in August.

Dr. Benjamin Bolden, music educator and composer, is an assistant professor of music education at Queen’s University in Kingston, Ontario, Canada. His research interests include the teaching and learning of composing, community music making and learning, Web 2.0 technologies as educational tools, and arts-informed research methodologies. Ben holds a Ph. D. in music education from the University of Toronto, a MMus in composition from the University of British Columbia, a BEd from OISE/UT, and a BMus from Carleton University. As a teacher, Ben has worked with preschool, elementary, secondary, and university students in Canada, England, and Taiwan. In addition, Ben is an associate composer of the Canadian Music Centre. His works have been performed by a broad variety of professional and amateur performing ensembles. Ben is also editor of the Canadian Music Educator, official journal of the Canadian Music Educators’ Association/L’Association canadienne des musiciens éducateurs. benbolden.ca
Larry O' Farrell is Professor and holder of the UNESCO Chair in Arts and Learning, Faculty of Education, Queen's University, Canada. Larry served two terms as President of the International Drama/Theatre and Education Association (IDEA). He is currently Chair, Board of Directors, Canadian Network for Arts and Learning and a member of the advisory board of the World Alliance for Arts Education (WAAE). As a member of the international advisory committee and General Rapporteur for the 2nd UNESCO World Conference on Arts Education (Seoul, Korea, 2010) he was instrumental in preparing The Seoul Agenda: Goals for the Development of Arts Education. His research includes participation in international studies on creativity in drama/theatre and arts education, singing, and monitoring the Seoul Agenda. Larry is Honorary Professor at the Hong Kong Institute of Education. In 2011 he received the Campton Bell Lifetime Achievement Award presented by the American Alliance for Theatre and Education.

Rena Sharon (University of British Columbia)
Eric Vatikiotis-Bateson (University of British Columbia)
Gayle Shay (Vanderbilt University)
Laurel Fais (University of British Columbia)

Theme 3.1

Sustainable new practices for an endangered species of Song
A massive trove of global Song is at risk of extinction as a performative modality. Art Song – the fusion of poetry and music – is a genre comprising over 100,000 songs, with contributions by upwards of 10,000 poets in over 100 languages in musical settings by 12,000+ composers. Much of the vast international repertoire is completely unknown. Though it is in continual growth as a compositional medium, its performance is increasingly confined to a shrinking “boutique” listener contingent who are comfortable in the relatively austere practices of the recital modality. In the emergent century of Opera, the Art Song genre may become relegated to an archival digital existence, disappearing from live performance venues within the coming decades. It would be a forfeiture of a collection that offers a tremendous delivery system for millennia of global poetry within a fascinating hybrid communication mode. This project studies the causes of audience attrition and the systemic cascade of consequences to the education and performance options for its artists. The Vancouver International Song Institute is a leading international nexus of innovation whose mandate addresses the erosion of Art Song receptivity with new strategies for training and accessible multi-media performance. A series of research studies from its experimental performance laboratories gather empirical data relating to cognitive shifts for performers and audiences when new elements are introduced to the traditional practices of the art form. The presentation includes video capture of comparative performance modalities, with measurement of changes in vocal production (e.g. vibrato, pitch, breathing) and artistic decision-making (e.g. note lengths, diction, dynamics). The discussion focuses on the impact to performance expressivity and audience cognition in performance options with diverse gestural and spatial parameters, as well as the philosophical implications of deviating from traditional recital formats.
**Rena Sharon** is Professor of Collaborative Piano Studies at the University of British Columbia. Born in Montreal, her undergraduate and graduate training were at Indiana University. An internationally-renowned chamber musician, she is also the Artistic Director of the Vancouver International Song Institute (www.songinstitute.ca.). In the 6 years since its inception, VISI has acquired a reputation as the leading edge of innovation and groundbreaking approaches to study, interpretation, and performance practice for scholars and artists in the realm of Art Song. Among VISI’s diverse paths of training and research, the establishment of SONGFIRE Theatre is the world’s first professional and apprentice program in Art Song Theatre - a multi-media genre developed by Sharon at UBC since 1995 that is defining a wide new field of usage for the global archive of Art Song. Sharon’s interdisciplinary spectrum of interests led to her appointment as a 2011 Distinguished Scholar in Residence at the Peter Wall Institute for Advanced Studies. Her research on the cognition of Art Song by its performers and audience is in collaboration with Drs. Eric Vatikiotis-Bateson, Laurel Fais and their research team; the realization of works for SONGFIRE Theatre are in collaboration with Dr. Gayle Shay and many directors, writers, and performers.

**Eric Vatikiotis-Bateson** was born in Washington, D.C. in 1952. He received a Bachelor's degree in philosophy and physics from St. John's College, Maryland, in 1974, a certificate in ethnographic film making in 1976, and an M.A. in Linguistics from Indiana University in 1978. From 1982-1987 he was an NIH pre-doctoral fellow at Haskins Laboratories (Connecticut) investigating "the organization and control of speech production". After receiving a Ph. D. in Linguistics from Indiana University in 1987 he was appointed Staff Scientist at Haskins Labs (New Haven, CT). From 1990-2003 he was at Advanced Telecommunications Research (ATR) International in Japan. During this time, he and his collaborators examined the production and perception of multimodal communication in complex environments, especially spoken language processing. From 2000-2003, he headed the Communication Dynamics Project (Department 2 of the ATR Human Information Science Lab). In 2003, Vatikiotis-Bateson accepted a Canada Research Chair in Linguistics and Cognitive Science and became the first Director of the Cognitive Systems Program at the University of British Columbia in Vancouver, Canada. Since coming to Canada, his research has increasingly focused on spatial and temporal coordination within and between individuals during communicative performance of music and language. http://www.linguistics.ubc.ca/people/evb

**Gayle Shay**, (DMA, University of Colorado) mezzo soprano, has performed throughout the United States and Canada in musical theater, opera and oratorio including productions with the Washington (DC) Opera, the Maryland Handel Festival, the Des Moines Metro Opera Guild, OpenStage Theater (Fort Collins, CO), Colorado Lyric Theater and Nautilus New Music Theatre Company (Minneapolis). Her professional stage direction and production credits include those with Wolf Trap Opera, Maryland Opera Studio, Opera/Omaha, Des Moines Drama Workshop, Dorian Opera Theatre, Colorado Children’s Opera Theatre, New England Light Opera, and Nashville Opera. She has worked with composers John Harbison and Jake Heggie. Dr. Shaye is an Associate Professor of Voice at Vanderbilt University where she also serves as the Director of the Vanderbilt Opera Theatre. She has been a Co-Director of SONGFIRE Theatre since its inception in 2010.

**Laurel Fais** (Ph.D., Linguistics, Indiana University) is currently with the departments of Psychology and Cognitive Science at the University of British Columbia. She has conducted research on the effects of social interaction on infant language acquisition and on the optical flow
Lisa Crawford (University of Southern California)
Lily Chen Hafteck (Kean University)

Theme 3.1

Children's Voices on Singing in an Elementary Choral Music Program: A Two-Year Survey

Introduction: Singing is an important means of human communication (Welch, 2005), accessible to most human beings, and has been prevalent in music education. Through singing, students are able to develop self-expression and may be in closer touch with their feelings. Attitudes of children toward singing and choral participation have been studied by some researchers (Mizener, 1993; Rao, 1993) as well as topics concerning well-being through music education (Gick, 2010; Boyce-Tillman, 2000). The purpose of this study was to examine feelings children have about singing in their choral music program.

Method: In a school district in a large urban center of California, data were obtained via a non-gender-related survey questionnaire (N=749) from elementary students over a two-year period. Through open-ended questions, students were invited to express how they felt about singing in their spring concert and what they liked most about music activities. Additional fill-in-the-blank questions asked students about their music experience.

Results: Results of the two open-ended questions revealed the highest percentage of elementary students focused on their feelings of happiness about singing as a group and sadness when family were unable to attend the concert across all grade levels. In this survey, one fourth grade student communicated her feelings this way: "I felt like I was being lifted into the musical world of heaven and all the angels cheered as I rised. Then when I rose back up on the riser, I fell back into earth but I felt happier than I was when I went." 80% of students did not receive formal music training outside of the public school classroom and did not report participation in other formal or informal musical experiences.

Discussion: While these findings contradict some previous findings, this may be a result of socioeconomic concerns or methodological limitations of the survey instrument. An analysis of the survey and implications for music education will be presented.

Lisa A. Crawford is completing a DMA, Music Education under the direction of Dr. Beatriz Ilari at the University of Southern California, Thornton School of Music. She holds a Master of Music, Music Education, Master of Education, Curriculum & Instruction, and Bachelor of Music, Composition. Her research interests include issues related to teacher education, evaluation of music teaching, singing and well-being, and music composition.

Lily Chen-Hafteck holds a doctorate in music education from University of Reading, U.K. She is
currently Associate Professor at Kean University, USA and has held teaching and research positions at the University of Pretoria, South Africa, University of Surrey Roehampton, U.K. and Hong Kong Baptist University, Hong Kong. She has published numerous journal articles and book chapters on the topics of music and language in early childhood, children’s singing and multicultural music education.

She has served on the editorial board of the International Journal of Music Education, Asia-Pacific Journal for Arts Education and Music Education Research International, and has held positions of the International Society for Music Education as member of its Board of Directors, chair of its Young Professionals Focus Group and Early Childhood Commission. She frequently presents papers and workshops internationally. In 2008, she was the keynote speaker at the International Conference on Children’s Arts Education, held in Nanjing, China. She is the founder and director of the Educating the Creative Mind project that advocates arts-based education for children.

Jennifer Hutchison (Western University)
Carol Beynon (Western University)
Rachel Heydon (Western University)
Susan O’Neill (Simon Fraser University)

Theme 3.2

I ain’t no damn singer! Exploring the musical perceptions of older adults involved in an intergenerational singing program

The nature of this study is aimed at identifying and exploring the learning outcomes of an intergenerational, multimodal curriculum that focuses on interactive singing. The program involved 20 residents from a retirement home and a Grade 2 class of 18 students from the local public school. The sessions explored songs across various themes that acted as links in fostering dialogue, musical discourse and shared learnings among the participants. After the program ended, interviews with children, residents, teachers, the school principal and retirement home staff were conducted through which participants were encouraged to share their experiences of the program as well as their personal musical experience and background. While extensive research details the mental and physical health benefits of intergenerational musicking, observational and narrative data from this study revealed a prevalent theme pertaining to seniors’ perception of lack of confidence and musical inadequacy.

Jennifer Hutchison is currently pursuing her Ph.D. in music education at Western University where she also holds a Master of Music. She has been a vocal and instrumental secondary school music teacher with the District School Board of Niagara for the past 10 years. Jennifer’s research focuses on musical engagement across generations using alternative forms of music education programs. This interest has led to her involvement as a research assistant in the Musical Futures Canada program and in the AIRS 3.2 intergenerational singing program. In addition to her studies, Jennifer currently acts as the chair for the SOGS Academic Committee. She is the teacher coordinator for Brio, a London-based project promoting music and social outreach, the 2012-2013
conductor of the UWO choir, and the conducting assistant for the Treble Training Choir for the Amabile Boys and Men’s Choirs of London, Canada. At the University of Western Ontario, Jennifer was honoured with the Don Wright Scholarship for Vocal Music, the Wesanne McKellar Award for Instrumental Conducting, the George Proctor Memorial Award for an outstanding literary contribution to musical scholarship in Canadian music, the Kenneth Bray National Undergraduate Essay Competition and the University Gold Medal for Music Education.

Dr. Carol Beynon is Associate Vice Provost of the School of Graduate & Postdoctoral Studies, former Acting Dean of the Faculty of Education, and Associate Professor in Music Education at the University of Western Ontario. She is the founding co-artistic director of the renowned and award-winning Amabile Boys and Men's Choirs of London, Canada. She was an elementary and secondary school teacher for several years in London prior to becoming a faculty member at the University of Western Ontario. Carol’s research focuses on teacher development, teacher identity, and gender issues in music education; she is author of the book Learning to Teach (2001) and co-editor of Critical Perspectives in Canadian Music Education (2012) with Kari Veblen. She also has numerous scholarly articles in several peer reviewed journals. She has received several awards for outstanding teaching from the University Student Council and in 2007 was named the Woman of Excellence in Arts, Culture and Heritage in London, Ontario and community. In the fall of 2010, Carol was inducted into the Wall of Fame at the Don Wright Faculty of Music at the University of Western Ontario.

Rachel Heydon, Associate Professor, Faculty of Education, Western University, Canada, studies curricula related to early childhood education, multimodal literacy (with a focus on the arts), and intergenerational learning. She is part of a team that is designing, implementing, and studying intergenerational curricula that focuses on wellbeing through engagement with singing and other multimodal literacies. She is the author of the forthcoming book, Learning at the Ends of Life: Children, Elders, Literacies, and Intergenerational Curricula (UTP).

Susan O’Neill is an Associate Professor in Arts Education in the Faculty of Education at Simon Fraser University in Canada. She is Director of Multimedia Opportunities and Diversity in Artistic Learning Research (MODALresearch.com), Research for Youth, Music and Education (RYMEyouth.com) and the Arts Matter Learning Projects. She has been awarded visiting fellowships at the University of Michigan, USA (2001-03) and the University of Melbourne, Australia (2012). She is Research Commissioner for the International Society for Music Education (ISME) and Senior Editor of the Canadian Music Educators’ Association (CMEA) Biennial Book Series, Research to Practice. She has published widely in the fields of music psychology, youth development, and arts education.

Jean Emmerson (University of Saskatchewan)
Dr. Jennifer Nicol (University of Saskatchewan)

Theme 3.3
Sing me to sleep: Aboriginal resilience and music
There have been calls from both Aboriginal (Lafrance, Bodor, & Bastien, 2008) and non-Aboriginal communities (Kelly, 2011) for greater support for parents experiencing vulnerability due to economic and social circumstances by “establishing programs that educate families on how to reconnect with one another and how to love one another again” (Lafrance et al., 2008, p. 314). Most parenting programs are not well-attended by families who are disadvantaged and marginalized (Nicholson et al., 2008). However, parent-child music programs have been found to be better attended, encourage positive interactions, develop children’s skills, and promote inter-family relationships with people in these circumstances (Ledger, 2011; Nicholson, Berthelsen, Abad, Williams, & Bradley, 2008).

There is limited research on parent-child music programs with Aboriginal mothers (Williams & Abad, 2005). Parent-child music programs have been found to improve the quality of relationships and attachment between caregivers and children (e.g., Cunningham, 2011) and promote self-regulation (Creighton, 2011; Dissanayake, 2000; Longhi, 2009; Mackenzie & Hamlett, 2005; Nakata & Trehub, 2004; Papousek, 1996; Trainor, 1996), which is a precursor to resilience (Masten, Cutuli, Herbers, & Reed, 2009). Parent-child music programs have also been found to enhance language, cognitive, and social skills (e.g., Edwards, 2011).

I am working with a local parent-child music educator to develop and implement a music program in an alternative high school. I am also seeking guidance from a Cree elder since there will likely be Aboriginal research participants; many young Saskatoon mothers are of Aboriginal heritage. In preparing for this study I have researched Aboriginal history, ethics, and issues, and AIRS presents an opportunity to share this work with others. Singing and physical contact with infants are primary in Aboriginal childrearing traditions (Whidden, 2007).

This presentation explores how singing can support Aboriginal resilience and references ethical research with Aboriginal peoples.

Jean Emmerson is a Ph.D. candidate at the University of Saskatchewan, Department of Educational Psychology and Special Education. Her supervisor is Dr. Jennifer Nicol, AIRS Research Team Leader, Singing and Health. She has taught elementary, secondary, college and university students in Toronto, Vancouver, and Saskatoon over the past 20 years. She has also sung in choirs, performed in musicals, and played in a variety of bands. She has degrees in Music (BFA, York University), Education (BEd, University of Toronto), and Counselling Psychology (MA, Adler School of Professional Psychology, Chicago).

Dr. Jennifer J. Nicol (PhD, MA, BMT, BMus) is an Associate Professor at the University of Saskatchewan, Canada. She is also an Accredited Music Therapist and Registered Doctoral Psychologist. Her research focuses on the benefits of music, especially therapeutic benefits easily accessed and available for use in everyday life. Dr. Nicol is a co-investigator and team leader (Singing and Health) in the AIRS project. She can be reached at 306-966-5261 or by email at jennifer.nicol@usask.ca.

Merrill Tanner (University of Alberta/ Glenrose Rehabilitation Hospital)
Vocal Strengthening Group Treatment

Introduction: A successful group vocalization program for people with Parkinson’s disease was studied and the method is now being utilized in the community and at the Glenrose Rehabilitation Hospital for a variety of diagnoses. Presentation of the research results of the Ph.D. project will be followed by a group voice lesson with audience participation.

Method: A group vocalization program for people with idiopathic Parkinson’s disease (IPD) consisting of vocal exercises and choral singing was studied using a single group pretest-posttest research design. A total of 28 people with IPD participated in the study. The intervention program was twice a week for six weeks. The program included vocal warm-up, vocal exercises, singing exercises, choral speech, and choral singing with piano accompaniment. No individual treatment was offered, only group sessions.

Results: Rigorous statistical analysis was used to correct for the 13 variables measured in this exploratory study. Statistically significant improvement (p< .001) was found in two of the eleven measures of “vocal ability” (average frequency during an oral reading task and maximum intensity range) and on the Speech Intelligibility Inventory: Self Assessment Form (p< .001 and effect size of .93), one of the two self-assessment questionnaire measures of “vocal quality of life”. Clinically relevant results were found for both “vocal quality of life” questionnaires and on three (maximum intensity range, maximum frequency range, and fundamental frequency variation during oral reading) measures of vocal ability.

Discussion: These results indicate that participants with a progressive neurological disease experienced some improvement in their vocal skills and improved vocal quality of life following participation in a short-term group voice program. Group interventions similar to this study are now offered in the Edmonton community and at the Glenrose Rehabilitation Hospital. The Glenrose offers a “vocal strengthening group” for people with voice problems due to Parkinson’s disease, stroke, brain injury, deconditioning, and other diseases.

Merrill Tanner is a registered speech language pathologist (SLP) and a singer (Bachelor and Master of Music in Voice Performance). She works part time as an SLP at the Glenrose Hospital with stroke and voice outpatients, teaches singing privately, performs in a duo with classical guitarist Ernst Birss and leads a singing group for people with Parkinson’s disease in the community. Merrill has just completed a Ph.D. to showing the value of “singing voice therapy” for people with Parkinson’s disease.

Frank Russo (Ryerson University)
Steven Livingstone (Ryerson University)

Themes 1.2 and 3.3

A novel singing therapy to improve communication of facial and vocal emotion
Humans communicate by eye and by ear - via facial expressions, body postures and tone of voice. In Parkinson’s disease (PD) however this capacity is often blunted; patients exhibit deficits in the
ability to produce and to respond to emotional facial expressions, emotional tone of voice and expressive movements. These deficits have been labeled the “masked face” syndrome of Parkinsonism, and have deleterious effects on patients’ ability to engage in interpersonal communication. In this talk, we describe a forthcoming pilot study that uses facial and vocal mimicry to retrain deficits in facial motor function and vocal expressiveness. By retraining expressive functionality, we aim to improve the smoothness of social interactions, quality of life and emotional wellbeing of PD patients.

At a behavioral level, when neurotypical individuals are exposed to emotional facial expressions, even unconsciously, they spontaneously react with brief distinct facial movements. These spontaneous movements are regarded as a form of automatic mimicry, and have been shown to improve observers’ accuracy of emotional identification, to decrease emotional response time and to increase feelings of emotional empathy. In our lab, we have successfully used an emotional singing paradigm to reliably elicit spontaneous mimicry in neurotypical observers. The pilot study, funded by Parkinson’s Canada, represents a unique bridging across Themes 1.2 and 3.3. An imitative facial mimicry task will form the basis of the 13-week singing therapy. Twenty-four PD patients will be recruited and assigned to an experimental or control condition. In the experimental condition, patients’ facial motion and vocal output will be recorded while actively imitating audio-visual recordings of emotional singing. In the control condition, patients will be asked to observe the same recordings without any associated production task. Motion capture and acoustic analyses will be used to assess changes in facial motor expressive range and vocal capability. Pre- and post-assessments of facial and vocal recognition of emotion will be assessed using a standardized assessment battery for non-verbal emotion recognition that has been developed as part of research in Theme 1.2.

Frank Russo is Associate Professor of Psychology at Ryerson University and Adjunct Scientist at the Toronto Rehabilitation Institute. He is a member of the AIRS steering committee and is active across all three themes of the project. He is currently serving on the board of directors of the Canadian Acoustical Association and the Society for Music Perception and Cognition. He also serves on the editorial boards of Music Perception, Psychomusicology, and Music Therapy. After earning his Ph.D. from Queen's University at Kingston, Frank completed Post-Doctoral Fellowships in Music Cognition and Cognitive Audiology. He founded the SMART (Science of Music, Auditory Research and Technology) lab at Ryerson in 2006. Projects in the lab tend to be highly multidisciplinary, often incorporating behavioral, computational and electrophysiological methods. Recent projects have focused on sensorimotor interactions and multisensory integration involved in singing and speech.

With a Ph. D. in Computer Science and Bachelors in Physics and Information Technology, Steven Livingston brings an interdisciplinary skill set to singing research. Since completing his Ph. D. in 2008, he has undertaken a program of research dedicated to understanding the role of facial expressions in singing performance. In 2009, he provided the first time-course analysis of facial expressions in emotional singing. The study, which was done in collaboration with Bill Thompson and Frank Russo, revealed that performers’ facial expressions differentiated their emotional intentions. This research was continued under the supervision of Caroline Palmer and Marcelo Wanderley at McGill University, where he acquired extensive analytical techniques for the study of motion and auditory data. Steven has been an AIRS postdoctoral fellow since 2011, working with Frank Russo at Ryerson University on the development of facial mimicry in emotional singing.
Amy Clements-Cortes (Baycrest Centre, Toronto, Ontario)

Theme 3.3 (Short Oral)

Buddy's Glee Club: Singing for Health and Wellness

Introduction: The purpose of this study was to examine the benefits of participating in a choir facilitated by a music therapist on the health, wellness and successful aging of older adults. This study focused on older adults who were cognitively intact and/or diagnosed with dementia.

Questions: What if any are the benefits of the lived experience of singing in a glee club facilitated by a music therapist and music therapy accompanist as expressed by older adults attending day care programs? How can a glee club program best be implemented with older adults attending adult day care programs? What is the impact of singing on the physical and emotional dimensions of health?

Method: Participants completed an intake questionnaire on general health and wellness and a battery of pre and post test assessments on mood, self-esteem etc. Interviews were conducted with participants at the completion of the choral sessions. Choral sessions took place one time per week for one hour for a total of 16 weeks.

Results: There were five large themes that emerged from the analysis of the interview and the researcher’s field notes including: friendship and companionship; simplicity; happiness, uplifting and positive feelings; relaxing and reduced anxiety; and fun. Below is a discussion with respect to each theme and direct quotes in italic font from participants.

Discussion: The majority of participants in this study benefited from attending the choir and thoroughly enjoyed many aspects of singing in a medium to large size group. Several participants commented that even if physical limitations such as throat pain or physical inability to sing inhibited them from singing all of the songs or words, the facilitators were very helpful in adjusting what was required and they enjoyed going to choir. The plans for Phase Two of the study will also be shared.

Dr. Amy Clements-Cortes is Practice Advisor/Senior Music Therapist at Baycrest Centre in Toronto, working with clients in the hospital and nursing home and supervising internship placements. At present she is also a sessional instructor at the University of Windsor in the Music Therapy program. Amy is President of the Canadian Association of Music Therapy, and Clinical Commissioner for the World Federation of Music Therapy. She owns and operates Notes By Amy: Music therapy and performing arts services. Amy obtained her Masters and Doctoral Degrees from the University of Toronto. Her work has been presented throughout the world at numerous conferences including: the World Federation of Music Therapy, European Music Therapy Congress, American Music Therapy Association, Canadian Association for Music Therapy, Ontario Gerontology Association Conference, International Symposium on music therapy in supportive cancer care, and the International Congress on Palliative Care. Her scholarly writings have been published in the Canadian Journal of Music Therapy, Canadian Music Educator's Journal, and the American Journal of Hospice and Palliative Medicine. Amy is also a singer, recording artist, vocal instructor and performing artist. She recently became a co-investigator in the AIRS project and is working on research with older adults.
Carina Daugherty (Carleton University)
Mary Gick (Carleton University)

Theme 3.3

Asthma in a sample of Carleton University students
Asthma is caused by interference in airways due to muscle spasms, secretion of mucus, and inflamed tissues contributing to discomfort when breathing (Wade, 2002). Asthma is irreversible but can be managed, commonly with bronchodilators (Lord et al., 2010). Research on benefits of singing in asthma (e.g., due to controlled breathing) is inconclusive and lacking in adults (Gick, 2011). The present pilot study examined frequency and perceptions of singing in students with asthma. Participants (n = 93) from Carleton University, all diagnosed with asthma, completed an online questionnaire consisting of self-reported measures of well-being, asthma history, severity, and control. Participants were also asked about activities (including singing) engaged in, or avoided due to asthma, and perceptions of these activities for asthma control. 65% of participants reported that they sing, and most (98%) exercised or played sports. Most (78.5%) participants reported that exercise or sports helped control their asthma, while only 21.5% of participants reported that singing helps control their asthma. Approximately 50% of participants reported at least sometimes avoiding exercise or sports due to asthma, while 19% of participants reported avoiding singing due to asthma. Although singing and exercise/sports participation was not associated with asthma severity, participants reporting avoiding singing or exercise/sports due to asthma had significantly poorer asthma control (both ps < .01). Students avoiding exercise/sports scored lower on the vitality measure of well-being (p = .018); participants avoiding singing tended to have lower vitality (p = .110). Taken together, students with asthma sing less than they exercise and perceive it to be less beneficial for their asthma. Future research comparing students with asthma to those with other (or no) illnesses may determine whether the pattern of singing and exercise frequency and perceptions is common to all students. Singing interventions may help uncover the relationship between singing avoidance, and asthma control and vitality.

Carina Daugherty is a Master’s student at Carleton University in Ottawa, Canada. She graduated last summer (2011) with a Bachelor of Arts, highest honors, in Psychology with a minor in Law and Music. Carina’s interests include singing and health. She has completed her honors thesis, under the supervision of Dr. Mary Gick, on choral singing and senior residents with dementia in a long-term care facility. Carina was enrolled in music lessons at a young age. Although she plays several different instruments, singing, piano, and guitar are her main interests. Currently she enjoys teaching music to a variety of ages, including young children and seniors. She is also actively involved in a variety of bands, performing music in the Ottawa area.

Mary Gick received a B.Sc. in psychology (1975, McGill) and a Ph.D. in experimental psychology (1981, Michigan). She joined Carleton University in Ottawa Ontario in 1985 and conducted cognitive research (publications include articles in Cognitive Psychology, Journal of Experimental Psychology) until her sabbatical in 1992, when she began studying health psychology with the late David McClelland (Boston University), and at the Cambridge Hospital Behavioral Medicine.
Jennifer Nicol (University of Saskatchewan)
Marya Stonehouse (University of Saskatchewan)
Katie McCaw (University of Saskatchewan)

Theme 3.3

Choir Singing as a Health Promoting Behavior

Grounded theory is an established research method used to generate mid-range theory that explains a social process, in this case, choir singing as a health process. The current study's purpose is to inductively generate an explanatory model that describes (a) the processes by which singing is experienced by choir members as a health promoting activity and (b) factors that might account for variations. In-depth semi-structured interviews with eight participants have been completed, fully transcribed, entered in NVIVO (a qualitative data management program) and analyzed. The findings of this first round of analysis informed successive interviews with additional participants. The proposed poster will present the emerging grounded theory in it successive stages of coding and analysis with the intent of both reporting findings and illustrating the research method.

Jennifer Nicol (Ph.D., Counselling Psychology) is an Associate Professor at the University of Saskatchewan. She is also an Accredited Music Therapist and Registered Doctoral Psychologist. She is responsible for the leadership of the AIRS 3.3 theme, has expertise in qualitative research, and is a pianist. For more information, please see http://www.usask.ca/education/people/nicolj.htm

Marya Stonehouse (B.A., Psychology) is a second year graduate student in the University of Saskatchewan's Masters of School and Counselling Psychology program. She is enjoying her involvement with AIRS, likes working with exceptional children and youth, and is a musician (voice, French horn and piano).

Katie McCaw (B.A.) is a first year graduate student in the University of Saskatchewan's Masters of School and Counselling Psychology program. She appreciates her involvement with AIRS, is pursuing an innovative thesis on arts-based knowledge dissemination, and is a dancer.
Marya Stonehouse (University of Saskatchewan)
Jennifer Nicol (University of Saskatchewan)

Theme 3.3

**Inclusive Choirs: Welcoming Youth with Disabilities**
Belonging is an important human experience associated with health and wellness, and researchers investigating the health benefits associated with group singing have identified social benefits as a common feature of choirs. However, individuals with disabilities are often isolated or excluded from activities because of their disability. Inclusive choirs are a special type of choir that welcome all members (e.g., the Saskatoon “Kids of Note” http://kidsofnote.com). These choirs are founded on a belief that all people, regardless of ability, should have the opportunity to sing alongside others. The intent of the current study is to add to the extant literature on the benefits of group singing by learning about the experience and perceived benefits of group singing from the perspective of the choir members with disabilities and their family members. The proposed poster will include a literature review introducing the key concepts of inclusion (contrasted with integration), belonging, and integrative choirs. The qualitative research design will be summarized along with data collection strategies suitable for working with children aged 10-17 years and with intellectual and physical disabilities. Preliminary data will be included as available.

Marya Stonehouse (B.A., Psychology) is a second year graduate student in the University of Saskatchewan's Masters of School and Counselling Psychology program. She is enjoying her research assistant experiences with AIRS, likes working with exceptional children and youth, and is a musician (voice, French horn and piano).

Jennifer Nicol (Ph.D., Counselling Psychology) is an Associate Professor at the University of Saskatchewan. She is also an Accredited Music Therapist and Registered Doctoral Psychologist. She is responsible for the leadership of the AIRS 3.3 theme, has expertise in qualitative research, and is a pianist. For more information, see http://www.usask.ca/education/people/nicolj.htm

Laurel Young (Concordia University)
Tiana Malone (Concordia University)

Theme 3.3

**Singing and health: A research initiative at the Centre for Arts in Human Development (CAHD) at Concordia University**

Although previous research has indicated that singing can have positive health outcomes for the
general population (i.e., improved mood, increased self-esteem/confidence, increased feelings of well being, improved respiration, positive impacts on the immune system, etc.) the relevance of these findings for many special needs populations have not been fully explored. Recent publications do indicate that some models of clinical practice are starting to emerge. However, these publications also reveal that more research is needed to support the efficacy of these practices, and that there are many populations for whom models have yet to be developed. The purpose of the first singing and health research project at the CAHD is to investigate the impact of a structured weekly singing group on the health and well being of adults with developmental disabilities. It is hoped that this will be the first of several projects conducted at the CAHD that will aid in the development of specific models of singing/vocal techniques that can be used in both clinical and non-clinical (i.e., community) contexts with individuals who have a variety of complex or special needs (e.g., individuals with cancer, physical disabilities, dementia, etc.). Furthermore, the results of this research and of future studies will be used to develop training workshops for music therapists, musicians, other health professionals, and/or educators who want to develop high quality and effective singing programs for persons with complex or special needs. This poster will provide an overview on this initiative as well as highlight relevant perspectives on singing and health from the field of music therapy.

Laurel Young, PhD, MTA, Fellow, Association for Music & Imagery, Vice President, Canadian Association for Music Therapy Board of Directors, Canadian Music Therapy Trust Fund Assistant Professor, Creative Arts Therapies Department, Concordia University. Dr. Young has 18 years of clinical experience in various areas including geriatrics/dementia, cancer, HIV, palliative care, community mental health, and developmental disabilities. She is also a certified practitioner in the Bonny Method of Guided Imagery and Music (FAMI). Research interests include assessment, singing and health, and understanding clients’ perspectives on their music therapy experiences. Prior to joining the Department of Creative Arts Therapies at Concordia University, Dr. Young was the first Professional Leader of Creative Arts Therapies at Sunnybrook Health Sciences Centre (Toronto). She also taught in the music therapy programs at Wilfrid Laurier University (Waterloo) and Temple University (Philadelphia) and received awards from both institutions for her outstanding contributions to the field of music therapy. Dr. Young has presented internationally, serves on editorial boards, and has published in several peer reviewed journals. She was recently appointed as a member of the research team at the Centre for Arts in Human Development at Concordia. She is also an affiliate member of AIRS.

Tiana Malone holds a MMus in Vocal Performance from Université de Montréal and is currently completing her training as a Music Therapist at Concordia University. She has been involved in theatre and music within her community and on the professional stage for over 20 years, and has worked with organizations such as the National Theatre School of Canada and Pacific Opera Victoria. In 2008, she was the winner of the Bea Scott Memorial Vocal Scholarship, and also received top prize for French Art Song of the Victoria Performing Arts Festival. Tiana has taught voice, piano and music theory for nine years in the Lower Mainland, around Vancouver Island and in Montreal, and has given many choral and vocal workshops. She was a music theatre instructor and vocal coach for four years at EagleArts Music and Arts Camp, and was a member of Pacific Opera Victoria’s Young Artist Program. Her current interests include the therapeutic applications of singing and musical performance with a variety of clinical populations.
Ditty as didactic tool for the teaching of French phonetics

Applied Linguistics and speech therapy use musical texts in order to help learners being more familiar with phonetic aspects. Ditties seem an excellent basis because they are little songs - generally used for children – easy to memorize and to produce. First, rhythms, intervals and pitches are simple. Second, texts are short, rhymed and repetitive. Eventually, sounds and games play a bigger part than textual meaning. The problem is that teachers often simplify the form and/or the content, and mainly focus on the text. Thus, they pay little attention to music features, whereas they may reinforce segmental and supra-segmental aspects. Therefore, we suggest the use of a ditty especially formulated for the teaching and the learning of French phonetics.

Our research leads to the conclusion that a close collaborative work between teacher and composer is required. In addition, our study showed that the composition of the ditty should follow a specific order of activities. (1) To begin with, the teacher (sometimes associated with the composer) writes the lyrics. In this goal, the choice of vocabulary will depend on the particular phonemes the teacher decides to teach. Also, the consonants should be selected in order to make the perception or the production of a given vowel easier, and vice versa. The teacher explains to the composer where are the stressed syllables. (2) Afterwards, the composer creates the rhythm, which shall faithfully result from the recitation or reading of the text. Then, he composes the music according to the textual meaning, if any, while taking into account supra-segmental and segmental constraints. Furthermore, the musical creation will depend on the learners’ competences in singing and music theory. Generally, we recommend the writing to be based on a limited vocal pitch range and on a simple rhythmic pattern, in such a way that every learner could sing it. The resulting ditty with a didactic purpose should retain all the characteristics of the genre, and at the same time, perfectly adapt to a phonetic teaching and learning situation. Consequently, the teacher may use the material without distorting an authentic genre, and overall, using music and singing to enhance skills in French phonetics.

Sandra Cornaz is a third year bi-national (France-Italy) PhD candidate with Gipsa-Lab in Grenoble and LFSAG in Turin. Her research study deals with phonetics, Singing-Voice and Acquisition of French as a Second Language. This argument is being developed jointly with Nathalie Vallée (CR1-CNRS), Nathalie Henrich (CR1-CNRS) and Antonio Romano (CR). She is responsible for courses in infant language development, phonetics and general linguistics in the Sciences of Languages Department at the University of Grenoble, Campus 3 (France). She is also a teacher of French as a Second/Foreign Language since 2003 and has worked in Botswana, China, Germany, Italy and France in differing working contexts; she was responsible for the teaching of phonetics for both learners and teachers. To that end, she used French songs and the singing-voice to enhance perception and production. More information is available on http://www.gipsa-lab.i (1/2 p)pg.fr/~sandra.cornaz/.
Chrystèle Chovelon and Nadia Jauneau-Cury are both singing teachers at the music and dance conservatory of Grenoble, professional lyrical singers and co-presidents of Temps Relatif, an association for young singers’ formation and promotion.

Utpola Borah (Ohio State University)

Theme 2.2

Using multimedia technology to teach North Indian vocal music

**Introduction**: The tradition of music education in Hindustani (North Indian) classical music known as the “guru-sishya parampara,” is a unique system of transmitting musical knowledge, which can be traced back to the Vedic period (1st-6th centuries BCE). The terms guru (mentor/master), sishya (pupil/disciple) and parampara (tradition) collectively refer to an oral tradition that transmits the art/music through a preceptor. In India it is the basis of transmission for all art forms and embodies the living and learning relationship between master and disciple in both formal and informal learning settings. Although the guru-sishya parampara is being supported by variety of institutional setting in India and abroad, currently many gurus (instructors) are employing multimedia technologies for teaching music.

**Method**: I will examine the progress of three students through recordings of video conferencing lessons and interviews with students and parents.

**Results**: Indian classical music requires face-to-face interaction between pupil and student. The use of Skype facilitates learning in diverse geographical locations, as it is often difficult for students to find competent gurus outside (and even within) India. However, skype lessons require greater use of written materials and fixed lesson plans.

**Discussion**: Multimedia technologies do not replace traditional learning systems, but have great potential for the teaching and learning of many styles of music throughout the world.

Utpola Borah is an ethno-musicologist, educator, cultural archivist and vocalist. Utpola has done an extensive study on “Bihu” songs of Assam which has found expression in her book, Bihu Festival of Assam—Music, Dance & Performance published by B.R. Rhythms, Delhi. Utpola has worked as a Course Writer, Content editor and Expert for the PG Diploma in Folklore and Cultural Studies in the School of Interdisciplinary and Trans-disciplinary Studies at the Indira Gandhi National Open University (IGNOU), New Delhi. She has presented lectures and given demonstrations at international and national seminars and conferences. Utpola is an eminent Hindustani (North Indian) Classical vocalist. She has been trained extensively in the traditional "Gurukul" system under Gaanaprabha Dr. Prabha Atre, Vidushi Malashri Prasad and Pandit Indralal Dhanda of the Kirana, Banaras and Udaipur Gharanas (traditions) respectively. Utpola is an accomplished performer and All India Radio and Doordarshan (Television) artiste.
Hans Utter (Ohio State University)

Themes 2.2 & 1.2 (Short Oral)

From Learning to Performing: A Case Study of Indian Vocal Music

*Introduction:* The tradition of music education in India (guru-sisya parampara) is currently being supported in a variety of institutional settings. My presentation examines the training methods of the Sangeet Research Academy in Calcutta, focusing on a single student. I will compare the student in class and in a performance setting, focusing on the non-verbal communication of physical cues such as gestures, head movements, and other facial expressions.

*Method:* The methods employed consists of collecting ethnographic data through interviews and audio/video recordings, participation in learning situations, and examinations of this data to assess the success of teaching/learning and performance through audience reactions and the self-assessment of the instructors and the artist.

*Results:* Certain institutions are more suited than others in the production of highly qualified artists and performers. It was found that the preservation of individualized instruction and reliance on oral transmission at the Sangeet Research Academy was superior to a standardized curriculum. The emphasis on active learning and instruction modeled on performance contexts is conducive for the production of vocalists capable of artistic excellence.

*Discussion:* For North Indian classical vocal music, the system of oral transmission and individualized training appears to be necessary for the requirements of this art form. The ability to elicit emotional responses in audiences is increased.

Hans Utter is an Adjunct Professor of Music at The Ohio State University and Capital University. His research focuses on the traditional methods of teaching and learning music in India, music perception and cognition, and the role of the government in arts policy. Hans is an accomplished sitarist, and has performed widely throughout the world. He has conducted extensive research in India and Central Asia, which has been published in journal articles and book chapters. He is currently completing his second book. He holds an M.A. and Ph.D. in Ethnomusicology from The Ohio State University.

Alda de Jesus Oliveira (Federal University of Bahia)

Theme 3.1

Using songs from different cultures for the development of voice

The author’s experiences with teaching and investigation in music pedagogy related to socio-cultural contexts, especially in Bahia, Brazil, are critically reflected in relationship to the preliminary data and field observations of the AIRS international study on cultural understanding applied since February 2012, with
children from Brazil, Canada, China and Kenya. The author has participated in the AIRS International Project on Cultural Understanding, coordinated by Dr. Lily Hafteck, over a span of 12 weeks. Students of the Educational Center Santo Antonio (CESA) and “Dois de Julho” School (from the State of Bahia) have learned six traditional songs from each country, a total of 24 songs, together with background information about the songs and cultures. Teaching materials (songbook, CD, DVD and PowerPoint slides) provided the songs and information on cultural backgrounds in student’s native languages (English, Chinese and Portuguese).

The song repertoire chosen included music that could represent the Brazilian essence and the traditional spirit of children’s play. Two classes of children from each school ages 10 and 11, are participating. The experimental class learned both the cultural information and songs while the control class only learned the cultural information. During the period of 12 weeks, the CESA students learned to sing all Brazilian and Kenyan songs, one Chinese song, and two Canadian songs. They have responded to a questionnaire before and after the study to assess their attitude towards the people from the four countries. A questionnaire on the opinion on the songs of each country was also administered after the unit. Interviews were conducted with both teachers and children. The research study is still in process at the “Dois de Julho” school. In addition to develop creative and performance based music skills, the study applied at CESA school have contributed to develop student and teacher’s capacities to deal with ambiguity, to explore new possibilities of singing and dancing, to express their own thoughts and feelings and understand the perspectives of others. In my opinion the students are becoming to more globally aware, collaborative, and responsible citizens.

Through the use of effective and well organized communications devices (CD, DCD, book, scores, power point) the AIRS study connected students and teachers in today’s interconnected world. The native musical examples provided excellent models for the development of the voice, since the participating children could watch the native children, of their own age, singing and dancing, playing the original games themselves. At the final presentation the experimental classroom teacher said “I wish all the disciplines were as effective as this project was for the promotion of collaborative, concentrated, creative and positive emotions processes at CESA school.” Both teacher and students were able to learn and to critically interpret the media messages, and to convey their own ideas through the medium of artistic form, using well the artistic media and tools by incorporating the technology proposed by the AIRS project. Singing the selected songs learned by listening the CDs and seeing the videos promoted the development of curiosity, imagination and creativity. For our satisfaction, they also developed their evaluation skills, since they were frequently comparing their own performances with the original recorded models of songs from each participating country. Through the use of songs from different cultures for the development of voice and for cultural understanding we could promote at the CESA school the collaboration among researchers, students, teachers (music and classroom), school principal and pedagogic supervisors, and above all, promote the use of media, both traditional and new, as a powerful opportunity to cultivate 21st century skills by articulating human expression through the development of the voice.

**Alda de Jesus Oliveira** is a Brazilian music educator, composer, researcher and Supervising Professor at the Federal University of Bahia, Brazil. In 1986 she received her PhD in Music Education from The University of Texas at Austin, TX. Prior to her doctoral studies Alda obtained an MA Composition (TUFTS University, Medford, MA) in 1979, BA in Music Education in 1971 (Music School at the Federal University of Bahia, Brazil), and her BA Piano in 1962 (Music Institute, Catholic University of Salvador, Brazil). She was also awarded as a Housewright Eminent Scholar by Florida State University in Tallahassee (2001).

**Daniella Gramani** (Federal University of Paraiba)
Theme 2.1

**Singing, playing and dancing: Brazilian cultural manifestations**

In this workshop, I will work with songs and dances from Northeastern Brazil. As they occur in their places of origin, this "hands on" workshop will include learning songs by rote, playing rhythms and moving/dancing, following simple choreographic steps. Main concepts associated with Brazilian popular culture like joy and collectiveness will be embedded in the musical practices.

**Daniella Gramani**, singer, arranger, rabeca (a type of Brazilian fiddle) player and percussionist, is currently a lecturer in popular singing at the Federal University of Paraiba. She holds music degrees from the Faculdade de Artes do Parana (undergraduate and post-graduate), and Federal University of Parana (master of music). An active performer and former member of the prestigious groups Mundarêu e Noivas do Alfredredo, she is currently director and singer in the vocal groups "Ê o que, hômi?!" and "Grameira". She is also an active researcher in the fields of music, culture and education.

**Lily Chen-Hafteck** (Kean University), **Angelita Broock**, (Federal University of Bahia), **Zuraïda Abud Bastião** (Federal University of Bahia), **Elizabeth Andang’o** (Kenyata University), **Yue Xiao** (China Conservatory of Music), **Arla Good** (Ryerson University), **Kelly Gillis** (UPEI).

Theme 3.1

**The international project on cultural understanding: Individual reports**

*See abstract on page 33 for more information.

**Coralie Vincent** (Laboratoire Structures Formelles du Langage (CNRS))

Theme 1.2

**Annotating audiovisual data with ELAN**

The ELAN software is widely used in an increasing number of fields (social interaction, gesture analysis, sign language study, sound transcription, etc) to create annotations for video and audio resources. One of the strengths of this tool is to be fully compatible (regarding import as well as export) with other transcription softwares such as Praat, CLAN. It also supports a large variety of audio and video file formats. The aim of the present workshop is to briefly show the functioning of the ELAN software and to initiate, in collaboration with the participants, the building of a draft template that could be used as a common tool by research teams involved in AIRS.
After obtaining a Master’s Degree in sound engineering from the "Conservatoire National Supérieur de Musique de Paris", Coralie Vincent entered the CNRS (French National Center for Scientific Research) as an audiovisual assistant. Since 2002, she has been working in France and Canada (Banff; Montreal; Charlottetown) in various fields: audiovisual production and postproduction, computer science, phonetics (acoustic and articulatory data acquisition) and psycholinguistics. She is currently holding a job as a research assistant in the "Formal Structures of Language" laboratory (CNRS / Université Paris), where she designs experiments involving eye-tracking, motion capture, multimodal data acquisition and audio-visual corpora. Coralie’s research interests include instruments and experimentation history in phonetics and linguistics, as well as voice processing, voice design and singing in the 20th-century music (classical and popular music).

Steven Livingstone (Ryerson University)

Pitch Analysis Workshop

**A beginner’s guide to Praat scripting**

Praat is the most widely used free scientific software program for the analysis of speech and vocal signals. Praat offers a wide array of commonly-used speech analysis functions and comes packaged with its own scripting language. Through scripting, simple routines and analyses can be automated to run across many audio files. In this talk I will outline the basics of Praat scripting for the analysis of vocal signals. The talk is aimed at beginners and assumes no prior programming knowledge or experience with Praat. The talk will conclude with a real-world example of how Praat scripting was used in a research project that examined acoustic correlates of emotion in speech and song.

With a Ph. D. in Computer Science and Bachelors in Physics and Information Technology, Steven Livingston brings an interdisciplinary skill set to singing research. Since completing his Ph. D. in 2008, he has undertaken a program of research dedicated to understanding the role of facial expressions in singing performance. In 2009, he provided the first time-course analysis of facial expressions in emotional singing. The study, which was done in collaboration with Bill Thompson and Frank Russo, revealed that performers’ facial expressions differentiated their emotional intentions. This research was continued under the supervision of Caroline Palmer and Marcelo Wanderley at McGill University, where he acquired extensive analytical techniques for the study of motion and auditory data. Steven has been an AIRS postdoctoral fellow since 2011, working with Frank Russo at Ryerson University on the development of facial mimicry in emotional singing.

Stefanie Stadler Elmer (University of Zurich)

Pitch Analysis Workshop
Analysing and representing singing by the Musical Micro Analysis Tools (mmatools)

The main features of vocal sounds such as singing and speaking are fundamental frequency (perceived as pitch), duration, intensity, and timbre. In the analysis of song singing, the pitches of the syllables and their timing are most essential. Whereas the timing dimensions are easily measurable, pitch has to be extracted by calculating the fundamental frequency (F0) of a periodic signal. There are various algorithms available (see Hess, 1983).

Our method to analyse singing with the Musical Micro Analysis Tools consists of two steps, and for each one we devised a computer program. After mapping the social context of a particular singing event, we first carry acoustical analysis by the Pitch Analyzer, and second, we represent the results by a new notational system (Notation Viewer). The Pitch Analyzer and the Notation Viewer are available at http://mmatools.sourceforge.net.

Our Pitch Analyzer offers two different algorithms to calculate pitch, one based on the spectrum, the Frequency Peaks Analyzer, and one working in the temporal domain, the Minimum Maximum Analyzer. This allows comparing results.

The second step consists in reducing the resulting pitch patterns to a limited set of categories such as “stable pitch”, “stable pitch with beginning or ending glissando”, “instable pitch” etc., and in inserting these data together with data on syllables and their timing into a data structure that yields a graphical representation by the Notation Viewer. As a result, a particular singing event is visualised as a simultaneous configuration of data on the syllables, their timing, and the pitch patterns. This method allows describing in detail how a person organises the various features of vocal sounds into a song.

Dr. Stefanie Stadler Elmer is an Associated Professor of Psychology at the University of Zurich. She received her PhD from the University of Bern and her Habilitation from the University of Zurich. Her main interests in research and teaching concern the development of music and language, song singing, and methods to foster early development in these domains. She is involved in several research projects at national and international levels, e.g., as a collaborator in the AIRS (Advancing Interdisciplinary Research in Singing), supported by the Social Sciences and Humanities Research Council of Canada.

Christine D. Tsang (Huron University College at Western)

Pitch Analysis Workshop

Evidence for Vocal Sensorimotor Relationships in 6-year-olds

Introduction: The vocal-sensorimotor loop model of singing (Dalla Bella, Berkowska, & Sowinski, 2011) suggests that memory, motor skill, perception and feedback all contribute to singing ability. Many components of the vocal sensorimotor loop begin to develop during infancy, but take a long time to reach maturity (Tsang, Friendly & Trainor, 2011). This pilot study examined the relationships between singing perception and singing production in a small sample of 6-year-old children.

Method: The Vocal Auditory Motor Developmental Assessment (VAMDA) was used with 35 6-year-old children in two different Grade 1 classrooms in two different public schools in Hamilton,
Ontario. The VAMDA assessed children’s singing ability on a series of matched perception and production measures and included measures of verbal ability and working memory. 

Results: The results show that in comparison to adult singers, the children in this sample are generally poor pitch singers (e.g., average mean deviation of pitch > 3 semitones). Interestingly, poor singing accuracy in both single pitch and melody matching was negatively correlated to performance on the melody discrimination task ($r(33) = -0.43, p<0.05$; $r(33) = -0.53, p<0.05$, respectively).

Discussion: The findings suggest that children’s pitch and melody production abilities may be inversely related to children’s pitch and melody perception abilities. These results support the notion that children’s poor pitch singing abilities are not necessarily due to poor pitch perception. It is possible that the motor skills and sensorimotor integration involved in accurate singing are not yet mature at 6 years of age.

Christine Tsang is an Associate Professor and Chair of the Department of Psychology at Huron University College at the University of Western Ontario. She has published several research articles on the development of music perception and cognition. Her many research interests include examining the effect of context on infant musical preferences, multimodal perception of music during infancy, and the role of music training on language and cognitive development. Christine is also a classically trained pianist, and in recent years has started playing the violin.

Bing-Yi Pan (University of Prince Edward Island)

Pitch Analysis Workshop

A preliminary example of a Matlab application reading Praat output to analyze the data of the AIRS Test Battery

To analyze the data of the AIRS test battery, Praat is employed to obtain an F0 vector and annotate the lyrics or notes at a timeline (special parts of the sound stream, e.g., the tonics within a piece, are marked) for all the components. A set of Matlab scripts is being written to read the Praat results and do further analysis. One preliminary example of Matlab script will be demonstrated for analyzing shifts in when participants sing the song Brother John, both within the single song, and across 5 times in which this same song is sung in different part of the test.

Dr. Bing-Yi Pan received his Ph.D. in physics in 2010 from the Institute of Physics, Chinese Academy of Sciences, Beijing and B.Sc. in physics in 2004 from Shandong University, Jinan. Simultaneously, he received his B.A. in music education in 2008 from Central Conservatory of Music, Beijing. Currently, he holds an AIRS postdoctoral fellowship at UPEI with Dr. Annabel Cohen, is working on the AIRS Test Battery and also contributing to Themes 2.2 and 3.1. He is also interested in formal teaching of singing.
Coralie Vincent (Laboratoire Structures Formelles du Langage (CNRS))

Theme 1.2

Audio recording dos and dont's
Audio recording quality, though sometimes neglected in field research, is crucial. The aim of this presentation is to show frequent problems and errors encountered when building corpora involving audio (-visual) data. We will first describe simple elements of sound theory (amplitude, frequency, stereo vs mono,...) and explain the basics of digital sound recording technology. Then we will make the audience experience common problems encountered when recording audio data through hearing sound examples. Finally, we will give advices and solutions to these problems. The presentation will be followed by a period for AIRS students and collaborators to ask specific questions and to give feedback on problems they are facing with audio (-visual) data gathering.

After obtaining a Master’s Degree in sound engineering from the "Conservatoire National Supérieur de Musique de Paris", Coralie Vincent entered the CNRS (French National Center for Scientific Research) as an audiovisual assistant. Since 2002, she has been working in France and Canada (Banff; Montreal; Charlottetown) in various fields: audiovisual production and postproduction, computer science, phonetics (acoustic and articulatory data acquisition) and psycholinguistics. She is currently holding a job as a research assistant in the "Formal Structures of Language" laboratory (CNRS / Université Paris), where she designs experiments involving eye-tracking, motion capture, multimodal data acquisition and audio-visual corpora. Coralie’s research interests include instruments and experimentation history in phonetics and linguistics, as well as voice processing, voice design and singing in the 20th-century music (classical and popular music).
Dona Nobis Pacem
(Translation: Give Us Peace)

Traditional

Do·na no·bis pa·cem, pa·cem. Do·na no·bis pa·cem.

Do·na no·bis pa·cem. Do·na no·bis pa·cem.

Do·na no·bis pa·cem. Do·na no·bis pa·cem.
Viva la musica
This is a traditional composition from Bhatkhande Kramik Pustak Malika-2 Set in Raga Khamaj and 16 beat Rhythms cycle known as Tintala. There are a number of complex embellishments which are not included in the interest of simplicity. Here is a description of the raga: (note - Sa Re Ga Ma Pa Dha Ne Sa corresponds to Do Ri Mi Fa Sol La Ti Do, lower case indicates a flat, Aaroh/Avroh = ascending and descending). The alap is a basic outline of the melody (written w/out glissandos or microtonal inflections).

Sthayee (first part of the composition)

Namana karu main sadguru charana
Saba dhukha harana bandita charana

Antara (2nd or end of the composition)

Sudha bhav dhara anta karana
Suranara kinara bandita charana

Meaning

I bow down to my Guru (mentor)/who takes away all my sorrow

Praying with emotional purity/brings all divine being together
RAGA KHAMAJ

AAROH / AVROH:  S G M P D N S. | S. n D P M G R S
PAKAD (MUKHYANG - MAIN NOTES): G M P D n D, M P D, M G
VADI (MAIN NOTE) – G
SAMVADI (NEXT MAIN NOTE) – N
TIME OF SINGING – SECOND PERIOD OF NIGHT

RAGA KHAMAJ

AALAP:

4. G M P D N - S. - , (S.) - n D P, P D N - S. -
5. n D P D N - S. - , S. R. S. - , S. - n D P - , G M P D N S. -
Music from the Wagogo people of the Dodoma region of Tanzania.

Cibula Iye, Cibula

Game: Standing circle, with one leader. While the leader sings the call, all participants bounce the beat with both feet. All sing the response, while jumping towards the center of the circle, then back out again once the call is sung. The leader moves back and forth between the A section (line 1) and the B section (line 2), with as many renditions of each section as desired. The challenge comes for the responders, trying to figure out when to jump forward and chant —Matu, because the caller can change whenever he or she wants.

Translation:
Simama: Stand up
Kaa: Sit down
Ruka: Jump

Game: Start the song seated in a chair. Act out the movements as you sing them, jumping on the beat for all of measure three (i.e. four times).
From Wagogo cultural group of Dodoma, Tanzania.

**Translation:**
Noponkhola: Where can I pass?
Mlango mdinde di: The door is closed.

**Game:** Children hold hands with one child located at the circle’s center to lead the game. The leader sings, while moving in and out of the circle, seeking a way to pass under the arms of the children. The object of the game is for the students in the circle to prevent the one in the middle from passing through, so it can take a while for one pair of children finally create enough space for the leader to move through. Then, one of the pair jumps in the middle as the new leader.
One Voice (Ruth Moody, The Wailin‘ Jennys)

This is the sound of one voice
One spirit, one voice
The sound of one who makes a choice
This is the sound of one voice

This is the sound of voices two
The sound of me singing with you
Helping each other to make it through
This is the sound of voices two

This is the sound of voices three
Singing together in harmony
Surrendering to the mystery
This is the sound of voices three

This is the sound of all of us
Singing with love and the will to trust
Leave the rest behind it will turn to dust
This is the sound of all of us

This is the sound of one voice
One people, one voice
A song for every one of us
This is the sound of one voice
This is the sound of one voice

Contributed by Lisa McLellan, 2009
VINUM, VINUM, VEFJUM BAND

ICELANDIC ROUND

VINDING, VINDING, LEAVING YARN
LET’S MAKE CLOTHING IN THE BARN, MAKE A BOWL FOR MY FRIEND

VINUM, VINUM, VEFJUM BAND
VEFJUM FALLAFT HOFU_ BAND FYIR (-) HOFU_ HNEYGA_ FYIR (-) HNE SIN SEYGA_ EVO SKAL (-) ENU - A SEE.
This Canadian folk song is often sung to help keep a rhythm while canoeing through lakes surrounded by the abundant birch trees. The song brings to mind many images of Canadian nature and wildlife. For example, animals such as the beaver, the moose and the goose are mentioned. Aboriginal culture is also represented by the phrase —High on a rocky ledge I shall build a wigwam; a wigwam is a domed, round shelter built of grass, brush, bark, rushes, mats, reeds, hides or cloth. These shelters were common among numerous First Nations tribes. The song is also sung around a campfire and often in a round. Though the origin of this song is unknown, it has been a popular tune to sing at boy scouts and Girl Guide camps since the 1930s.

http://www.youtube.com/watch?v=OUGHzMPfleK
(demonstrates the round)

http://www.hickerphoto.com/data/media/24/canoeing_vacations_sc172.jpg
This traditional Newfoundland folk song is written in a dialect unique to the East Coast of Canada. Newfoundlander have a distinct way of speaking with words and phrases exclusive to their region. The title translates to — I’m the buddy.

It is believed that the song originated in the 1870s in a Newfoundland fishing village. This song tells the story of a fisherman who catches some fish to take home to his wife, Liza. It is a lively dance song and the lyrics reflect the East Coast dependence on the sea. This song is a popular tune in dance halls and at kitchen parties; these are parties with Celtic-based music in intimate settings such as a friend’s home.

These traditional gatherings are still common among people of the East Coast. The song was covered by the popular Canadian group - Great Big Sea.

http://www.youtube.com/watch?v=S-bQn9DtgUA

http://www.tourismlowernorthshore.com/harrington.asp

Harrington, Newfoundland fishing village
This song is about Jasmine Flowers which are beautiful and have a good smell. Yet they are very strong and can stand against the wind and rain. The underlying message is to encourage people to face their difficulties and be strong like Jasmine Flowers.
AIRS Round

*In this round, each new voice enters when the previous voice reaches the % (bar 4, beat 4).

Annabel Cohen

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Advancing Interdisciplinary Research on Singing The

Social Sciences and Humanities Research Council is bringing research on De-

velopment, Education, and Well Being.

Seventy five Researchers in Sixteen Countries are Overseeing.

Ostinato

Airs Research on Singing

2010 A. Cohen
O Canada

O Canada! Our home and native land! True patriot love in
thine breast, O Canada! From far and wide, O Canada,

O Canada, from far and wide, A chorus a-

nest the home we adore! With growing strength we see thee rise. The

This is the land we love! Our home and native land! True patriot

true patriot love in thine breast, O Canada, From far and wide,

true patriot love in thine breast, O Canada, From far and wide,

true patriot love in thine breast. O Canada, From far and wide,

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Data Sharing Workshop Questions

Chaired by Michael Forrester

The following questions, put to panelists prior to the workshop, provide a framework for discussion that will include all workshop attendees.

1. DATA
What constitutes data (in AIRS) and what does it mean to share?

2. USERS
When you think of collecting sharable data or utilizing sharable data, is the expectation that the data will be used by/was prepared by researchers in the same field? Does it matter if it is open to any researcher who can make use of it? If so, in what ways?

3. ETHICS
What ethical concerns are raised by data sharing?
For example, are there ethical issues raised by the observation that many participants have given permission for their recordings to be studied even though it is not possible to be sure exactly what kind of analysis might be conducted? What specific procedures should be brought into place so that ethical concerns are addressed and at the same time further developed so that ethical guidelines can be improved? How do we develop culturally sensitive ethical practices around data sharing?

4. CITATION
How do you envisage a citation protocol emerging that is both sensitive to the original contribution made by those who submit data to AIRS and subsequent researchers who analyze any data/data sets? In this regard, in what ways do you consider that 'raw' or baseline data is distinct from 'metadata' derived from the original recordings or annotations?
Midterm Report – Advancing Interdisciplinary Research in Singing

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Midterm Report – Advancing Interdisciplinary Research in Singing

Prepared by Annabel J. Cohen (Project Director) and the AIRS Team
July 2012

Original Objectives

Singing is a natural form of human vocal communication relatively little explored yet significant throughout the entire lifespan. In 2008 a proposal entitled "Advancing Interdisciplinary Research in Singing (AIRS)" was directed to the Major Collaborative Research Initiative (MCRI) Program of the Social Sciences and Humanities Research Council. Its purpose was to bring together outstanding scholars from many disciplines to address three broad questions about singing: (1) how does singing develop in every human being? (2) how is singing learned, how should it be taught and used to teach? and (3) how can singing impact well-being? Focusing on these three themes of Development, Education and Well-being, the researchers shared a common inquiry into three broad influences on singing: what is unique to the individual (e.g., a special quality of the voice), what is specific to a culture (e.g., Canadian versus Chinese), and what is universal to all people (e.g., sensitivity to the similarity of tones an octave apart). Figure 1 below shows this overall AIRS Research Framework--three inter-related themes investigated from the perspectives of unique individual influences, cultural influences, and universals.

![AIRS Research Framework](image)

The goals were to obtain data to explain how singing develops across the lifespan and across cultures, to determine the best means of teaching singing and using singing to teach, and to understand how singing can improve cross-cultural understanding, intergenerational understanding, and physical and mental well-being. The acquisition of new data allows for the refinement of theory. With theory and data in hand, it becomes possible to justify to policy makers the importance of programs that exploit singing in education, broadcasting, culture, immigration, international affairs, veteran's affairs, and healthcare.

This Midterm Report reviews the extensive activity and progress during the first 3¼ years of the AIRS MCRI. It is submitted with ¼ year remaining of the original Milestone Document. By the midterm (almost 3 months from now), the team is expected to meet all major milestones. Funded research and travel opportunities have been directed to 54 undergraduates, 24 masters, and 32 PhD students (many in multiple years) as they help to meet the AIRS milestones while engaging in data
collection, analysis, and all other aspects of the collaboration.

**Management**

The large team spanning Canada and including 15 other countries requires the complex management structure originally outlined in the Milestone Document (see p. 3). Project Director Annabel Cohen is assisted by Project Manager Therese Antonini and Post-doctoral Fellow Bing-Yi Pan. At this time of peak activity, Ross Dwyer (Administrative Assistant) is providing additional support, and Nyssim Lefford, a postdoctoral fellow, is assisting primarily with the implementation of the digital library.

The Steering Committee includes the Theme Leaders from Development (Frank Russo), Education (Patricia Campbell), and Well-being (Mary Gick), chaired by the Project Director and attended by the Project Manager (ex Officio). It meets monthly by videoconference to discuss, monitor, and guide all aspects of the AIRS collaboration, providing stability for the vast project.

The Advisory Board (Philip Smith - Chair, Department of Psychology, UPEI; Kate Stevens, Director MARCS Auditory Perception Labs, University of Western Sydney, and Hilary Apfelstadt, head of choral training - University of Toronto)\(^1\) meets at least twice a year with the Director, and attends the Policy and Planning Committee meeting at the Annual Meeting.

The Policy and Planning Committee. Each of the three research themes has three research sub-themes, making nine in all. The sub-theme team leader or co-leader sits on the Policy and Planning (P & P) Committee. The Committee also includes a representative from each of 5 other groups: The Student and Early Career Professionals, Partners, Stakeholders, Global Group (dedicated to exploiting the international opportunities and assuring cultural understanding across the project) and the Ethics, Statistics, and Intellectual Property Committee. A final group, Theme 4, is the Digital Library Team. Including the Theme Leaders and the AIRS Director, the P & P Committee constitutes a large percentage (~30%) of the researchers in the collaboration. It meets typically three times a year, twice by video conference and once prior to the opening day of the Annual Meeting. The members of the P & P Committee make presentations in the full plenary session at the Annual Meeting, reviewing the progress toward the research goals for the collaboration. In both years that the Annual Meeting was held as a satellite to a larger meeting (i.e., Seattle, 2010, International Conference on Music Perception and Cognition, or St. John’s, 2011, Phenomenon of Singing Symposium), the P & P Committee organized a large public symposium or series of papers to disseminate the nature and progress of AIRS to the wider research community. P & P Committee meetings themselves foster synergies across themes. P & P Committee members receive and discuss information about major AIRS events such as the Annual Meeting, and they debate and approve policies recommended by the Steering Committee as follows

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\(^{1}\) An adjunct member Dr. Anna Maria de Sciullo has not yet been involved initially due to scheduling issues. Dr. Philip Smith became Chair of the Psychology Department after his appointment to the AIRS Advisory Board. Dr. Kate Stevens had originally been a collaborator of AIRS but found herself serving in an advisory rather than research capacity, and she agreed to serve officially on the Advisory Board when approached by the Steering Committee during the 2nd year of operation. Dr. Hilary Apfelstadt was originally at the Ohio State University and was recruited by the University of Toronto during the first year of serving on the AIRS Advisory Board.
AIRS Project Director - Annabel J. Cohen

Project Manager - Thérèse Antoun
Administrative Assistant - Ross

Bing-Yi Pan & Nysym Lefford
Postdoctoral Fellows

AIRS Steering Committee (4)
F. Russo (Theme 1), P. Shehan Campbell (Theme 2), M. Gick (Theme 3) A. Cohen, Director

AIRS Policy and Planning Committee (15)
1 vote from each of 2 Sub-themes + 1 from each of 6 remaining teams:
Digital Library, Global, Ethics, Partners, Students & Stakeholders

Global
Caroline Van Norden

Ethics, Statistics & IP
Brad Frankland

Digital Library
Ichiro Fujitani

Theme 1
Development
Frank Russo

Theme 2
Education
Patricia Campbell

Theme 3
Well-being
Mary Gick

Organizational Chart
AIRS MCRI
Advancing Interdisciplinary Research in Singing
SSHRC Major Collaborative Research Initiative

Stakeholders
Stephen Cliff

Students/PE
A. Emberly
Arts Good

Partners
C. H. Elderkin
L. Willingham

1.1 Perception & Production
Laurel Trounson
Artistic Director

2.1 Natural Learning
Patricia Campbell

3.1 Cross-Cultural Understanding
Godfrey Bolduc
Elle Chen

1.2 Multimodal AV
Sandra Trelub
Frank Russo

2.2 Formal Vocal Training
Darryl Edwards

3.2 Intergenerational Understanding
Rachel Heydon

1.3 AIRS Test Battery
Annabel Cohen

2.3 Learning through singing
Andrea Rose
Jennifer Sullivan

3.3 Health
Jennifer Need
**Student Funding Policy.** AIRS initially proposed to distribute more than 50% of all funding to students who were helping to achieve the AIRS milestones via theses, special projects or assistantships. To this end, two policies were developed, one for student research funding and another for travel. The Student Funding Policy outlines an annual competition to which each sub-theme must submit at least one proposal, matching student capacity and interest with the milestone goals of the sub-theme for the coming year. Applications are reviewed by a 6-member committee with two representatives from each Theme.

**Travel Policy.** Through a travel award program, as the first priority, funds support at least one student presenter to the Annual Meeting from each of the 9 sub-themes, with additional funding made possible for other applicants, and a smaller amount reserved for students in the vicinity of the meeting who may travel by inexpensive means.

**Student Liaison Policy.** To facilitate linking with partners and stakeholders, AIRS proposed a model whereby students would liaise with the partner (or stakeholder), at the same time adding value to their academic experience through this real-world involvement. AIRS developed its successful student liaison policy (commented on in the 2008 SSHRC MCRI Review-Committee Report) which defines the role of the liaison and the partner (or the stakeholder as the case may be), spelling out the obligations and responsibilities as well as benefits.

**Other policies.** Several other policies have been developed: Acknowledgement to SSHRC and AIRS; requests for operating expenses, and finally, categories of affiliation with AIRS. The latter also includes procedures for applying for membership in AIRS as a collaborator, and it also enables collaborators to review their commitments to the AIRS MCRI collaboration. To keep the size of the collaboration manageable, new collaborators may only be admitted when previous collaborators resign, retire or leave for whatever reason.

**Progress with respect to the Milestone Document**

The Milestone Document outlined the goals for the 9 sub-themes and Digital Library, and it identified expected synergies. The following section details the progress of each sub-theme; the issue of synergies is considered in more detail in a subsequent section along with related progress on the AIRS Digital Library. The Milestone Document had an endpoint of September 30, 2012; the current report covers the period to June 30, 2012. The earlier endpoint allows a midterm review in August when many AIRS collaborators will participate in the 4th Annual Meeting at the University of Prince Edward Island.

**Theme 1 – Development of Singing**

A primary goal of Theme 1 is to fill the gap in knowledge about singing acquisition. Compared to thousands of publications on language acquisition and accessible data on which publications are based, there have been but a few hundred publications on the acquisition of singing (Cohen, 2011). Three sub-theme research teams are respectively focusing on the impact of perception on the ability to sing (Sub-theme 1), the additional involvement of the visual and motor modalities (Sub-theme 2), and the interrelation of many singing skills from memory through to creativity (Sub-theme 3). All three teams are based in prominent Canadian laboratories and benefit from the international expertise offered by the collaboration as well as the opportunities for validation in cross-cultural contexts.

**1.1 Perception and production.** After laying groundwork in Year 1, Theme 1.1 has invested the last two years in development of the Vocal Auditory Motor Developmental Assessment (VAMDA), a
behavioural assessment of singing perception and production for children aged 6 to 9 years of age.

Under the leadership of Laurel Trainor (McMaster University) and Christine Tsang (Western University), the project examines the development of singing as an integration of three domains: basic perceptual processing, motor mechanisms and cognition. Within the entire AIRS collaboration, theirs is the only sub-theme with a dedicated focus on matched auditory perception and song production tasks.

The V AMDA project involves researchers in Canada (Tsang, Trainor), France/Poland (Dalla Bella) and the UK (Stewart) testing components of the Sensorimotor Loop model of singing (Dalla Bella & Berkowska; 2009; Tsang, Friendly, & Trainor, 2011). V AMDA data collection has taken place in classrooms of Grade 1 children in Hamilton, and London, Ontario as well as one site in the UK. Data analysis is ongoing, with pitch analyses from the first year of data collection just completed and merged with year 1 perception and cognition data. Data collection continues in order to increase sample sizes at all age groups to better describe differences in singing over time. Dalla Bella and Tsang are meeting in Munich this July to prepare for the overall analysis of interactions between perception, production and cognition. Early analyses of perception and cognition data indicate that pitch perception is highly correlated with memory load and some intelligence factors (e.g., vocabulary); the relations to pitch production are now awaited.

Sub-theme 1.1 also includes several smaller research projects examining perception and action in singing, such as infant perception of song (Falk & Tsang), song perception and language impairment (Fancourt), vocal training in overcoming tone deafness (Anderson & Stewart) and fMRI brain imaging analysis of song production (Lévêque & Schon). Honours student Moira Shaw at UPEI attempted to replicate a study by Kessen et al. (1977), showing infants’ ability to match the pitch produced by a parent. Her results encourage further work. Yohana Lévêque, who presented at the AIRS annual meeting in 2010, is completing her doctorate at Aix-Marseille Université and will interact with Isabelle Peretz in Montreal this fall with the support of AIRS funding. Her supervisor, Daniel Schon, a major researcher in singing, was recently approved as a new AIRS collaborator.

The majority of the milestones of Sub-theme 1.1 have been met: a published literature review, collection of pilot data and test refinement. A workshop on pitch measurement in singing will take place at the 4th Annual Meeting. Brain imaging work has been conducted in the UK, Marseille and Ryerson laboratories. Comparative studies of human and songbird acquisition are ongoing, and the similarity between human folksong and avian song is highlighted in a recent paper co-authored by Frank Russo (Tierney et al., 2011) fostering the theory of motor origins of song structure. Leslie Phillmore, a songbird specialist at Dalhousie University, is receptive to receiving a student intern and is also arranging to visit Christine Tsang.

1.2 Multimodal analysis (visual, audio and motor). While Sub-theme 1.1 focuses on the auditory-vocal channel primarily, Sub-theme 1.2 adds the visual information arising from facial and body motion. This sub-theme has addressed two major goals. The first examines the coordination of movement between parents and infants in the context of infant-directed singing and speaking. Research has documented facial and body movement between parent and infant through audiovisual capture (Trehub), infants’ eye-movements (Haufl) and psychophysiological response (Russo). To further address the dynamic parent-infant interchange, acoustic analysis of mother’s songs and facial movement has been carried out. The role of mimicry in perception of emotional song has been examined using electromyographic recordings of facial muscles with adults as a basis for future studies with children (Russo).

The second goal of this sub-theme is to explore age-related changes in children’s
coordination of body movement while singing. To date, audiovisual recordings have been obtained of song imitations from children between the ages of 6-12. Samples have been gathered of body activity while singing at different ages. Future research will examine a broader range of ages and will capture performances aimed at conveying specific emotions.

The majority of the 1.2 milestones have been accomplished. First, novel methodologies have been developed. The first study of gaze behaviour in singing was reported by Russo, Sandstrom and Maksimowki (2011). Adults rated the size of musical intervals produced by two singers. A study by Petra Hauf revealed striking parallels in eye gaze behaviour of infants. Hauf and her students at St. Francis Xavier studied 6 month old infants measuring psychophysiological (eye-movements, heart rate and motor activity) on infant-directed singing and speaking of familiar and novel lyrics presented by a stranger. For singing, infants tended to gaze to both eyes and mouth, whereas for speech they gazed primarily at the mouth, suggesting singing may promote emotional engagement, while infant-directed speaking may facilitate information processing. In another new methodology examining audiovisual aspects of singing, AIRS Postdoctoral Fellow Steven Livingstone is developing a set of audiovisual recordings of emotional speech and song (Livingstone, Chan, & Russo, 2012). The collection (RAVDESS: Ryerson Audiovisual Database of Song and Speech) consists of 12 actors, speaking and singing short statements with 9 emotions at 2 intensities. It enables comparing responses to emotional speech and song, as well as testing theories of audiovisual integration underlying vocal perception and production.

In studies of singing and speaking to infants, Sandra Trehub’s team reports that mothers sing and talk more expressively when their infant is fully rather than partially visible, that visual aspects of infant-directed singing are especially compelling for infants, and that silent videos of infant-directed singing engage infants more than infant-directed speech. For infants, hummed lullabies do not have the compelling qualities of lullabies sung in typical fashion. Adults and children remember melodies better when sung rather than played on a musical instrument.

Mayumi Adachi (Hokkaido) is leading a multi-site study of parents’ categorization of babbling as speech or singing. In one study, a Japanese toddler’s vocalizations were recorded in response to toddler directed singing and speech. Responses of the toddler were then categorized by adults on a scale of more song-like to more speech-like. Japanese mothers, fathers, and college students, Chinese college students, Icelandic students (with Guðmundsdóttir in Iceland), and German mothers (with Falk) showed consensus that the toddler’s responses to singing were more song-like than responses to speech. However, detailed analyses of vocal cues used by Japanese and German mothers indicate cross-cultural differences, perhaps due to their native languages, in their use of vocal cues (Adachi & Falk, in press). As well Władysław Cichocki (UNB) and Sid Selouani (U de Moncton) have compared speech prosody across French dialects.

A final milestone of 1.2 involves the role of meaningful body movement and facial gesture in the performance of art song. Performance practice for art song tends to limit performer motion to the eyes! Challenging this tradition, Rena Sharon (Music, UBC) has been carrying out research with Russo and her UBC colleague (Vatikiotis-Bateson, Linguistics) on performer animation and audience reception, and data capture of audience and performer motor activities have taken place during the VISI (Vancouver International Song Institute) which Sharon leads.

1.3 AIRS Test Battery. The AIRS Test Battery is a collection of tests that track singing skills across age and cultures. It aims to measure independent and interdependent aspects of singing ability (e.g., memory for pitch, structure, or harmony relations; the relation between verbal and melodic production and creativity). Data have been collected in several contexts in PEI and Nova Scotia,
and other countries using language appropriate versions. A dozen undergraduate honours theses and two masters theses have been completed. Biannual videoconferences with the team and the Annual Meeting have led to improvements (e.g., the original vocal model, a piano sound, changed to a soprano voice, then to soprano, tenor, and child voices for which the pitch was adjusted for accurate tuning).

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<tr>
<td>Sing Brother John (if known) [training After #4]</td>
<td>Repeat native program &amp; 4-tone Phrase (Chinese)</td>
<td>Vocal Range</td>
<td>Minor third Sol-mi</td>
<td>Sing favourite song</td>
<td>Sing elements: Triads scales</td>
<td>Make up ending</td>
<td>Make up song to choice of 4 pictures (2x)</td>
<td>Sing Unfamiliar song We are one (2x)</td>
<td>Make up story</td>
<td>Sing Brother John again</td>
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From the perspective of children’s early communication/conversational skills and musical development, Mike Forrester and his students collected audio video data in the UK and are reviewing longitudinal studies of the development of children’s musicality. A study of 104 children in the UK (4 to 9 years of age) established: a developmental trend with age of size of the full vocal range, more imaginative spontaneous singing by older children, with girls exhibiting more creativity than boys, and variability in singing skills of the youngest children (4-6). Current work on 20 pre-school children examines performance with respect to presence of parents, degree of interactivity of the tester, use of puppets, and informality of the setting. Adult non-musicians may be better at reproducing tempo (for familiar songs) than musicians.

Helga Guðmundsdóttir in Iceland compared children in daycares with and without music and revealed interesting, unexpected differences between children with and without special music programs in terms of starting pitch, singing repertoire and invented song. Jaan Ross (Estonia) with Stephanie Stadler Elmer (Switzerland) supervising graduate student Marju Raju tested 43 Estonian children (4-8 years). A test with 26 children (ages 4-12) validated the Estonian adaptation of the test (Raju & Ross, 2012). In Brazil, Beatriz Ilari recorded children (4-10 years) in Curitiba and Campinas. She and her students have analyzed children’s favourite sung renditions and found both local and global issues. Now they are analyzing children’s renditions of the other components. At UPEI, studies with Chinese native and Canadian university students showed cultural influences particularly on memory for an unfamiliar song with lyrics. Performance on the creativity tests correlated with personality variables. Cross-sectional studies (age 4 to 87 years to date) are ongoing.

Bing-Yi Pan, UPEI AIRS Post-doctoral Fellow, developed an automated interactive version of the test battery that offers standardization across testers and eliminates variability associated with vocal or interpersonal skills of individual testers. A major breakthrough for AIRS, it enables data collection anywhere in the world with access to a webcam and a computer with Internet connectivity.

Approximately 100 participants have used the automated system in settings including a research laboratory, a daycare, and a nursing home. A French version is being piloted at Université de Moncton and will be used in a graduate thesis at Laval next year. Lisa McClellan, following a summer undergraduate internship with AIRS in 2009, returned to Bates College to complete her
thesis. She showed equal effectiveness of a videotaped versus live vocal model, validating use of a video model in the new automated version.

**Theme 2 Singing and Education**

The approach of Theme 1 to singing development across the lifespan might be regarded as reductionist. Theme 2 which is on Singing and Education has a more holistic approach. They are studying how singing is acquired naturally (sub-theme 2.1), what are the best formal practices in the studio and in the choral setting (2.2), and how can singing be employed for learning of other material (2.3).

2.1 Learning to sing informally. Patricia Campbell (University of Washington) directs Theme 2.1 whose goals include (1) reviewing the English-language literature on children's musical cultures, their songs, engagements, and the transmission-acquisition processes; (2) reviewing literature on pedagogical approaches globally; (3) compiling recordings of singers in various world contexts for use with children in schools; (4) developing content that feature children/youth and their heritage in songs. Activities pursuant with these goals meet Theme 2.1’s milestones for producing literatures reviews, developing methodologies for collecting video examples of children singing at play, accruing corpuses of children’s songs from several countries and with “Elders”. These deliverables provide the basis for theories of development of song repertoire for a culture or individual, and of interpretation of natural singing as play or emotional communication.

Research activities include: (1) an analysis of 55 children’s songs for musical and social structure, and the synthesis of curricular implications based on the results. (2) an ethnographic venture that collected and analyzed children’s songs of the Wagogo culture of central Tanzania. (3) an examination of Internet-based resources of children’s songs/singing styles that pay special attention to five principal sites including Smithsonian Folkways and The Archival Sound Recordings of the British Library. Results include transcriptions of songs from these sites and a musical and topical classification based on song features. (4) a study of the singing, musical systems and transmission methods among Mixtec-speaking migrant workers in a Pacific Northwest community that sheds light on the impact of diaspora on song traditions and songs that are preserved, adapted, abandoned, or invented anew (connected to 3.1’s resilience and song change). (5) a review and analysis of Icelandic song focused on children’s repertoire and rimur, an historic elders’ genre. Helga Rut Guðmundsdóttir also collected examples of children’s singing in Iceland in a natural setting. Beatriz Ilari has been working with students to document and analyze previously undocumented traditional Brazilian children’s singing practices such as maracatus and folia songs. June Countryman and Martha Gabriel have been collecting songs and examples of singing and playground behaviours in Prince Edward Island and Grenadine Islands.

2.2 Formal training of singing. Darryl Edwards (University of Toronto) leads a program of research on formal training of solo and choral singers in different settings and cultures. This work is contributing to (1) a review of voice and choral pedagogy with audio-visual resources (Edwards, Carol Beynon and student Jason Noble) (2) an overview of live and recorded performances in which performers require formal vocal training. (3) creation of a database of audio-visual recordings of instructional situations (voice lessons and choral rehearsals). Recordings are being accumulated in London, Ontario, Toronto, and PEI as well as through a summer Opera workshop in Italy (4) Empirical studies that investigate best practices for teaching sequences; electronic technology and concrete materials associated with best practices); interpersonal markers between
instructor and singer(s); development in formally trained singers over time; and universal, culture-
specific, or idiosyncratic singing and teaching styles. Jane Ginsborg of Royal Northern College of
Music (Manchester) has been investigating preparation and spontaneity in performance,
intelligibility of sung text, and singer’s long term recall of words and music of songs. Liliya
Nafikova, from the Ukraine, the year 4 AIRS Postdoctoral fellow working with Carol Beynon, will
be collecting data on choral pedagogy, particularly with a focus on the the solfège approach. A
literature review on vocalization by instrumentalists in learning instrumental repertoire focused on
singing as a technique utilized by instrumentalists in pedagogical practice (Chessin).

2.3 Teaching through singing. Andrea Rose (Memorial University) and Jennifer Sullivan (now
Western University) lead a program of research focusing on teaching and learning through singing
and song in varied formal, informal and online contexts of education. Research areas include (1) a
review of literature on the use of singing and song in the teaching and learning of both music and
non-music concepts, skills, perceptions and attitudes; (2) an examination of e-contexts of K-12
music education and singing as a medium for teaching and learning – specifically a case study of
current and evolving e-music programmes in Newfoundland and Labrador through the Centre for
Distance Learning and Innovation (Rose); (3) an examination of male singing practices and
developmental trends in the choral/educational context – a case study with the Amabile Choir,
London, Ontario (Beynon); (4) a study of elementary student attitudes toward singing, the role of
repertoire choice and teachers' perceptions of issues surrounding classroom singing – a case study at
UPEI of music education students and local music teachers (Countryman) (5) a study of teaching
vocabulary in school-aged children and language development through singing (Sullivan); (6) an
examination of the use of singing to learn second or other foreign language perception and
production of pronunciation, vocabulary, and grammar (Lempert, Henrich); and (7) a study that will
test effects of singing skill acquisition on broader academic skill learning (Gardner).

In addressing specific milestones, June Countryman (Music, UPEI) and Martha Gabriel
(Education, UPEI) reviewed the literature on use of singing to teach curricula, basic skills, and
behaviour. Andrea Rose has commenced empirical studies of e-contexts for teaching music in the
K-12 curriculum, and this work also overlaps with that of sub-theme 2.2 with specific reference to
the use of computer and electronic means to teach voice. Postdoctoral studies by Utpola Borah
have examined the teaching of Indian vocal music by use of Skype. Countryman and Gabriel have
engaged in studying elementary student attitudes toward singing and teacher’s perception of issues
surrounding classroom singing.

In applying singing to teaching aspects of language and literacy Jennifer Sullivan found that
in teaching vocabulary to pre-school children, singing resulted in more words learned than listening
to storybooks. Sullivan and Russo, supervising Arla Good, found that Ecuadorian children learned
more English words when practicing singing than speaking (Good, Russo & Sullivan, 2011).
Henrietta Lempert (University of Toronto) has been testing whether singing could improve second
language acquisition in adults. Preliminary findings suggest hearing the language in songs rather
than prose significantly aided learning novel words and grammar when phrases are marked by
articles. Data collection in this study is ongoing. However, preliminary results have been presented
at meetings of the Society for Research in Child Development, 2011 and Canadian Society for
Brain, Behavior, and Cognitive Science, 2012. Natalie Henrich - (CNRS - Grenoble) is testing the
applicability of singing exercises for improving second-language acquisition, and investigating the
differences between speech and singing in vowel perception. Martin Gardiner (Brown University)
has studied the effect of Kodaly training on math and language arts, and compared regional
differences in standardized academic testing where singing education is or is not delivered. His work now extends to pre-schools.

**Theme 3. Singing and Well-being**

An overwhelming amount of anecdotal evidence suggests that singing improves lives, but there is scant empirical evidence to support the claim that singing contributes to well-being. Theme 3 investigates singing as an intervention.

**3.1 Singing and multicultural understanding** Under the leadership of Godfrey Baldacchino (UPEI) and Lily Chen-Hafteck (Kean University), Sub-theme 3.1 examined singing in the promotion of cross-cultural understanding. Four projects have been undertaken in accordance with the Milestone document:

1. Félix Neto successfully replicated and extended an earlier study (Sousa, Neto, & Mullet, 2005) that had investigated the benefits of a 3-month classroom singing intervention in Portugal showing improved attitudes of children toward the Cape Verde minority.

2. In the QuadCultural Songbook project, related to the work of Neto, 5th grade children in Canada, Kenya, China and Brazil are provided with four two-to-three-week music-cultural modules from each of the four countries. An educational package has been developed for teachers. It includes a songbook with songs and cultural information developed for teachers, along with video recordings of the native children demonstrating how the songs are sung and power point educational materials. Control and experimental groups have been tested in each country (Total = 439: 239 experimental; 200 control). The program has been completed in two different schools in all four countries. The data consist of questionnaires about attitudes to children from the different countries and to the songs; video recordings of the children learning the songs; and interviews with teachers and children. The preliminary analysis will be discussed in a workshop at the Annual Meeting.

3. A collaborative study on song resilience and song change was recently launched by Steven Brown (McMaster) and Godfrey Baldacchino. Brown has developed new measures of song change called the Cantecore system, and Baldacchino is an expert (CRC) in Island Studies. Islands provide valuable case studies because of their isolated conditions. A videoconference workshop on Song Resilience incorporated additional colleagues. The working group plans to move forward with theory development over the remainder of the grant. Baldacchino edited the book *Island Songs* (2011), and is planning a follow-up volume on song resilience.

4. UPEI has established a multicultural university choir. Building on pedagogical research the protocol uses a song-circle approach without a formal leader. Participants bring songs from their culture. The choir has performed on three occasions. Next year, research will gather attitudes to participation, and the protocol will be shared with other universities. Related to this, Ben Bolden and Larry O’Farrell (UNESCO Chair in Arts & Learning, Queen’s) are studying the impact of a...
culture-bearer (non-native choir director) on the intercultural understanding of members of an adult community choir in a case study.

3.2 Intergenerational understanding Led by Rachel Heydon (Western University) with Carol Beynon (Western), and Susan O’Neill (Simon Fraser) the multi-phase project entails interrelated program development and research components and trains students in and through all activities. Program goals include development of intergenerational (IG) singing curricula that can facilitate wellbeing through the production of expansive communication and identity options and relationship building between skipped generations. The team is producing a handbook for instituting programs in IG contexts entitled *Hands, hearts, and voices together: Multimodal curricula to promote intergenerational singing*. It will contain chapters that review IG Learning Programs; Relationships, Generativity and Wellness in the Program; Setting up the Program; and The Curriculum.

The program has now been piloted in one co-located school and retirement home. A new site will include digital technology to enhance IG contact and multimodal learning, and promises to bring new partners (e.g., a separate school board) and Jennifer Rowsell, CRC in multiliteracies as collaborator.

Phase one of this investigation involved two studies. Results from the first study show the need to further develop IG curricula, disseminate findings and enlist new organizations into IG programming. The survey and interview protocol developed for this study may be applied in other geographic locales (e.g., Heydon, Beynon, O’Neill, Crocker, Zhang, submitted). An interview protocol was designed to document the extent to which IG singing programs promote a sense of generativity in adults. Findings highlight the potentials of the curriculum to create learning opportunities for multimodal expressions through dialogic interchanges and the influence of multimodal learning in the ways children and elders negotiate different communicative decisions. (e.g., O’Neill, & Heydon, 2011)

In phase two, IG singing curricula were implemented and the effects evaluated. Findings concern how an emphasis on multimodality helped to support singing. Selection of song repertoire built on participants’ interests and knowledge. The curriculum facilitated meaningful communication among participants and created opportunities for learning and practice (e.g., Beynon, Heydon, O’Neill, Crocker, & Loerts, 2011). The same curriculum was implemented with school-aged children at an Ontario site that had no previous IG programming (e.g., Beynon, Hutchison, Heydon, & O’Neill, 2012).

3.3 Singing and Health Focusing on mental and physical health, Jennifer Nicol (University of Saskatchewan) leads Theme 3.3 in examining (1) the relative advantage of active versus passive singing in homes for seniors; (2) a grounded theory explaining choir members’ understanding of singing as a health promoting activity; (3) the role that singing can play in enjoyable breathing exercises for chronic and/or terminal lung disease; (4) the role of singing in high school retention, where education has direct health benefits; (5) the benefits of singing for language rehabilitation of stroke victims; (6) the role of singing in Alzheimer’s disease and normal aging; and (7) the role of singing lessons in later life.

In meeting the sub-theme’s milestones, the team published two reviews (Gick, 2011; Clift, Nicol et al., 2010). Jean Emmerson is conducting her dissertation on a singing program to assist high school retention. She published a literature review on music, youth identity formation and value of music education in schools. Elisabetta Corvo, supervised by Stephen Clift in the UK will be hosted by Jennifer Nicol in Saskatchewan to extend the Sing for Your Life Singing Clubs to
Canada. Different singing programs for persons with lung disease are being developed by pulmonary physician Dr. Janice Richman-Eisenstat in Alberta (formerly Winnipeg) and Steven Clift (UK), and a practicum is taking place in Ottawa for COPD and singing. Sally Busch and Mary Gick (2012) published an article on choral singing and well-being. Theses in progress include: Marya Stonehouse at University of Saskatchewan on integrative choirs—singing and youth with disabilities; Carina Daugherty at Carleton on Asthma and Singing, and Marieke Blom (Saskatchewan) on Community Parent-Infant Singing Programs. An on-line survey conducted in the US and Canada with respondents who began private singing lessons after the age of 40 years shows clear benefits of such mid- and later-life opportunities (Cohen & Kleinerman, 2010).

Cross-fertilization among themes

The scope of the AIRS MCRI provides a rare opportunity to understand and exploit data on singing from many perspectives. Each sub-theme and theme meets through UPEI’s videoconference hub. In Year 3, in addition, three “synergy meetings” took place to discuss overlapping interests among themes, developing closer ties among themes and providing a working document (minutes) on which to build research plans. Funding has been allocated to student-assisted projects that build on synergistic activities. For example, noted in the Theme 3 meeting, body movement is an indicator of well-being. These movements are evident in videos associated with Theme 3 (singing in residential care facilities) but may likewise be found in videos of natural singing, vocal pedagogy, or using singing to teach, (such as associated with Sub-themes 2.1, 2.2, & 2.3) and singing development (particularly 1.2 with a focus on multimodal aspects of singing). Movement analysis of audiovisual data collected across the three themes may help define universal motion – emotion connections possibly overlooked in the research on singing.

The new tests of singing developed by Theme 1 (i.e., V AMDA, RA VDESS, AIRS Test Battery) provide data of interest to other themes. For example, the AIRS Test Battery has informed Jenny Sullivan’s Theme 2.3 longitudinal study of effects of singing on vocabulary acquisition. Across Theme 3, common challenges face 3.1 in forming the cross-cultural choir, 3.2 in encouraging intergenerational singing activities, and 3.3 in forming choirs for seniors or persons with particular disabilities. Shared solutions to such challenges may facilitate progress across the sub-themes. The entire AIRS team collaborates on some projects together, for example, a book series. Abstracts and biographies are being collected now for the prospectus. New collaborations across themes have formed over the three years. Student cross-theme opportunities are documented in the section on students.

AIRS Digital Library and Website. The digital library and website (www.airsplace.ca) foster synergies across disciplines and among researchers. As the 4th theme, the AIRS Digital Library project addresses head-on the challenges of sharing research materials, results, expertise and data among AIRS collaborators, primarily through the development of the web-accessible AIRS Digital Library (DL). AIRS contributes to a comprehensive understanding of the singing voice by employing interdisciplinary approaches to research. By gathering resources across fields of study, the DL assists researchers in acquiring relevant materials and data, providing a foundation for analysis and developing new studies.

Devising protocols for collecting sharable data is one contribution of the DL. One example of a sharable data set is the AIRS Test Battery Data (Theme 1.3). With the AIRS Test Battery, AIRS has amassed hundreds of examples of singers of different ages from different countries, and the number of samples is expected to rise exponentially over the coming year. The automated version
indexes 19 separate segments for each participant saved on a remote server for quick downloading.

Over 1500 records now exist, and this number will grow exponentially. AIRS will produce other valuable data sets shareable at least for research purposes (e.g., singing naturally, studio lessons and practice, choral rehearsals and performance, multicultural teaching examples, etc.).

Regarding specific milestones, a survey of digital libraries for music and singing was conducted.

Nyssim Lefford analyzed examples for functionality and interface design, and Polina Proutskova (2012) wrote a literature review. Lefford conducted a formal survey of needs and use assessments of researchers, following up less formal surveys in prior years. Findings led to the development of two prototypes: the Drupal Based version 1.0, and version 2.0 with advanced search functionality. Simultaneously, an application was developed by Bing-Yi Pan for archiving and searching corpuses. Digital Library team members meet via teleconference to discuss features, workflow, documentation and policy. Team members include Ichiro Fujinaga, George Tzanatakis, and Theresa Leonard. The Annual meetings provide workshops on the DL for purposes of demonstration and feedback.

The AIRS Digital library benefits from partnership with the UPEI Robertson Library, a leader in digital services. Donald Moses, Digital Initiatives and Systems Librarian with Robertson Library, has served as the primary liaison collaborator. Student Jonathan Lane, currently completing a degree in computer science, has been coordinating development efforts.

Dissemination

The plan for dissemination is unfolding well in both academic and non-academic directions. The following lists shows first the expectation by 42 months, then the actual total at 39 months (bold): Review articles (15:4–others in progress); Workshops (14:15); Recordings (4:6); Presentations (41:107); Symposia Organized (11:11); Proceedings Papers (15:11); Articles (31:43); Book Chapters (19:13); Books (2:1 + 1 in press) Edited Volumes (6:2); Choirs (2:1); Festivals (2:3 public concerts); Games (3:1). There are at least 2 Ph.D., and 6 MA theses completed or in progress, and 18 undergraduate theses completed. Highlights include Island Songs, a book edited by CRC Island Studies Godfrey Baldacchino (2011), a special issue “Perspectives on Singing” edited by Larry O’Farrell (2010) of the UNESCO Observatory e-Journal Multi-Disciplinary Research in the Arts, and a special 270 page double issue, edited by Annabel Cohen and Sandra Trehub, on Singing and Psychomusicology for Psychomusicology: Music, Mind & Brain, with 18 AIRS researchers contributing. Published by the American Psychological Association, the articles are widely available electronically, as well as in print.

Annual meetings have brought together 50 to 60 AIRS researchers (~50% students) in an intensive, exciting research overview, with singing performance and participation woven into the programme. A UNESCO sponsored symposium organized by Annabel Cohen and Andrea Rose opened the biennial Phenomen of Singing Symposium at Memorial University in 2009, and an AIRS symposium took place the final afternoon, 2011. Symposia have been presented at many international meetings such as ISME 2010, 2012; ISIS, 2011 (assisted by Darryl Edwards); and CPA 2012. The Director has organized such sessions, and also encouraged collaborators Chen-Hafteck, Heydon, O’Farrell, Rose, Russo, and Sullivan. Community partnerships provide non-academic opportunities for dissemination, described in the section on Partners.

AIRS Student training

Training opportunities for students are a priority for AIRS, with more than half the budget
dedicated to them. While over 100 students have received funding from AIRS, other students have benefitted from the project without direct funding. Undergraduates, for example, conduct honours theses unpaid. Students from Switzerland, Maine, and Michigan have held summer internships in Canada enabling them to receive course credit from their home institution, some returning home to complete their honours theses using data acquired in the summer. By means of the student funding competition, compensation in general ranges between $1000 - $5000 for research work focusing on the goals of AIRS. Specific competitions may arise for work on special topics, or visiting internships to facilities that offer special opportunities (e.g., birdsong, fMRI laboratories, and pan-provincial or cross-cultural exchanges).

Dr. Steven Livingston received the AIRS Year 3 Postdoctoral Fellowship to work with Frank Russo (1.2); Dr. Liliya Nafikova received the award in Year 4 to work with Carol Beynon (2.2). This position is distinct from the ongoing postdoctoral position at the AIRS UPEI hub. To this end, Dr. Anick Lamarche in the summer of 2010, managed a group of visiting student interns and advanced work on the AIRS Test Battery, and since 2011, Dr. Bing-Yi Pan, has contributed to all themes: automating the AIRS Test Battery and serving in an active role for 1.3 activities internationally and at home, analysing voice-lesson effects on voice quality for Theme 2, and contributing to the Chinese portion of the Quadracultural Songbook (3.1). For the AIRS International choir he is assisting in the development of the handbook. Dr. Nyssim Lefford at UPEI prior to her Faculty appointment in Sweden has assisted greatly with the AIRS Digital library and has also been integrating two diverse fields of evolutionary biology and developmental psychology within the arena of production of vocal recordings. Other postdoctoral students have been engaged with AIRS, and belong to the AIRS Student and Early Career Researcher Group.

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<tr>
<th>Theme</th>
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<td>2 1 11 14</td>
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<td>1.2</td>
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<td>Total</td>
<td>58 61 31 150</td>
<td>74 47 60 181</td>
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Travel awards from the separate student travel budget enabled students to present their work at the annual AIRS meeting. Students have been encouraged to publish or co-publish their work. Student presentation awards aim both to maintain high standards of presentation and to expose student work to the broad range of AIRS expert faculty researchers. Students have opportunities for exchanges across the AIRS network, enhancing exposure to experts, techniques, technology, issues, and cultures.

Students have been involved in all levels and stages of this research project, from pilot testing individuals, to data analysis and dissemination of research results in scholarly papers and conference presentations. A few examples must suffice. Students in 1.1 have developed skills working with children in a school setting and one-on-one in a laboratory setting using a range of music, language and cognitive assessments. Students in Hauf’s laboratory (1.2) are instructed and trained to prepare video stimuli suitable for presentation with an eyetracker. They also learn how to create and run a new study and how to analyze the gaze data with specialized software (Tobii Studio eyetracker, Biopac for the heart rate, and Interact for the motor activity). Further training
experiences incorporate writing ethics applications, designing posters for conferences, and conference presentations. Working with the Test Battery (1.3) gives students an opportunity to learn to contribute to empirical research in different levels, starting with development of methodology, planning and executing the test procedures, analyzing data, and finalizing the results in the form of articles and presentations. AIRS is quite unique in this sense, as students have a chance to not only develop research skills, access new technologies, and present and publish their work, but also benefit from interactions and networking with some of the most important scholars in the field. In 3.2 students engage with a multi-phase program and curriculum development and research, fieldwork, data analysis, IG learning and singing phenomena, interdisciplinary research (including singing performance, psychology of music, curriculum studies), preparation of manuscripts for publication and presentation, involvement in AIRS network. Theme 3 Leader Mary Gick writes “Students at Carleton University and the University of Saskatchewan have benefitted significantly from the AIRS project. Master’s student Sally Busch would likely not be an MA student at Carleton University in Ottawa without AIRS. When Sally discovered my AIRS affiliation on my Carleton faculty website… she changed her graduate study plans to come to Carleton to study singing with me.” Katie McCaw, Marya Stonehouse, and Jean Emmerson (Saskatchewan) have benefitted from opportunities to interact with international colleagues, attend stimulating annual meetings, participate in teleconferences, pursue research in a topic of personal interest, meet students with shared interests, and acquire experiences that advance scholarship in terms of presenting conference posters/oral presentations. Katie and Marya were featured in a College newsletter article (p. 2) “Singing Research takes Graduate Students to Newfoundland”.

**Partnerships**

Partnerships identified in the original proposal fall into three clusters--the music and culture industries, well-being and aging, and finally, technologies.

**Arts and Culture Partners**

The *Confederation Centre for the Arts* provided space, facilities and in-house resources, for past AIRS workshop events, (e.g., master class with Jeffrey Huard, and an AIRS “Through Voices we Unite” Concert). Anne Allen, Director of the Charlottetown Festival, participated in the AIRS Research Workshop itself, at UPEI. The Centre connects AIRS with giants in vocal performance and enables educating the public about the AIRS research findings in singing. The *East Coast Music Association (ECMA)* has provided AIRS with exhibitor space and access to conference delegates for an original AIRS game entitled ‘Melody on the Spot’ arising out of the AIRS Test Battery. Judges from the music industry also co-operate. *Music PEI* extended its initial two year commitment. Executive Director Rob Oakie has provided AIRS with access to its mailing list and advertising opportunities, the opportunity of interviewing songwriters at weekly performances, and access to its lists of performers in the province enabling AIRS to separate the role, appeal and value of singing from music in general. Mike Speelman, the AIRS student liaison has space in their Charlottetown office as needed. *Culture PEI – formerly PEI Cultural Human Resources Sector Council* is currently working with Yuling Chen (student liaison) to co-author, publicize and disseminate a joint report on the role of singing in the lives of newcomers to PEI. In addition, AIRS has access to this partner’s distribution list. Henk van Leeuwen, the CEO, has attended meetings with AIRS Management, and spoken at the AIRS Annual Meeting.
**Well-being and development Partners**

The Alzheimer Society of PEI has provided training and access to research participants, leading to an honours thesis, and continuing research in 2012. Corrine Hendricken-Eldershaw attends AIRS meetings, and the AIRS Director and Project Manager have spoken at Alzheimer events. Joint grant application has been discussed. The Grand Avenue Children’s Centre in London, ON and its associated co-located facility for seniors has provided the facility and coordinators for the initial implementation of the intergenerational singing curriculum, thus enabling the IG research project, under the leadership of Rachel Heydon. The Laurier Centre for Music in the Community remains a partner with the AIRS Project in shared research on value of singing to communities, and in communication, and dissemination of study results. Director Lee Willingham attends AIRS Policy and Planning meetings and connected with AIRS at the 3rd Annual meeting in Newfoundland and more recently at the Music Care Conference in Fredericton, last month. Soloway Jewish Community Centre in Ottawa reconfirmed its partnership for the intergenerational singing study, and AIRS is seeking a student liaison to work with them in Year 4, when the IG singing handbook is available. Young at Heart Musical Theatre for Seniors (YAH) and AIRS realized a plan through two honours theses on the impact of the YAH company’s live shows in the senior residences. Highlighted on CBC National, the study focused on the value of the performers inviting the audience members to sing. Results on memory, well-being and video evidence of singing was of value to both AIRS and YAH. The YAH Executive Director, Catherine O’Brien, looks forward to continuing the partnership with future research students. Denise Beaton, student liaison with Veterans Affairs Canada (VAC) is creating a compilation of references to music, song and singing from the Heroes Remembers collection of 2,500 hours of video and audio conversations with Veterans from the wars of the 20th century. Plans are also to meet with long term care residence managers and activity coordinators where veterans live with the idea of researching how to tailor music and singing activities for the Veterans. Dr. David Pedlar, VAC Director of Research, has regularly participated in the Annual AIRS Regional Workshop. He has introduced to Denise and AIRS, Darragh Mogan (former VAC director general of policy and research and current director of the VAC Canada Remembers Chorus).

**Technology Partners**

AIRS Management Team is working with Apple Canada to determine the best timing and optimal use of committed funds ($10,000) during the second half of the project, looking for additional opportunities to grow the partnership, given the link between the iPod and singing, and recent use of the iPod in therapy for dementia. Extemporal, a small language software company, has attended AIRS regional meetings and also presented seminars on its technology for pronunciation training.

**Stakeholders**

AIRS has less formal relations with most of its many stakeholders, however, the Society for Music Perception and Cognition sanctioned the position of an AIRS – SMPC student liaison (Rena Friendly) at its 2011 meeting, in time to prepare joint activity for the Toronto biennial meeting, Aug. 2013, chaired by Frank Russo (Leader Theme 1). Sally Busch of Carleton University served as student liaison with the Canadian Psychological Association, and reported the AIRS Annual meeting in Mindpad, the CPA student section peer-review newsletter.
Institutional Support

UPEI has provided generous support for AIRS, and we expect continued commitment as outlined in the original proposal. The Dean of Arts, Dr. Don Desserud, has expressed his commitment in principle to enabling the Director to see the project through to its 7-year completion. President Alaa Abd-El-Aziz strongly supports the University’s research mandate. We are confident that Dr. Robert Gilmour Jr., the incoming Vice President of Research, will appreciate the scope of the AIRS project and the importance of continuing support. The following cash and in-kind support has been provided.

Cash support:
The office of the Vice-President of Research committed $10,000 per annum for project years 2 through 6, for a total of $50,000. To date, $30,000 has been received as promised. These funds support AIRS on-campus and local activities, AIRS equipment at UPEI, student funding opportunities for UPEI students or for PEI initiatives beyond that provided in the SSHRC budget.

In-kind support:
**AIRS Work Space.** UPEI provides the primary AIRS Project workspace in the 1800 square foot CMTC multi-media research laboratory with dedicated on-site videoconferencing capabilities. An additional technical workspace is set up in Dalton Hall and is currently used for AIRS Test Battery development testing or training.

**AIRS Online Presence and Technical Support.** Robertson Library currently provides the IT infrastructure for the AIRS project and hosts the AIRS Virtual Research Environment (VRE). Beyond these services, however, Robertson remains engaged in the design and implementation of the AIRS DL, contributes library science expertise to our design process, makes available additional IT support and VRE functionality, and provides dedicated server space for application development. Since the AIRS project’s inception, the library has invested heavily in a digital asset management called Islandora, and Robertson Library continues to investigate Islandora solutions for the AIRS DL. Support for the AIRS technical infrastructure is provided through IT Services and includes maintenance, backup and trouble-shooting services. IT also assists with the order and purchase of computer equipment.

**Administrative and Managerial Support.** To support the administrative and management efforts of the AIRS staff, the following departments have committed to and provided in-kind support throughout the first three years of the AIRS Project. The Accounting Department supports the AIRS staff with the timely processing of all invoices throughout the project year. They provide guidance on account management and coding, and through their accounting system, provide reports for budget management.

**Research Services** (previously Office of Research and Development) provided significant resource support in the initial phases of the project. They provide contract administration each year and are available for consultation on all research-related project issues, including matters of research ethics. The Psychology Department provides technical and secretarial support to assist the Project Director and Project Manager with the daily management of the project.

**Conferences and promotion.** The University has committed space and equipment to the AIRS Project. Use of facilities in the past has included space for regional workshops and the AIRS Inaugural Meeting. This commitment will include contribution to the 4th Annual AIRS Meeting in
August of 2012. UPEI has committed to support advertising and promotion. The UPEI web site, newsletters and campus email are used, and will continue to be used regularly to promote activities and events of the AIRS Project.

Unforeseen Circumstances

A large network of researchers and their students creates a great management challenge. For 10 months of the 39 months of operation, the project was without a project manager—for its first 6 months, and then months 30 to 33, when the Project Manager moved on. The Director assumed managerial duties during these hiring periods, with some student assistance. The matter is happily resolved with an excellent staffing plan in place, including backup in the event of sudden departure. Funding to sub-theme 2.2 was delayed for complex reasons, however this is now on track, and the sub-theme is poised to move forward, especially with the added strength of Liliya Nafikova, the new full-time AIRS postdoctoral fellow. Toronto School Board Ethics prevented carrying out a procedure (provision of certain questionnaire items). The project went ahead, knowing that some data will be missing from the multinational study. In another province, for the same study, the school board banned any use of classes for this purpose for the year, due to restructuring. A private school participated instead, leading to an adequate though smaller sample than desired. It is believed that the previous ban is indeed temporary.

Future Directions

Creation of the next milestone document is the priority, for discussion at the Annual Meeting. Most new milestones will extend previous ones, with new synergistic and consolidating initiatives. Drawing on the entire collaboration is a book series, a volume for each theme (development, education, and well-being), with sections edited by sub-theme leaders. This series will include theoretical integrative articles on singing acquisition; comparisons of singing and language with a focus on gesture and audiovisual integration, and a theory of song change. Abstracts and biographies are now arriving, and the Annual Meeting provides opportunity for discussion the prospectus and securing a prestigious publisher.

Continuing dissemination through special journal issues is expected, e.g., Lola Cuddy (Editor, *Music Perception*) has recently invited the Project Director to propose a special issue, and participants in the symposium on new singing test instruments are interested in following up; Rachel Heydon (Editor, *Language and Literacy*) and her co-editors are welcoming a special issue on language, literacy and singing with guest editor Zheng Zhang, a new faculty member of the Canadian University of Hong Kong, and previous assistant for AIRS Research at Western University). Handbooks for Intergenerational Singing Programs, Multicultural Choirs, and Cross-cultural Singing School Curricula are in progress and expect to have a wide practical impact when used in seniors’ homes, universities, and public schools respectively. A textbook to support advanced new specialty courses in the Psychology of Singing is planned. The public face of the AIRS web-site will be the go-to site for information about singing research, while the Digital Library is expected to revolutionize research in singing. Game development is also underway connecting well with Sub-theme 2.3.

The new test instruments, V AMDA, RAVDASS, and the AIRS Test Battery, will be further developed. In the case of the AIRS Test Battery, in addition to standardizing the delivery, procedures will be standardized for analysis where possible, leading to an immediate score, and enabling inter-relations among components and clusters of skills to emerge.

With research findings and theory in hand, efforts will be made to engage policy makers in
the fields of culture, education, healthcare, international relations, and veterans affairs regarding the implementation of programs involving singing. We expect some exciting developments in the common goal of managing digital assets with the help and consultation of the UPEI Library, and the AIRS scholars. With partners such as Music PEI, Culture PEI, and ECMA, we expect to jointly conduct a study on the economic impact of singing as opposed to music in general in PEI, as a model for other provincial endeavours. In YEAR 7, the 7th AIRS international conference on singing research and a vocal festival will take place.

Financial information

Each year AIRS apportions student funding at least to the amount specified in the original budget through the student funding competition. To date, the overall project budget has been underspent by approximately $94K primarily due to a surplus in allocation for equipment and supplies. Year 4 spending for equipment and supplies is expected to increase and reduce the project surplus to an estimated $80,000 by end of Year 4. The revised budget distributes Year 4 surplus across students and staff in the successive years. There is a declining budget with Years 5, 6, and winding down to Year 7, however, the possibility of seeking additional funding to support certain initiatives is a goal. The current proposed budget will support the proposed activities for the completion of the grant.

Page 20 shows in the left column, the proposed and spent budget for Years 1 to 4 for all categories of spending, except RTS. The pie charts show the total proposed and spent budget for all 4 years combined (Year 4 projected). The bottom panels also include the remaining Years 5 to 7. Note: The AIRS budget has been reconciled to actual values up to and including June 30, 2012, and has been provided to UPEI's Research Services Department to validate the accuracy of SSHRC Form 300 submitted for project years 1 and 2.

Final remarks

The outstanding AIRS MCRI interdisciplinary team has laid the foundations for addressing how singing develops, how we should teach singing and use singing to teach, and how singing impacts well-being. The research has advanced understanding of cultural, universal, and idiosyncratic influences on singing, and has increased awareness of the power and complexity of singing. In the remaining years, AIRS will add to our new knowledge, consolidate, and disseminate findings, and confirm their value for society.
Membership in AIRS – Policy on Membership

AIRS is a Major Collaborative Research Initiative that was proposed by a Project Leader, approximately 45 Co-investigators, 30 Collaborators, 12 partners, and 20 Stakeholders. The following document defines the different membership categories and roles. * refers to wording from SSHRC sources ** refers to wording from the AIRS Milestone Document.

Collaboration - is defined as an ongoing, active and integrated working relationship among the members of a broadly-based team of researchers, each of whom brings different perspectives to complex research questions requiring long-term funding.*

Project director/principal investigator: Has primary responsibility for the intellectual direction of the research or research-related activity, and assumes administrative responsibility for the grant. In the case of teams or formal partnerships, the principal investigator / project director is understood to be responsible for the overall leadership of the team or partnership.* She is responsible for the integration of the program’s components. She will usually participate in the organization of workshops and conferences, lead or chair team meetings, and encourage collaboration across projects. She may also lead a sub-theme, in particular one which connects with most of the other sub-themes.**

Co-applicant (co-investigator): An individual, participating in a grant application, who makes a significant contribution to the intellectual direction of the research or research-related activity, who plays a significant role in the conduct of the research or research-related activity, and who may also have some responsibility for financial aspects of the research.*

Collaborator: An individual, participating in a grant application, who may make a significant contribution to the intellectual direction of the research or research-related activity, and who may play a significant role in the conduct of the research or research-related activity. Collaborators do not need to be affiliated with a Canadian postsecondary institution. With the exception of certain travel- and subsistence-related expenses, SSHRC does not cover expenses that research collaborators incur in the conduct of research or research-related activity.*

Partner: A partner is an organization that participates actively in a formal partnership and contributes in a meaningful way to the success of the endeavor. A partner organization may be, for example, a Canadian or foreign: postsecondary institution, government department (federal, provincial, territorial, municipal), for-profit or not-for-profit organization, or foundation. Partner organizations are required, for administrative purposes, to identify an individual who will act as a contact person. A partner is expected to support the activities of the formal partnership by sharing in intellectual leadership or providing expertise. The partner is also expected to provide cash and/or in-kind contributions.*

Stakeholders: Representatives of organizations that have expressed interests in the activities of AIRS. These stakeholder groups include provincial, national, or international associations of music teachers, choral leaders, choirs, researchers in music and psychology, aesthetics, and in other aspects of human behavior such as development and cross-cultural.**

Student: Is enrolled in a University degree program and has an academic/research interest in AIRS. Students may be financially supported as research assistants, or through travel awards, or through
support of operations and needed equipment, and through access to the AIRS research network and research resources. The question arises as to whether students who do not have supervisors who are AIRS co-investigators or collaborators can be supported by AIRS. Students must have a formal connection to an AIRS collaborator, often a Theme or Sub-Theme leader. While not every student may be accommodated, those students with genuine interest and talent in this area are welcomed to the collaboration.

**Postdoctoral Fellow:** Has received a doctoral degree and has successfully competed for the position as an AIRS Postdoctoral Fellow. The work of the Fellow is directed toward the AIRS milestones under the supervision of the AIRS Project Director, Co-investigator, or Collaborator. Only those with Canadian citizenship may hold this position at an institution outside of Canada.

**The AIRS Advisory Board:** Members have administrative experience and academic excellence such as to provide good counsel and feedback to the AIRS team in terms of research, collaboration, integration, training, dissemination and large-scale project management. The Advisory Board will meet twice annually and will receive an AIRS annual report from the AIRS steering committee and will provide external accountability. Their meeting minutes will be made available to SSHRC.

**Advisory Board adjunct member:** A person highly qualified in both research and administration who will offer advice is less involved than full members of the Advisory Board.

**The Steering Committee:** Address day-to-day issues and reports directly to and receives direction from the Advisory Board. It is represented by one person for each of the 3 Research themes the Project Director, the Administrative Project Manager (non-voting), and the post-doctoral fellow at the AIRS home site (non-voting).**

**The Policy and Planning Committee (P&P):** Composed of (1) theme leaders representing the 9 sub-themes (with 1 vote per sub-theme) (2) the following committees (each represented by 1 vote): Digital Library, Student/PD, Partner, Stakeholder, Global, and Ethics-Statistics-Intellectual-Property. Including the Project Director, the Committee has 15 votes. The Administrative Project Managers and Post-doctoral Fellow are ex officio, non-voting members. Where there are two sub-theme or committee leaders, both may attend meetings, but only one may vote. For every meeting, each sub-theme must have representation.**

**Affiliate Researcher:** An individual participating in research related to AIRS that can assist with the Milestone achievements, but who was not part of the original team. The affiliate may apply to become a collaborator or co-investigator.

**Affiliate Professional:** An individual who is likely a vocalist, or choral director who embraces the goals of AIRS and wishes to be supportive as well as receive information about findings.

**Note:** SSHRC must be notified of any new additional Co-Investigators, Collaborators, Advisory Board Members, or Partners.
Responsibilities & Benefits of Membership in AIRS

Official recognition as a co-investigator or collaborator in AIRS is associated with the following:

- Responsibilities
  - Understand and embrace the AIRS goals and milestones
  - Belong to one or more research subgroups or committees
  - Set up an airsplace.ca account and complete the individual information including photo
  - Attend regularly the virtual or real meetings of the subgroup and reading correspondence related to the subgroup
  - Attend annual meetings as feasible
  - Assist in attaining specific milestones of a sub-group
  - Willingly host or share knowledge with students (can take many forms)
  - Commit to collaborative work within and across subgroups
  - Contribute to the Digital Library
  - Provide a brief annual report of AIRS activities to the relevant sub-theme leader

- Benefits
  - Access to the collaboration and network
  - Access to funds for student support through application (Co-investigators can have funds directly; collaborators receive funds indirectly)
  - Funds for student travel through application and travel of AIRS collaborators in some cases
  - Partial travel support to the Annual Meeting
  - Opportunity for publication and dissemination
  - Opportunity for involvement in meetings
  - Access to the Digital Library and other data bases and resources
  - Be part of a large project that can make a difference to understanding development, improving education, and increasing well-being in ways that no individual effort could

The size of the Collaboration must not become unwieldy, and the Collaboration must include only individuals who are contributing. Individual circumstances may change over the course of the grant, and those who cannot honor original commitments or who change their research direction would naturally be expected to resign while those newcomers who would like to actively participate in the collaboration as Co-investigators or Collaborators may send their request using the forms that follow. Such requests include a short statement of what the applicant might offer to addressing one or more specific milestones of the collaboration and how his or her own research might benefit from the collaboration. A CV or identified research web-site should be included.

The Steering Committee will review the resignations and requests. All those whose applications are supported unanimously by the steering committee will be first invited to Affiliate Status, and as positions become free through attrition, the affiliates will be invited to positions of collaborator or co-investigator as appropriate and in order of receipt of applications. In cases of doubt of the
applicant’s acceptability, the application will be forwarded to the Policy and Planning Committee for review.

New partners will use a different procedure – completion of a letter outlining the partnership, to be discussed first with the Project Director.