

SIMSSA | Single Interface for Music
Score Searching and Analysis

Workshop XIX



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Music Technology Area, Schulich School of Music
McGill University



SIMSSA

: Single Interface for Music
: Score Searching and Analysis

- ❖ Prototype for “Google scores” minus Google
- ❖ OMR (optical music recognition) is required for full-text search
- ❖ Sophisticated music analysis and query
- ❖ Access to digitized scores world-wide from a single website
- ❖ Funded by SSHRC/FRQSC/Mellon 2011–2021:
\$4.4M

What would SIMSSA provide?

- ❖ **CONTENT:** Web-based optical music recognition (OMR) system with score editors
 - ❖ Rodan (workflow management system)
 - ❖ Gamera + Aruspix (a combination of existing OMR software)
 - ❖ IIIF (International Image Interoperability Framework)
 - ❖ Verovio (open-source music engraver)
 - ❖ Early music
 - ❖ “Gradsourcing” to correct errors
- ❖ **SEARCH & ANALYSIS:** Web-based user interface to view, search, annotate, and analyze scores
 - ❖ MEI (Music Encoding Initiative)
 - ❖ Diva.js (web-based document delivery system, based on IIIF)
 - ❖ Musiclibs (cross-depository music search engine, based on IIIF)
 - ❖ SIMSSA DB (formerly ELVIS Database)
 - ❖ Humdrum / music21 / VIS / jSymbolic (analytical tools)

SIMSSA Team: Musicologists (20)

- ❖ Jennifer Bain (Dalhousie)
- ❖ Inga Behrendt (Tübingen)
- ❖ Mauro Calcagno (Pennsylvania)
- ❖ Julia Craig-McFeely (Oxford)
- ❖ Julie Cumming (McGill)
- ❖ Elsa De Luca (Universidade Nova de Lisboa)
- ❖ Karen Desmond (Brandeis)
- ❖ Glen Ethier (Vanier College)
- ❖ Giuseppe Gerbino (Columbia)
- ❖ Kate Helsen (Western)
- ❖ Debra Lacoste (Waterloo)
- ❖ Sarah Long (Michigan State)
- ❖ Jesse Rodin (Stanford)
- ❖ René Rusch (U Michigan)
- ❖ Peter Schubert (McGill)
- ❖ Susan Forscher Weiss (Johns Hopkins)
- ❖ Frans Wiering (Utrecht)
- ❖ Jonathan Wild (McGill)

SIMSSA Team: Librarians (9)

- ❖ Richard Chesser
(British Library)
- ❖ Rachelle Chiasson-Taylor (Library and Archives Canada)
- ❖ Erin Conor
(U of Washington)
- ❖ Barbara Dobbs Mackenzie (RILM)
- ❖ J. Stephen Downie
(Illinois)
- ❖ Massimo Gentili-Tedeschi (RISM-Italy)
- ❖ Audrey Laplante
(U de Montréal)
- ❖ Cynthia Leive (McGill)
- ❖ Perry Roland (Virginia)

SIMSSA Team: Music Technologists (12)

- ❖ Jorge Calvo-Zaragoza
(U Alicante)
- ❖ Michael Scott Cuthbert
(MIT)
- ❖ Christoph Dalitz
(Niederrhein U)
- ❖ Andrew Hankinson (Oxford)
- ❖ Johannes Kepper
(U Paderborn)
- ❖ Jan Kolácek
(Charles U, Prague)
- ❖ Cory McKay
(Marianopolis College)
- ❖ Laurent Pugin (RISM)
- ❖ Craig Sapp (Stanford)
- ❖ Caroline Traube
(U de Montréal)
- ❖ George Tzanetakis
(U Victoria)
- ❖ Gabriel Vigliensoni (McGill)

SIMSSA: Partners (23)

- ❖ Alexander Street Press
- ❖ Bavarian State Library
- ❖ Bibliothèque nationale de France
- ❖ British Library
- ❖ Compute Canada / Calcul Québec
- ❖ Dalhousie University
- ❖ DIAMM Centre for Studies in Early Music
- ❖ Harvard University Music Library
- ❖ Hathi Trust Research Center
- ❖ New York Philharmonic Archives
- ❖ Répertoire International de Littérature Musicale (RILM)
- ❖ RISM Switzerland
- ❖ State University of New York at Stony Brook
- ❖ The Juilliard School
- ❖ The Walters Art Museum
- ❖ Université de Montréal
- ❖ University of London, Goldsmith
- ❖ University of Pennsylvania Libraries
- ❖ University of Victoria
- ❖ University of Virginia
- ❖ University of Washington
- ❖ University of Waterloo

SIMSSA: Advisory Board Members

- ❖ Douglas Eck (Google)
- ❖ David de Roure (Director, eResearch Centre, Oxford)
- ❖ Susan Vita (Head, Music Library, Library of Congress)

SIMSSA Workshops (2011–)

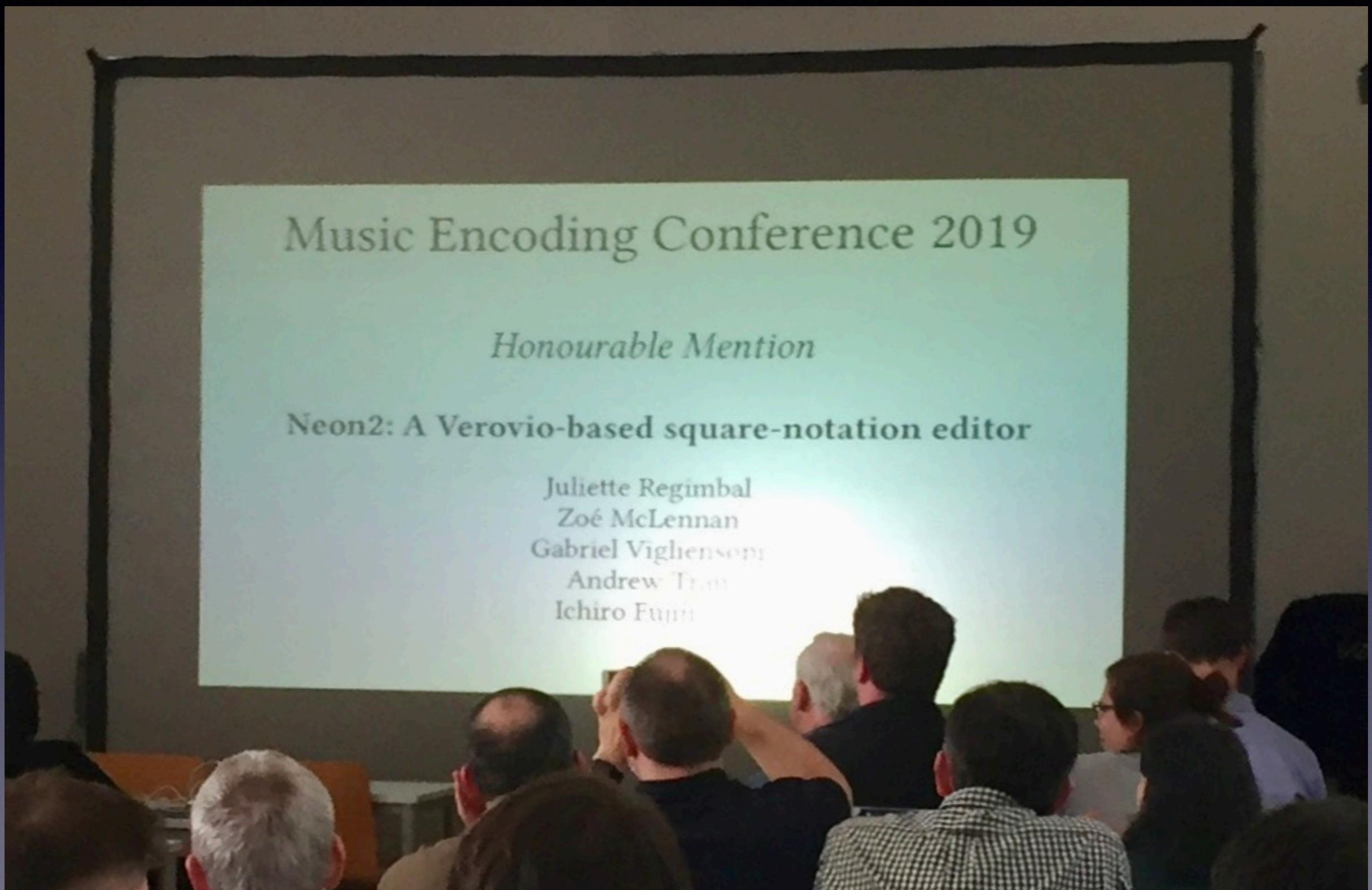
- ❖ 2016/07/09: IX at IAML (Rome)
- ❖ 2016/09/24: X at CIRMMT (Montreal)
- ❖ 2016/11/03: XI at AMS/SMT (Vancouver)
- ❖ 2017/08/07: XII at CIRMMT (Montreal)
- ❖ 2017/09/22: XIII at Art Gallery of Nova Scotia (Halifax)
- ❖ 2018/05/28: XIV at CIRMMT (Montreal)
- ❖ 2018/07/28: XV at IAML (Leipzig)
- ❖ 2018/11/01: XVI at AMS/SMT (San Antonio, TX)
- ❖ 2018/12/01: XVII at CIRMMT (Montreal)
- ❖ 2019/06/02: XVIII at MEC (Vienna)

SIMSSA XVIII

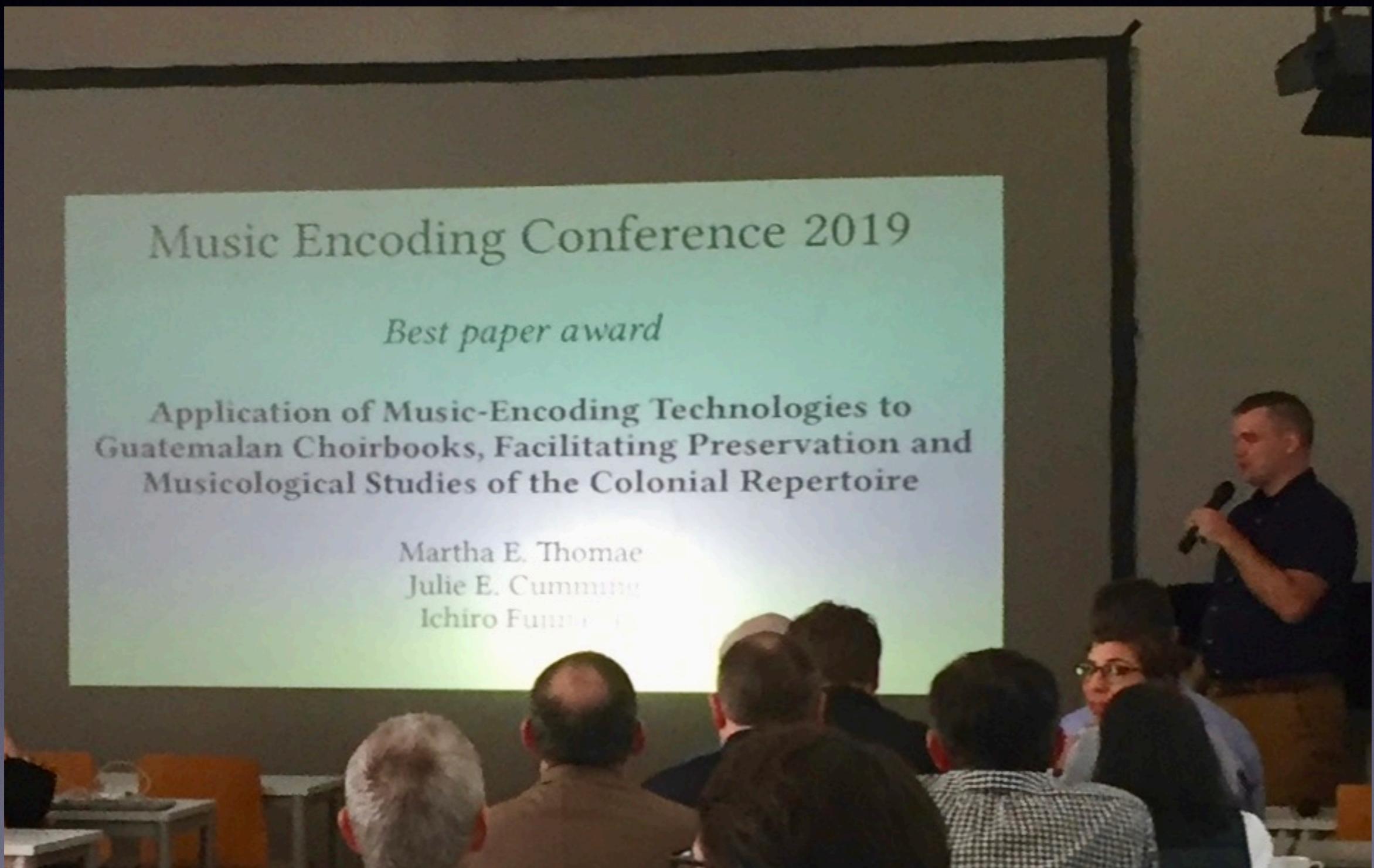
MEC @ Vienna (2019/06/01)



MEC @ Vienna (2019/05/31)



MEC @ Vienna (2019/05/31)



Achievements since July 2016

- ❖ Andrew Hankinson at Bodleian Library, Oxford
- ❖ Karen Desmond at Brandeis University
- ❖ 3 PhD Dissertations (Alex Morgan, Jacob Sagrans, Gabriel Vigliensoni)
- ❖ 4 MA Theses (Neven Prostran, Tim de Reuse, Martha Thomae, Ling-Xiao Yang)
- ❖ 2 Books (Karen Desmond, Jane Hatter)
- ❖ 3 Book chapters
- ❖ 2 Journal articles
- ❖ 12 Conference Proceedings articles
- ❖ 90 Presentations
- ❖ Scoring-up project using Verovio completed (Martha Thomae)
- ❖ New neume schema for MEI 4.0 completed

Other Accomplishments

- ❖ Four papers presented at ISMIR 2018 (September)
- ❖ Four papers and a poster presented at MEC 2019 (awarded Best Paper and Honourable Mention)
- ❖ Grant: “Digital Analysis of Chant Transmission (DACT)” (SSHRC, PI: Jennifer Bain) awarded
- ❖ Grant: “Mapping the Musical Landscape of the Sixteenth Century” (SSHRC, PI: Julie Cumming) awarded

SIMSSA Team @McGill: Summer 2019



Rian Adamian

Imane Chafi

Julie Cumming

Alex Daigle

Tim de Reuse

Glen Ethier

Laurent Feisthauer

Matan Gover

Emily Hopkins

Jacob Hutnyk

Alessandra Ignesti

Yaolong Ju

Sam Howes

Andrew Kam

Ian Lorenz

Sylvain Margot

Cory McKay

Zoé McLennan

Néstor Nápoles

Minh Anh Nguyen

Gustavo Pedro

Juliette Regimbal

Evan Savage

Peter Schubert

Martha Thomae

Andrew Tran

Vi-An Tran

Gabriel Vigliensoni

Acknowledgements

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Greg Burlet
Jorge Calvo-Zaragoza
Remi Chiu
Morgane Ciot
Nat Condit-Schultz
Julie Cumming
Alex Daigle
Marie DeYoung
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Meredith Evans
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Peter Henderson
Jason Hockman
Emily Hopkins
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Rory O'Connor
Laura Osterlund
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Jérôme Parent-Lévesque
Alexandre Parmentier
Gustavo Pedro
Sacha Perry-Fagant
Alastair Porter
Juliette Regimbal
Deepanjan Roy
Zeyad Saleh
Harry Simmonds
Brian Stern
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Martha Thomae
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Vi-An Tran
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Ling-Xiao Yang
Ké Zhang

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Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada



Schulich School of Music
École de musique Schulich

C I R
M M T Centre for Interdisciplinary Research
in Music Media and Technology



**Fonds de recherche
Société et culture**
Québec



compute | **calcul**
canada | canada

 **WEST** GRID

Workshop on SIMSSA XIX
 Saturday 21 September 2019, 9:30-13:30
 CIRMMT, McGill University, Montréal

- | | |
|-------------|--|
| 9:30-9:40 | Ichiro Fujinaga: <i>Welcome & Introduction</i> |
| 9:40-9:50 | Jennifer Bain: <i>The Digital Analysis of Chant Transmission (DACT)</i> . |
| 9:50-10:00 | Rebecca Shaw: <i>The Differentiae Database</i> |
| 10:00-10:10 | Néstor Nápoles López: <i>Cantus Ultimus: Status Update</i> |
| 10:10-10:20 | Evan Savage: <i>Neume Component Pitch and Type Classification</i> |
| 10:20-10:30 | Tim de Reuse: <i>Text-to-Image Alignment on Chant Manuscripts</i> |
| 10:30-10:40 | Juliette Regimbal & Jacob Hutnyk: <i>Neon: Full Manuscripts, Lyrics and Staves</i> |
| 10:40-10:50 | Imane Chafi: <i>Cress: MEI Mapping Tool</i> |
| 10:50-11:00 | Alex Daigle: <i>The Power of Rodan</i> |

11:00-11:30 Coffee break

- | | |
|-------------|---|
| 11:30-11:40 | Julie Cumming: <i>Introducing MML16: Mapping the Musical Landscape of the 16th Century</i> |
| 11:40-11:50 | Martha Thomae: <i>OMR for Mensural Notation: Looking at a Guatemalan Music Manuscript</i> |
| 11:50-12:00 | Yaolong Ju (& Sam Howes): <i>Chord Progressions in Lutheran Chorales</i> |
| 12:00-12:10 | Emily Hopkins: <i>SIMSSA DB: Symbolic Music Discovery and Search</i> |
| 12:10-12:20 | David Garfinkle: <i>PatternFinder: Symbolic Music Retrieval</i> |
| 12:20-12:45 | Julie Cumming, Cory McKay, Néstor Nápoles López, Sylvain Margot: <i>Contrapuntal Style: Pierre de la Rue vs. Josquin Des Prez</i> |
| 12:45-12:55 | Cory McKay (on behalf of Rían Adamán): <i>jSymbolic in 2019: Updates and Improvements</i> |

13:00 Lunch

The Vision: Global Music Library

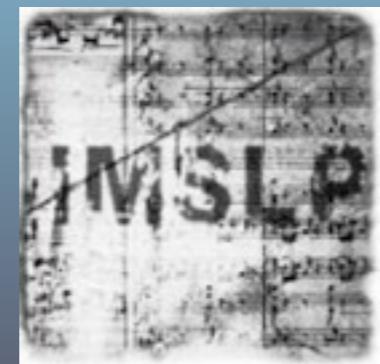
Tools



Music Encoding Initiative

Humdrum

music21



Early Music Online

Music Treasures Consortium

Metadata & Text



Répertoire International de Littérature Musicale
International Repository of Music Literature
Internationales Repertorium der Musikliteratur