

Research Centre/Institute Annual Report



**Inclusive Media and Design Centre
Ted Rogers School of Management**

Date: July 2017

Table of Contents

Director’s Overview and Highlights.....	3
The Year in Review.....	4
Non-HQP Team Members and Affiliates.....	4
Collaborations and Partnerships.....	5
Awards and Recognitions (for RFA members).....	5
Research Funding and Projects.....	6
Internal.....	6
External.....	7
Submissions.....	7
Knowledge Mobilization.....	8
Events.....	8
Presentations.....	8
Publicity.....	8
Service.....	8
Advocacy.....	9
Awards (IMDC students/employees).....	9
Training Highly Qualified Personnel.....	9
Students – PhD.....	9
Students - Masters.....	10
Undergraduate students.....	11
Staff.....	12
Research Contributions.....	12
Journal articles.....	12
Conference papers and presentations.....	12
Submissions.....	13
Invited talks, presentations, etc.....	13
Expenses for Previous Year.....	14
Plan for the Following Year.....	14
Future objectives, plans, and activities.....	14
Budget proposal.....	Error! Bookmark not defined.
Appendix 1: Year end report 2016/2017.....	Error! Bookmark not defined.

Director's Overview and Highlights

The 2016/2017 was an adventurous and productive year. Deb Fels spent the year at the School of Industrial Design, Queensland University of Technology in Brisbane, Australia as a Visiting Fellow. Her research there focused on analysing and publishing data collected from participants in the UK on mindful design; human factors of the inspection process involved in apiculture; and advising and assisting an undergraduate class on designing accessible public washroom facilities for transferring from wheelchair, disposal of large items such as adult diapers, and cleaning stations for people with ileostomies. As Visiting Fellow, Fels supervised 1 undergraduate student, assisted with data coding and statistical analysis for 2 PhD students, contributed 2 journal publications, 1 all day symposium organization and contribution, and gave 2 lectures.

At Ryerson, Somang Nam (MSc) began his PhD. Joash Sujan is expected to complete his MASc in Fall 2017. One Visiting Scholar, Peter Pennefather (beginning in 2016), one Post Doctoral Research Fellow, Shehnaz Fatima Lakha, and one PhD candidate, Abidin Akkok began in 2017. We are expecting to hire an additional international Post Doctoral Research Fellow in Fall 2017 who will be part of the Age-Well project.

From a funding perspective, ten full funding proposals and four letters of intent (LOI) were submitted. One funding proposal for the Royal Bank of Canada proposal was successful to date. Pending applications are as follows: a) Broadcast Accessibility Fund; b) SSHRC Award; c) SOSCIP EO; and (d) CIHR Collaborative Health Research Project. Notification of the pending funding proposals is expected in Fall 2017. All applications were with multiple partners. Fels was a lead on nine funding applications and two of the LOIs. Publications were maintained at an excellent level with three journal articles published, four submitted and four in progress. Five conference papers were also accepted and presented at various conferences. One book chapter has been submitted. All publications have student and collaboration partners as authors.

IMDC students put forward a Hult Prize submission, which was supported by the MBA/MScM department and one recent graduate (Greg Dolinar) nominated Fels for an Order of Ontario Award. Fels was the Co-Chair of Young Researchers Consortium for ICCHP 2016. She also continued to represent Ryerson and NSERC on the Panel for Research Ethics, however, her tenure was complete in September 2016. Fels participated in reviewing numerous journal and conference submissions including Universal Access to the Information Society (UAIS) Journal, UIST 2017, ASSETS 2017, ICCHP 2017, CHI 2017 and GI 2017. Fels is also on the program committee for ICCHP 2017. Finally, she is on the editorial board for UAIS.

Fels was nominated by Ryerson University for a 2017 SSHRC Impact Award, valued at \$50,000 and received the YSGS Outstanding Contribution to Graduate Education Award from Ryerson in December 2016.

Finally, technology transfer/knowledge mobilization activities for the IMDC were very busy. Fels consulted on the production and content of a video on "How we make your captions" with Media Access Canada and for a User Manual on Closed Captioning for the Hard of Hearing Association. Fels also

sat on the Steering Committee for Understanding User Responses to Live Closed Captioning in Canada (since 2016). The IMDC has produced, in partnership with Mediac Inc., a Canadian captioning tool that incorporates CEA708 functionalities into its modular design. Our current BAF proposal includes the use of this system as an educational tool for a continuing education program at Ryerson.

For 2017/2018, there will be a new PhD student beginning in September. All students will be working on projects related to research funded by the various partners. We are also continuing our research on audio description (AD), having conducted education sessions and consulted with Theater Passe Muraille and Tangled Art + Disability. Furthermore, we expect to work on new indigenous methods of AD in 2017/2018. We are also working on research that involves children with Autism Spectrum Condition (ASC), through the Toronto District School Board.

The Year in Review

Non-HQP Team Members and Affiliates

1. Arlene Astell: co-lead on Work Package 1.2 of Age-Well NCE
2. Beverly Milligan: co-PI on Broadcast Accessibility Fund grant
3. Bill Kapralos: PI for CIHR Collaborative Health Research Projects, University of Ontario Institute of Technology
4. Carla Rice: PI for SSHRC Partnership grant: Bodies in Translation: Activist Art, Technology and Access to Life, University of Guelph
5. Chris Gibbs: co-PI on Socius Pro research project funding through TRSM
6. David Bobier: artist in residence for Vibrafusion Lab research and OCE Advancing Education grant (called WebMoti)
7. Elizabeth VandenKerkhof: co-PI for Post Doctoral Fellow and Director Pain Care Diploma, Queens University
8. Patrick Newmann: co-supervisor from Industrial Engineering at Ryerson for Joash Sujana and Abidin Akkok
9. Mark Chignell: Co-supervisor from Industrial Engineering at University of Toronto for Somang Nam
10. Fatima Lakha: project co-PI on RBC Immigrant, Diversity and Inclusion Project and collaborator in CIHR KS grant
11. Graham Smith: PDF for OCE Advancing Education grant
12. Gregory Zobel: PI for OSEP grant
13. Jason Nolan: co-PI for OCE Advancing Education grant
14. Kevin Shaw: CEO, Zagga Entertainment, collaborator on Broadcast Accessibility Fund LOI
15. Maria Karam: collaborator on Vibrafusion Lab research, industry partner for OCE Advancing Education grant
16. Muthana Zouri: collaborator on BAF application from Ryerson's Chang school
17. Peter Pennefather: project co-PI on RBC Immigrant, Diversity and Inclusion Project and a Visiting Scholar at the IMDC lab
18. Shawn Haswell: collaborator on BAF application

Collaborations and Partnerships

1. g-Dial – industry partner for CIHR Live Pilot
2. Mediac Inc – industry partner for Broadcast Accessibility Fund
3. Ontario Shores Centre Mental Health Sciences – Age-Well
4. OCADU – Inclusive Design Institute
5. Pain & Wellness Centre – collaborator for CIHR Catalyst submission
6. Queens University – Post Doctoral Project
7. SociusPro – TerpTube technology transfer partner
8. Tactile-Audio Display (TAD) Inc. – Vibrafusion lab
9. University of Guelph – PI on SSHRC partnership grant
10. University of Ontario Institute of Technology – collaborator for CIHR Collaborative Health Research Projects
11. Rexdale CHC – industry partner for eCampus submission
12. Ryerson University, Television and Radio Arts School of Media and the Chang School – collaborator on BAF
13. University of Toronto - Deb Fels is an adjunct professor in Mechanical and Industrial Engineering
14. WebChair Inc. – WebMoti project
15. Western Oregon University – collaborator on upcoming OSEP grant application
16. Zagga Entertainment – LiveDescribe

Awards and Recognitions (for RFA members)

Deb Fels was nominated by Ryerson University for a 2017 SSHRC Impact Award, valued at \$50,000 and received the YSGS Outstanding Contribution to Graduate Education Award from Ryerson. Furthermore, a previous student put forth a nomination for Fels, for the Order of Ontario Award.

Research Funding and Projects

Internal

Program	Date	Contribution to IMDC research objectives
Career Boost	Summer 2017, Fall/Winter 2016/17	Career Boost allows undergraduate students to be involved in various research projects including MyHealthMyRecord (CIHR), Pavo Digital (BAG), LiveDescribe, and WebMoti (OCE). Students play a key role in developing software and participating in user studies. Five positions have been awarded for the coming year (2017/18).
TRSM/OVPRI Undergraduate Research Opportunity Grant	Summer 2017	Research grants for undergraduates allows one student to participate in the development and implementation of research objectives. The student for the summer 2017 participated in developing a mobile version of MyHealthMyRecord.
Work Study Research Assistant Program	2017-2018 Fall/Winter	Research grants for undergraduates allows one student to participate in the development and implementation of research objectives. Our application was submitted and is pending funding.

External

Date	Organisation & Research Project	Applicant	Amount for Fels/Ryerson
2017	Broadcast Accessibility Fund LOI and full application – Continuing Education Course Series for Inclusive Media for Broadcast Production	D. Fels, M. Whitfield	Full application submitted
2017	Research Proposal- The RBC Immigrant Diversity and Inclusion Project	D. Fels, P. Pennefather, F. Lakha, M. Whitfield	\$7000 for 6 months
2015-20	SSHRC Partnership grant: Bodies in Translation: Activist Art, Technology and Access to Life, University of Guelph	C. Rice, E. Chandler	undefined
2016-18	WebMoti – OCE Advancing Education	D. Fels	\$120,000
2016-17	Broadcast Accessibility Fund	B. Milligan, D. Fels	\$105,000
2016-17	CIHR – Knowledge translation	D. Fels, P. Pennefather	\$15,000
2015-20	NSERC Discovery	D. Fels	\$28,000 per year
2014-19	Age-well NCE - TUNGSTEN	Alex Mihailidis + 20 other researchers; Co-lead with A. Astell	\$59,000

Submissions

1. eCampus Ontario
2. CIHR Project
3. RBC
4. SOSICIP OCE TalentEdge Post-doctoral Fellowship Program
5. SSHRC Insight Development

6. Women's College
7. SSHRC Award
8. BAF (2)
9. SSHRC Impact Award
10. CIHR Collaborative Health Research Projects
11. SOSCIP EOI

Knowledge Mobilization

We consulted on the production and content of a video on “How we make your captions” with Media Access Canada and consulted on the production and content of a User Manual on Closed Captioning for the Hard of Hearing Association. Our partnership with Mediac Inc. has resulted in a Canadian captioning tool that incorporates the captioning research that has been carried out at the IMDC over the past 10 years.

Events

The Vibrafusion Lab held 2 different events including a workshop with Jesse Stewart, an award-winning multidisciplinary artist and Moe Clark, a multidisciplinary Métis artist. Please refer to www.vibrafusionlab.com for the complete listing of events and details.

Presentations

All conference papers were presented at the associated conferences. We have been selected to exhibit at the 2017 Accessibility Innovation Showcase (AIS) taking place September 24-26, 2017.

Publicity

The Ontario Center for Excellence wrote an article on their blog in regards to our WebMoti project: <https://blog.oce-ontario.org/helping-students-with-autism-integrate-into-the-classroom-1df4c6b1c4ec>.

Service

Deb Fels has been on the board of directors for TellMeTV (since 2016), CaptionMax, USA (since 2015), on the editorial board for Universal Access to the Information Society (since 2016), and a member on the Canadian tri-council panel on research ethics (since 2010). She has also worked to Create Human Factors and Ergonomics qualifying exam for the Professional Association of Ontario (since 2006) and reviewed grants and manuscripts for NSERC, SSHRC (since 2004) and for the IEEE Transactions on Systems, Man and Cybernetics, Human Factors and Ergonomics Society, Medical Systems Special Interest Group, technical program committee member (since 2000). Fels has also been a member on the Understanding User Responses to Live Closed Captioning in Canada Steering Committee (since 2016) and Reinventing the Wheel (since 2015).

Mala Naraine (a recent Post Doctoral Fellow) and Margot Whitfield consulted with Theatre Passe Muraille and their seasons directors on how to make their 2016/17 season more accessible to the blind and low vision communities. Whitfield consulted with Tangled Art + Disability on AD.

Students, recent graduates and staff at the IMDC are regularly being asked to consult on accessibility issues in TRSM and the broader Ryerson community.

Advocacy

Evan Hibbard (a recent PhD graduate) hosted a Queer ASL course teaching ASL to Deaf, hard of hearing, and interpreters how to be more inclusive of queer individuals including trans, gender queer, non-binary, gay, lesbian, bi. He will use the curriculum from this course for his new teaching appointment (tenure track) at University of California at Santa Monica.

Awards (IMDC students/employees)

Two of our career boost students were nominated for awards but only Raza Mir Ali, was awarded the 2017 Career Boost Enterprise & Innovation Award. Another one of our students, Vera Parilova, received the Program Wide Award for the Faculty of Science in 2017. Joash Sujan Roy received an Agewell's Innovators of Tomorrow certificate in the fall of 2016.

Training Highly Qualified Personnel

Students – PhD

Name	Program	Thesis Title
Abidin Akkok	Mechanical and Industrial Engineering	Untitled
Soman Nam	Industrial Engineering	Implementation of a qualitative measurement to assess the quality of closed captioning
Daniel Harley	PhD, Comm/Cult	Untitled

Students - Masters

Name	Program	Thesis Title
Joash Sujan (MAsc, on-going)	Industrial Engineering	Needs Investigation methods Compatible with End user Limitations (NICKEL)
Jonathan Turco (MMSc, ongoing)	MMSc	Credibility and authenticity between text and video consumer reviews
Carly Holtzman (MA, on-going)	MA, Comm/Cult	Towards patient audio/video contributions to the electronic medical record
Alison Whiting (MMSc)	MMSc	Elements of Captions Quality

Undergraduate students

Name	Program	Thesis Title
Vera Parilova	Computer Science	Programmer, MyHealthMyRecord and Pavo project. (Fall/winter 2016/2017)
Raza Mir Ali	Computer Engineering	Programmer, LiveDescribe and MyHealthMyRecord
Sheraz Siddiqui	Computer Science	Programmer, (Fall/winter 2016/2017, Pavo project)
Atal Akbari	Computer Science	Programmer, (Fall/winter 2016/2017, Pavo project)
Prabhleen Kamboj	Computer Science	Programmer, (Fall/winter 2016/2017, MyHealthMyRecord and summer 2017 Lead Programmer and RA for MyHealthMyRecord)
Mehali Mistry	Biomedical Engineering	Programmer, WebMoti (summer 2017)
Santhoshi (Shay) Shankar	Computer Science	Programmer, MyHealthMyRecord (summer 2017)
Livius Grosu	Computer Science	Programmer, WebMoti (summer 2017)

Staff

Name	Contribution
Martin Gerdzhev	Programmer and Server administrator.
David Bobier	Artist, Installation Project, WebMoti
Matthew Gleeson	Project Manager, Pavo
Mohammad Zaman	Programmer, Pavo
Rishabh Sharmaa	Programmer, Pavo
Sander Fels-Leung	Programmer, Pavo
Margot Whitfield	Lab manager. Authored two papers, organized finances, contracts, and user studies for lab. Submitted and was awarded two research grants.

Research Contributions

Journal articles

1. Bajko, R. Hodson, J., Seaborn, K., Livingstone, P, Fels, D.I. (2016). Edugamifying Media Studies: Student Engagement, Enjoyment, and Interest in Two Multimedia and Social Media Undergraduate Classrooms. *Information Systems Education Journal* 14 (6), 55. Seaborn, K., Edey, J., Dolinar, G., Whitfield, M., Gardner, P., Branje, C., Fels, D.I. (forthcoming). Accessible play in everyday spaces: mixed reality gaming for powered mobility device users. *Transactions on computer-human interaction*.
2. Seaborn, K., Pennefather, P., Fels, D.I. (2016). Learn What We're Going Through:" Older powered chair users' on mixed reality and related technologies for social interaction, entertainment, and understanding: A focus group and needs requirements study. *Universal Access in the Information Society* 15 (4), 699-711.
3. Seaborn, K., Fels, D. I., Bajko, R., & Hodson, J. (2017). Gamifying the media classroom: Instructor perspectives and the multidimensional impact of gamification on student engagement. *International Journal of Game-Based Learning*, 7(4), Article 2, in press.

Conference papers and presentations

1. Roy, J. S. S., Neumann, W. P., & Fels, D. I. (2017, July 31-Aug 3). Human capability demands required from the elderly and disabled participants in the user centered design needs elicitation methods- a survey study. ACE-ODAM 2017 Conference Banff, AB.
2. Roy, J. S. S., Neumann, W. P., & Fels, D. I. (2016, July). User Centered Design Methods and Their Application in Older Adult Community. In *International Conference on Human Interface and the Management of Information* (pp. 462-472). Springer International Publishing.

3. Seaborn, K., Edey, J., Dolinar, G., Whitfield, M., Gardner, P., Branje, C., & Fels, D. I. (2016). Accessible Play in Everyday Spaces: Mixed Reality Gaming for Adult Powered Chair Users. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 23(2), 12. <http://doi.org/10.1145/2893182>.
4. Seaborn, K., Satoh, Y., & Fels, D. I. (2016, July). Usability and Safety of a HUD During Powered Chair Navigation: A Pilot Study. In *International Conference on Universal Access in Human-Computer Interaction* (pp. 628-638). Springer International Publishing.
5. Turco, J., Gibbs, C., Fels, D.I. (2017, January). User Generated Video Reviews by Hotel Guests (Research Note). ENTER2017 eTourism Conference, Rome. <http://enter2017.org/programme/>.

Submissions

1. Fels, D.I., Blackler, T., Niedderer, K. (2017) Does bouncy equal happy? A user study in the emotions and meanings conveyed by a designed object and experienced emotions. *PLOS ONE*.
2. Fels, D.I., Blackler, A., Cook, D., Foth, M., (2017). Human factors in apiculture: A case study on inspecting movable frame hives for healthy bee activities. *Industrial Ergonomics*.
3. Holtzman, C.B., Khandwala, A., Whitfield, M., Pennefather, P., Fels, D.I. (forthcoming). Videobooking: A patient-centred record of living with chronic conditions.
4. Naraine, M., Whitfield, M., Fels, D.I. (forthcoming). Who's devising your theatre experience? *PLOS ONE*.
5. Nam, S., Fels, D.I. (forthcoming). The Beadbox: a creative authoring tool with a notation system for vibrotactile art. *PLOS ONE*.
6. Pennefather, P., Seaborn, K., Fels, D.I. Systemic Design Principles Targeted at Developing Eudaimonic Flourishing through Healthcare System Participation. in Jones, P. (ed.) *Systemic Design*, Springer.
7. Roy, J.S.S., Whitfield, M., Fels, D.I. (forthcoming). A case report with frail, elderly EVA users and their caregivers to determine ways to support single switch connectivity with mobile technologies. *The Journal of Gerontechnology*.
8. Seaborn, K., Pennefather, P., Fels, D.I. (2017). Meaningful embodiment, well-being motivation, and game engagement in a cooperative mixed reality game. *Human-Computer Interaction*.
9. Seaborn, K., Pennefather, P., Fels, D.I. (2017). Beyond play for pleasure: Eudaimonic motivation predicts game engagement. *PLOS ONE*.

Invited talks, presentations, etc.

August 2016 – Deb Fels and Margot Whitfield presented Enhanced captions, Caption Studies Conference, Western Oregon University, USA

(<https://www.youtube.com/watch?v=VXMkdyluDac&feature=youtu.be>)

September 2016 – Chris Gibbs and Jonathan Turco presented on the Socius Pro research project, Ryerson University

October 2016 – Deb Fels presented on Inclusive Design, Queensland University of Technology

November 2016 – Pennefather, P., Suhanic, W., Seaborn, K., Fels, DI. presented Frameworks for Guiding Design of Records of Eudaimonic Flourishing and Enhanced Resilience (PREFER) for People with Complex Chronic Conditions. Society for Social Neuroscience 7th Annual Meeting, San Diego.

February 2017 – Deb Fels presented on Inclusive Design, Queensland University of Technology

June 2017 – David Bobier gave an artist talk during the Tangled Art + Disability festival, Community Gallery of Museum London.

June 2017 – Graham Smith presented on WebMoti, Virtual & Augmented Reality World Conference & Expo 2017. <https://conference.virtualreality.to/>.

Expenses for Previous Year

All expenses and a brief description for each expense for the previous year are outlined in Appendix I. Salary expenses for Margot Whitfield comprised the bulk of the costs from 2016/2017 and this is expected to continue through 2017/2018.

Plan for the Following Year

Future objectives, plans, and activities

The goal of the IMDC remains to carry out technology oriented research on inclusive media and design.

Scholarly research intentions: We plan to continue our current projects and are adding one new direction, patient centered and community health. Consequently, we are hoping to expand our CIHR Pilot program research with the research we are doing relating to new immigrants and our RBC grant. We also plan to continue research with older adults, particularly those with disabilities. Towards that continued direction, we are part of the AGE-WELL NCE working on the NICKEL project with a goal of creating tools that assist designers in understanding and accounting for the needs of older adults, with an emphasis on the needs analysis process. Furthermore, we expect to continue research with people with disabilities, including younger school age populations, with our OCE WebMoti project, which will look at how technology can support Autistic children and their teachers within the TDSB.

Publishing objectives: We forecast publishing at a higher rate to 2016 (due to the increased Postdoctoral Fellows and Visiting Scholar presence) and are targeting higher impact value and new venues. For example, we are targeting trade publications in the broadcast area in order to disseminate our captioning research to the broadcaster industry and non-academic audiences. We are also attempting to submit to more tier one journals such as PLOS ONE.

Financial strategy: We plan to submit at least eight new funding applications, two to the CIHR for project and catalyst grants, one to NSERC CRD, one to NSERC Engage, one to BAF, one to SSHRC Insight grant, one to OSEP (with our partner from Western Oregon University), and one to Agewell CIP.

Human resources needs: It is anticipated that there will be one additional PhD student and one additional Postdoctoral Fellow (to be financed through our partner Agewell organization). We also anticipate two additional undergraduate (from the three undergraduate students involved in the IMDC projects through the Career Boost programs). We also anticipate hiring an undergraduate student from

the Research Assistant Program (2017-2018 Fall/Winter) to support our research objectives. Otherwise, we expect the staffing levels will remain the same as in the 2016/2017 year.

Knowledge mobilization expectations (e.g. events and seminars): It is anticipated that there will be an additional five events scheduled at the Vibrafusion Lab, one art installation, one seminar on accessibility, and one workshop on gamification throughout the 2017/2018 year.

Strategies to ensure goals and objectives are met: 1) we will continue to submit applications for funding in order to attract adequate human and technical resources to achieve our goals and objectives; and 2) publishing research work will remain a part of each graduate student's work.