Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

FORM 100
Personal Data Form
PART I

Date: 2013/04/22

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Hancock	Mark	MS	**Valid** 251159

☐ I hold a faculty position at an eligible Canadian college (complete Appendices B1 and C)

☐ I do not or will not hold an academic appointment at a Canadian postsecondary institution

Place of employment other than a Canadian postsecondary Institution (give address in Appendix A)

APPOINTMENT AT A POSTSECONDARY INSTITUTION

Title of position: Assistant Professor

Department:

Campus:

Canadian postsecondary institution:

Tenured or tenure-track academic appointment — Yes [X] No [ ]

Part-time appointment [ ] Full-time appointment [X]

- For all non-tenured or non tenure-track academic appointment and Emeritus Professors, complete Appendices B & C
- For life-time Emeritus Professor and part-time positions, complete Appendix C

ACADEMIC BACKGROUND

Degree	Name of discipline	Institution	Country	Date yyyy/mm
Bachelor's	Mathematics and Computing Science	Simon Fraser	CANADA	2002 / 06
Master's	Computer Science	British Columbia	CANADA	2004 / 05
Doctorate	Computer Science	Calgary	CANADA	2010 / 07

TRAINING OF HIGHLY QUALIFIED PERSONNEL

Indicate the number of students, fellows and other research personnel that you:

	Currently		Over the past six years (excluding the current year)		
	Supervised	**Co-supervised**	**Supervised**	**Co-supervised**	**Total**
Undergraduate	10		4	3	17
Master's	4			4	8
Doctoral		3			3
Postdoctoral					
Others		1	1	2	4
Total	14	4	5	9	32

Personal information collected on this form and appendices will be stored in the Personal Information Bank for the appropriate program.
PROTECTED WHEN COMPLETED

Version française disponible

Completed

ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE (use one additional page if necessary)

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Assistant Professor	Waterloo	Management Sciences	2010/08
Sessional Instructor	University of Calgary	Computer Science	2009/01 to 2009/04
Researcher	Intel Corporation		2005/07 to 2005/09
Teaching Assistant	University of Calgary	Computer Science	2004/09 to 2004/12
Intern	Mitsubishi Electric Research Laboratories		2004/06 to 2004/08
Teaching Assistant	University of British Columbia	Computer Science	2004/01 to 2004/04
Teaching Assistant	University of British Columbia	Computing Science	2003/01 to 2003/12
Research Assistant	Queen's University	Computing Science	2002/05 to 2002/08
Research Assistant	Simon Fraser University	Computer Science	2001/05 to 2002/04

Personal identification no. (PIN)	Family name
Valid 251159	Hancock

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)
List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.			
a) Support held in the past 4 years			
Mark Hancock	University start-up fund University of Waterloo	75,000	2010
b) Support currently held			
Frank Maurer + 12 Others	Digital Surface Software Application Network (SURFNET) NSERC Strategic Networks Grant	1,000,000 (0%) 1,000,000 (3%) 1,000,000 (3%) 1,000,000 (0%) 1,000,000 (0%)	2010 2011 2012 2013 2014
Mark Hancock	Ubiquitous Virtual Tools: Providing Ad-Hoc Multitouch Interaction on Nearby Surfaces NSERC Discovery Grant 30 hours/month	20,000 20,000 20,000 20,000 20,000	2011 2012 2013 2014 2015
Mark Hancock	Ubiquitous Virtual Tools: Providing Ad-Hoc Multitouch Interaction on Nearby Surfaces NSERC Discovery Grant: Supplement	5,000 5,000	2011 2012

Personal identification no. (PIN)	Family name
Valid 251159	Hancock

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)

List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

b) Support currently held			
Kellogg S. Booth + 49 Others	GRAND: Graphics Animation and New Media NSERC Network Centres of Excellence 10 hours/month	4,600,000 (1%) 4,600,000 (1%)	2011 2012
Neil Randall + 34 Others	IMMERSe: The Interactive & Multi-Modal Experience Research Syndicate SSHRC Partnership Grants 10 hours/month	150,000 (3%) 500,000 (3%) 500,000 (3%) 500,000 (3%) 500,000 (3%)	2012 2013 2014 2015 2016
Mark Hancock	Using Narrative to Support Interaction on Mobile Devices and Multitouch Surfaces NSERC Engage 5 hours/month	25,000	2012
c) Support applied for			
Mark Hancock	Design Environment for Creating Physical Interactive Technology Canada Foundation for Innovation Leaders Opportunity Fund 0 hours/month	50,000	2013

Personal identification no. (PIN)	Family name
Valid 251159	Hancock

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)
List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.			
c) Support applied for			
Mark Hancock	Design Environment for Creating Physical Interactive Technology Ontario Research Fund Small Infrastructure Funds 0 hours/month	50,000	2013

PROTECTED WHEN COMPLETED

Canada

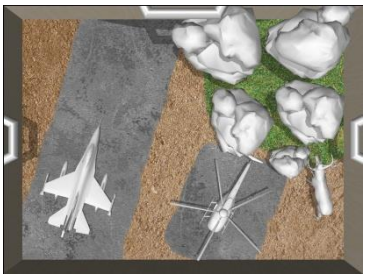
Highly Qualified Personnel (HQP)

Provide personal data about the HQP that you currently, or over the past six years, have supervised or co-supervised.

Personal identification no. (PIN)	Family name
Valid 251159	Hancock

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Diane Watson	Doctoral (In Progress)	Co-supervised 2013 -	Undecided	PhD Student
Hala Anwar	Master's (In Progress)	Supervised 2013 -	Investigating the Support of Change with Technology	Master's Student
Adam Bradley	Doctoral (In Progress)	Co-supervised 2012 -	Visualizing Data from Multitouch Surface Studies	PhD Student
Ayman Alzayat	Res. Associate (In Progress)	Supervised 2012 -	Investigating Embodiment through a Digital Tabletop	Research Associate (Master's Level)
Mehrnaz Moustafapour	Master's (In Progress)	Supervised 2012 -	Exploring Multitouch Surface Interaction for Art Therapy	Master's Student
Joseph Shum	Master's (In Progress)	Supervised 2011 -	Collaborative Navigation on a Multitouch Surface	Master's Student
Kimberly (Rebecca)	Master's (In Progress)	Supervised 2011 -	Exploring the use of narrative in interactive training	Master's Student
Yu-Ling (Betty) Chang	Doctoral (In Progress)	Co-supervised 2011 -	Improving Awareness of Automated Actions on Digital	PhD Student
Arezoo Irannejad	Master's (Completed)	Co-supervised 2011 - 2013	Investigating Privacy Expectations in a Shared Environment	Master's Student
Alexandra Ion	Exchange (MSc) (Completed)	Co-supervised 2012 - 2012	Uncovering moving off-screen objects on large displays	Master's exchange student
David Lindlbauer	Exchange (MSc) (Completed)	Co-supervised 2012 - 2012	Automatic grouping of hand-drawn digital sketches	Master's exchange student
Dmitry Pyryeskin	Master's (Completed)	Co-supervised 2011 - 2012	Extending User Interactions into the Space Above the Table	Master's Student
Mehrdad Varedi	Technician (Completed)	Supervised 2011 - 2011	Web Design	Tech IT Consultant at Diamond Municipal Solutions
Deon Jajalla	Undergraduate (Completed)	Supervised 2010 - 2011	Building a Multi-touch Table Using Laser IR Light	Undergraduate Student at the University of Waterloo
Kimberly Mikulecky	Undergraduate (Completed)	Co-supervised 2010 - 2011	Visualizing Information using Cloth on a Multi-Touch Surface	Database Developer at University of Calgary
Stephanie Mikulecky	Undergraduate (Completed)	Co-supervised 2010 - 2011	Studying Embodiment with Virtual Multi-Touch 3D Artifacts	Undergraduate student at University of Calgary
Luc Vlaming	Intern (M.Sc.) (Completed)	Co-supervised 2009 - 2010	Mixed 2D and 3D Touch Interaction for Vislinks	Master's student at University of Groningen
Thomas ten Cate	Intern (M.Sc.) (Completed)	Co-supervised 2008 - 2009	Enabling Sandtray Therapy on a Multi-Touch Table	Site Reliability Engineer at Google

1. Four Most Significant Research Contributions



Supporting narrative through a digital tabletop game [7,26,29]. I took an interdisciplinary approach to the design of a game in which children can tell a narrative to a therapist. I, and my HQP, Thomas ten Cate, used a co-operative design strategy, including both art therapists and interaction designers to create this virtual 3D sandtray therapy game. Using virtual tools in the design allowed the physical actions to serve as valuable hints to the therapist about the child's psyche. This work was published at the premier conference on Human-Computer Interaction (CHI 2010) and is significant to the domain of interactive surfaces, and to the domains of narratology, game design, and art therapy. I am currently working with Dr. Jesse Hoey and my recent master's graduate, Dmitry Pyryeskin, to develop a similar application for clients with dementia.

3D interaction on digital tables [11,30,34]. At the onset of my Ph.D. work, the area of 3D interaction on digital tables was largely unexplored. My research helped to pioneer this new area of study, an area with significant potential to help form the next generation of multi-touch platforms. Through an iterative design, implementation, and evaluation cycle, this work demonstrated empirically that the use of three fingers (shown in the figures to the right) to control 3D virtual artefacts on interactive surfaces improved performance and was preferred. This work helped to empirically demonstrate the need for multitouch technology (now a widespread commercial phenomenon); to enable richer and faster interaction, such hardware must be capable of detecting and distinguishing multiple fingers on multiple hands from many different people, an implication still relevant to the next generation of video gaming platforms. This work was published at the premier conference on human-computer interaction (CHI 2007) and received a nomination for a best paper award, and has led to invited talks and media coverage. More recently, an entire sub-area within human-computer interaction has begun to emerge, which has led to my participation in a Dagstuhl seminar, *Touching the 3rd Dimension*, a workshop at CHI 2012, *Touching and Designing 3D User Interfaces*, and the nomination of my thesis for a CGS/UMI Distinguished Dissertation Award by my university.

Human perception of 3D at digital tables [10,12]. Applications make frequent use of 3D effects; however, the use of 3D can impact a person's perception, particularly when there are multiple people using the same large screen display. Different choices in the way a 3D application is designed can lead to distorted images and difficulty interpreting angles and orientations. Through a series of empirical studies [10], this work contributes a better understanding of the degree of the perceptual error that a designer can expect when using 3D effects on tables. These studies also provide clear guidelines for how to design 3D collaborative games for digital tables that minimize this perceptual error, and contribute techniques for mitigating this perceptual error using non-standard projection geometries [12]. This work was published at the conference for Interactive Tabletops and Surfaces (ITS), the primary conference dedicated to these emerging technologies.

Using virtual tools to enable richer functionality [5,9,31,32,24,25]. A variety of interaction techniques have been created for multitouch tables (including my own [11]) that demonstrate how multiple hands and fingers can move and rotate virtual artefacts. However, this work does not describe how to use these

techniques to provide more general functionality, such as saving, loading, or clearing information. Instead, applications typically resort to the use of menus or gestures to provide these actions. My work provides a framework for how to develop multi-touch applications using physical effects, such as object collisions and the ability to toss an object and have it tumble across the screen; in essence, virtual objects can act as tools. For example, a person can clear the screen by using a long object to 'sweep away' other objects, or use a concave object to collect other objects. This framework was published at ITS 2010 [9], and was patented and licensed to SMART Technologies [31,32]; it provides a way for application developers to create complex functionality in an application, without the need for menus or gestures.

2. **Research Contributions and Practical Applications** (HQP authors marked in **bold**)

As is common in my area of research, I primarily disseminate my work through the publication of high-impact full conference papers, with HQP as first authors and presenters at the conference.

2.1 Other refereed contributions

Full Papers in Fully Refereed Conferences/Symposium Proceedings [3-6 reviews, 2-3 stage process]

1. **Ion, A.**, **Chang, Y.-L.**, Haller, M., Hancock, M., Scott, S.D. Canyon: Providing location awareness of multiple moving objects in a detail view on large displays. In *Proc. ACM Conference on Human Factors in Computing Systems (CHI)*, 10 pages, 2012. (Best paper honorable mention award; top 5% of 1963 submissions)
2. **Seto, A.M.**, Scott, S.D., Hancock, M. Investigating menu discoverability on a digital tabletop in a public setting. In *Proc. Interactive Tabletops and Surfaces (ITS)*. 71-80, 2012. (29% accepted)
3. **Pyryeskin, D.**, Hancock, M., Hoey, J. Comparing elicited gestures to designer-created gestures for selection above a multitouch surface. In *Proc. ACM ITS*. 1-8, 2012. (29% accepted)
4. **Azad, A.**, Vogel, D., **Ruiz, J.**, Hancock, M., Lank, E. Territoriality and behaviour on and around large vertical publicly-shared displays. Proc. *Designing Interactive Systems (DIS)*. 468-477, 2012. (20% accepted)
5. **Mikulecky, K.**, Hancock, M., Brosz, J., and Carpendale, S. Exploring physical information cloth on a multitouch table. In *Proc. ACM ITS*. 140-149, 2011. (33% accepted)
6. **Vlaming, L.**, Collins, C., Hancock, M., Nacenta, M., Isenberg, T., Carpendale, S. Integrating 2D mouse emulation with 3D manipulation for visualizations on a multi-touch table. In *Proc. ACM ITS*. 221-230, 2010. (28% accepted)
7. Hancock, M., **ten Cate, T.**, Isenberg, T., and Carpendale, S. Supporting sandtray therapy on an interactive tabletop. In *Proc. ACM CHI*. 2133-2142, 2010. (22% accepted)
8. Hancock, M., Hilliges, O., Collins, C., Baur, D., and Carpendale, S. Exploring tangible and direct touch interfaces for manipulating 2D and 3D information on a digital table. In *Proc. ACM ITS*. 85-92, 2009. (36% accepted)
9. Hancock, M., **ten Cate, T.**, and Carpendale, S. Sticky tools: Full 6DOF force-based interaction for multi-touch tables. In *Proc. ACM ITS*. 145-152, 2009. (36% accepted)
10. Hancock, M., Nacenta, M., Gutwin, C., and Carpendale, S.. The effects of changing projection geometry on the interpretation of 3D orientation on tabletops. In *Proc. ACM ITS*. 175-182, 2009. (36% accepted)
11. Hancock, M., Carpendale, S., and Cockburn, A. Shallow-depth 3D interaction: Design and evaluation of one-, two- and three-touch techniques. In *Proc. ACM CHI*. 1147-1156, 2007. (Best paper honorable mention; top 5% of 571 submissions)

12. Hancock, M. and Carpendale, S. Supporting multiple off-axis viewpoints at a tabletop display. *In Proc. Workshop on Horizontal Interactive Human-Computer Systems (Tabletop)*. 171-178, 2007.
13. Hinrichs, U., Hancock, M., Collins, C., and Carpendale, S. Examination of text-entry methods for tabletop displays. In *Proc. IEEE Tabletop*. 105-112, 2007.
14. Keijser, J., Carpendale, S., Hancock, M., and Isenberg, T. Exploring 3D interaction in alternate control-display space mappings. In *Proc. IEEE Symp. on 3D User Interfaces (3DUI)*. 17-24, 2007.

Short Papers, Workshop & Symposium Contributions [2-3 reviews of abstract, 1 stage process]

15. **Langer, R.**, West, A., Hancock, M., Randall, N. Applications as stories. In *Designing gamification: Creating gameful and playful experiences—CHI 2013 Extended Abstracts*. 4 pages, 2013.
16. **Chang, Y.-L. B.**, Hancock, M., and Scott, S. D. Improving the social gaming experience by comparing physical and digital tabletop board games. In *Player Experience in Videogames*—workshop in conjunction with *Fun and Games*. 4 pages, 2012.
17. Holmes, R., Notkin, D. and Hancock, M. Industrially validating longitudinal static and dynamic analyses. *ICSE Workshop on User Evaluation for Software Engineering Researchers*, 43-44, 2012.
18. Isenberg, T. and Hancock, M. Gestures vs. postures: 'Gestural' touch interaction in 3D environments. In *CHI Extended Abstracts*. 9 pages, 2012.
19. Isenberg, P., Hinrichs, U., Hancock, M., Tobiasz, M., and Carpendale, S. Information visualization on interactive tabletops in work vs. public settings. In *Proc. Workshop on Collaborative Visualization on Interactive Surfaces (CoVIS 2009)*. Appeared in the Tech. Rep. series of the Dept. of Media Informatics of the Ludwig-Maximilians-University of Munich, Germany in 2010.

Book Contributions

20. Isenberg, P., Hinrichs, U., Hancock, M., and Carpendale, S. Chapter 15: Digital tables for collaborative information exploration. In Christian Mueller-Tomfelde (Ed.), *Tabletops – Horizontal Interactive Displays*. Springer. Mar, 2010.
21. Davies, R., Hancock, M., and Condon, A. Perspectives: Canadian women in computer science. In *Encyclopedia of Computer Science and Engineering*. Wiley InterScience. Jan, 2009.

2.2 Non-refereed contributions

Technical Reports

22. **Bradley, A.**, Hancock, M., and Carpendale, S. Stop using "users"! An examination of word usage in CHI literature and the impact of objectifying people. Technical Report CS-2011-26, University of Waterloo, 2011.
23. **Grubert, J.**, Hancock, M., Carpendale, S., Tse, E. and Isenberg, T. Interacting with stroke-based rendering on a wall display. Technical Report TR-2007-882-34, University of Calgary, 2007.

Invited Talks & Demos

24. Leveraging Physical Actions to Interact with Digital Surfaces (talk). University of Ontario Institute of Technology (UOIT), Toronto, Canada, Jan 2012. Invited by Christopher Collins.
25. Leveraging Physical Actions to Interact with Digital Surfaces (talk). Waterloo Institute for Complexity & Innovation, Waterloo, ON, Oct 2011. Invited by Dawn Parker.
26. Think with your feet (talk). The Museum, Kitchener, ON, Mar 2011. Invited by Sarah Tolmie.
27. Binary Search (Invited 1st Grade Lecture). Captain John Palliser School, Calgary, Canada, February 2011. Invited by Yoonhee Jiang.

28. 3D Tabletop Display Interaction (Talk). Inria, Paris, France, Nov 2010. Invited by Petra Isenberg.
29. 3D Interaction on a Tabletop Display (demo). SMART Technologies, Calgary, AB, Jan 2009. Invited by Shannon Bjarnason.
30. Shallow-Depth 3D Interaction (talk). SMART Technologies, Calgary, AB, Jun 2007. Invited by Michael Boyle.

2.3 Contributions to practical applications of knowledge

Patents

31. Carpendale, S., Hancock, M., **ten Cate, T.**, and Isenberg, T. Method for manipulating a graphic widget in a three-dimensional environment displayed on a touch panel of an interactive input system. US 2011/0069019 A1, (License purchased by SMART Technologies), Issued: Jan 3, 2012.
32. Carpendale, S., Hancock, M., **ten Cate, T.**, and Isenberg, T. Three-dimensional widget manipulation on a multi-touch panel. International Application No.: PCT/CA2009/001734, (Published, License purchased by SMART Technologies), Initial Publication: Jan 13, 2011.
33. Vernier, F. D., Shen, C., Hancock, M. S., Forlines, C. L. Method and system for manipulating graphical objects displayed on a touch-sensitive display surface using displaced pop-ups. U.S. Application Number: 11/057,744 (Submitted; not pursued—company direction shifted), 2006

3. Other Evidence of Impact and Contributions

Popular Media Coverage

34. *Discovery Channel: Daily Planet*, Jan 9, 2008 [interview with Carpendale, S. and Hancock, M.]

Conference Committees

ACM (formerly IEEE) Interactive Tabletops and Surfaces: Program Committee	2008-2012
ACM Interactive Tabletops and Surfaces: Doctoral Symposium Chair	2012
ACM Interactive Tabletops and Surfaces: Posters Co-Chair & Minute Madness Chair	2009-2010
ACM SIGCHI: Work in Progress Committee	2009
IEEE Tabletops and Interactive Surfaces: Student Volunteer Chair	2007

Reviewing (year[number of articles])

Conferences: ACM CHI (2008[4], 2009[3], 2010[6], 2011[6],2012[4],2013[7]), ACM UIST (2008[5], 2009[5], 2010[5], 2011[2],2012[5]), Graphics Interface (2010[2], 2011[2],2012[1],2013[1]), IFIP Interact (2011[1],2013[2]), IEEE 3DUI (2011[1],2013[1]), IEEE Vis 2011[1], IEEE EuroVis 2011[1], Eurographics 2011[1], ACM TEI (2009[1], 2011[1]), IEEE TIS (2007[4]), Pervasive (2007[1]);

Journals: IJHCS (2010[1], 2011[2],2013[1]), IEEE CG&A (2012[1]), IwC (2007[1],2012[1]), TOCHI 2011[1], IEEE TVCG 2011[1].

Selected Research Awards

Best Paper Honorable Mention Award: CHI 2013 (top 5% of 1963 submitted)	2013
Nomination by University for CGS/UMI Distinguished Dissertation Award	2012
Faculty of Engineering Distinguished Performance Award ($2,500; university award)	2011
Nomination for Best Paper Award: CHI 2007 (top 5% of 571 submitted)	2007
Alberta Ingenuity Studentship ($22,000/year; provincial award)	2005-2010
NSERC Postgraduate Scholarship D ($21,000/year; national award)	2005-2007

5. Contributions to the Training of HQP

As director of the Touchlab, I currently supervise 4 master's students and 1 research associate, and co-supervise 3 PhD students. Two of my master's students have also recently successfully completed their degrees and my two master's-level exchange students have also completed their degrees successfully, one of whom was not only successful at publishing her work at ACM CHI, the premier conference in Human-Computer Interaction, but also received a Best Paper Honorable Mention Award, awarded only to the top 5% of papers at this very prestigious HCI conference. A significant portion of this work was done at Waterloo under my supervision, including the study analysis and paper writing. I have also supervised 4 design course undergraduate projects, 3 of which won 1st or 2nd prize at the departmental level, and one whose design won a $4.5K prize at a competition sponsored by local company Desire2Learn.

I use a scaffolding approach to supervision, with a focus on fostering an environment where HQP from a variety of disciplines are mentored by more senior HQP, and work collaboratively to become mentors themselves to incoming HQP. In my lab, students work directly with each other, as well as the latest interactive technology, such as multitouch digital tables and mobile devices. I and my HQP also work closely, through mentorship and sharing of equipment, with the Collaborative Systems Laboratory, run by Dr. Stacey Scott in Systems Design Engineering, and with the HCI lab, run by Drs. Edward Lank and Michael Terry in Computer Science. In addition to the dissemination of work through posters and presentations at conferences, HQP are encouraged to demonstrate their work to these other labs, and to industry partners and collaborating researchers who visit from around the globe.

As Associate Director of Research Training for the Games Institute at the University of Waterloo, Collaborating Network Investigator for the GRAND National Centres of Excellence program, and Collaborator on the NSERC SURFNET research network, I and my HQP also interact regularly with an interdisciplinary team of researchers at the University of Waterloo and across Canada, as well as with local, Canadian, and international industry partners. My interactions with these networks typically involve research projects with HQP from multiple disciplines, such as a current collaborative project between my HQP, Rebecca Langer (Computer Science), Dr. Neil Randall (English Language and Literature) and his HQP, and a mobile phone game development company, Visdatec Inc. My involvement with these research networks also involves technology transfer through demos by HQP. Through direct interaction with industry, my HQP develop practical skills that make them ideal candidates for employment upon graduation, such as the ability to describe research to people from industry, the opportunity to work in teams involving designers and developers, and to see their work become patented and licensed [31,32].

As a new assistant professor, I have successfully graduated 2 master's students, both of which will be starting industry positions in technology-based companies, with several more planned to graduate in 2013. However, as a PhD student, I also played an unofficial co-supervisory role for two graduated master's students from the University of Groningen (The Netherlands), and two undergraduate research assistants at the University of Calgary. Mr. ten Cate's work contributed to two conference publications [7,9] and U.S. and international patent submissions [31,32] that were successfully transferred to SMART Technologies as an exclusive license. He is currently a Site Reliability Engineer at Google.

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

SEND ONE ORIGINAL ONLY DO NOT PHOTOCOPY

APPENDIX A
Personal Data
(Form 100)

Complete this appendix (i) if you are an applicant or co-applicant applying for the first time; (ii) if you need to update information submitted with a previous application; or (iii) if you do not hold an appointment at a Canadian postsecondary institution. For updates, include only the revised information in addition to the date, your name and your PIN.

This information will be used by NSERC primarily to contact applicants and award holders. It may also be used to identify prospective reviewers and committee members, and to generate statistics. It will not be seen or used in the adjudication process.

Date: 2013/04/22

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Hancock	Mark	MS	**Valid** 251159

Position and complete mailing address if your primary place of employment is not a Canadian postsecondary institution or if your current mailing address is temporary

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
1 (519) 8884567 36587		mark.hancock@uwaterloo.ca

Telephone number (alternate)

Give an alternate telephone number only if you can be reached at that number during business hours.

Gender (completion optional): [X] Male [ ] Female

LANGUAGE CAPABILITY

English	Read [X]	Write [X]	Speak [X]
French	Read [X]	Write [ ]	Speak [ ]

I wish to receive my correspondence: in English [X] in French [ ]

AREA(S) OF EXPERTISE

Provide a maximum of 10 key words that describe your area(s) of expertise. Use commas to separate them. If you have expertise with particular instruments and techniques, specify which one(s).

human-computer interaction, tabletop displays, 3D manipulation, multitouch interaction, multi-display environments, surface computing, interface design, virtual tools, game design, game production

Research subject code(s)

Primary: 2700

Secondary: 2710