LOI For Phase 2 Projects / Subprojects template

Completed Letters of Intent (LOIs) should be sent as email attachments to applications@grand-nce.ca with "GRAND Phase 2 LOI" as the subject line.

A successful proposal will address problems of significant relevance to the GRAND research program and must meet all of the guidelines for projects within GRAND, including the following mandatory requirements:

- The project must address significant research issues relevant to one or more of the GRAND Challenges identified for Phase 2 of the GRAND NCE
- The Project Leader and Co-leader must work at different universities; often they will represent multiple disciplinary approaches, appropriate to the project.
- There must be at least three researchers (including the Project Leader and Co-leader) who are or are eligible to be Principal Network Investigators within the GRAND NCE.
- There must be at least one Project Champion personally involved in planning and carrying out the project who is affiliated with a current or potential GRAND Partner drawn from the receptor community.
- One or more Partners from the receptor community must commit to making significant cash or in-kind contributions to the project.
- A current NSERC Form 100, SSHRC CV, or CIHR Common CV for both the Project Leader and Co-leader must be submitted as attachments to the LOI. Failure to include these attachments will be cause for immediate rejection.

Detailed instructions for completing this LOI template are on Page 2. More information on Phase 2 of the GRAND NCE is available on the GRAND website at the following URL, which will be updated with links to additional information as it becomes available: http://grand-nce.ca/renewal

Please note: If you complete this form using Preview, do not enter more text than is visible within the dimensions of the provided text box. Text that exceeds the visible limits will not be reviewed.

Project Title and Description

☐ Full project LOI ☐ Subproject only LOI

Title of proposed project

LPD: Living with Personal Data

Brief description for public use

Data surrounds us in our daily lives, ranging from activity logs, to health issues, to home energy use, to social media, to data about our hobbies and interests. There is enormous potential to use this data to understand ourselves better and make positive changes in our lives. Yet supporting the analysis and understanding of personal data brings a unique set of challenges. Our interdisciplinary approach, determines best practices by combining computer science, social science, ethnographic, art and design methods.

Proposed Project Leader

☐ Form 100, SSHRC CV, or CIHR CCV has been attached

Name	Email
Sheelagh Carpendale *sheelagh*	sheelagh@ucalgary.ca
University: University of Calgary	Title/Position: Professor (CRC, IRC)

Proposed Project Co-leader

☐ Form 100, SSHRC CV, or CIHR CCV has been attached

Name	Email
Paula Gardner	pgardner@faculty.ocadu.ca
University (must be different from Project Leader): OCADU	Title/Position: Associate Professor

Proposed Project Champion

☐ Confirmed ☐ Contacted ☐ Not Yet Contacted

Name	Email
Rock Leung	rock.leung@sap.com
Organization: SAP	Title/Position: Manager: SAP's Academic Research Center (ARC)

Instructions for Letter of Intents for Phase 2 of the GRAND NCE

Front Page: All fields are mandatory. (a) Provide a project title and indicate whether the LOI is for a full project with subprojects or is only for a single subproject. LOIs that only propose a subproject will be matched with related LOIs to form full projects. (b) Provide a brief description of the proposed research suitable for posting on a public website that explains the project in terms accessible to the digital media community. (c) Provide the name, email address, university, and title for both the proposed project leader and the proposed project co-leader. (d) Provide the name, email address, organization name, and title for the proposed project champion (a person affiliated with a project partner who will be engaged in planning the project) and indicate whether the project champion has been confirmed, has only been contacted, or has yet to be contacted.

This Page: Read all of the instructions for completing the LOI template before filling out any of the information on later pages.

In **Part A**, provide the names of up to six partner organizations, indicate whether each has been confirmed, has only been contacted, or has yet to be contacted, and provide a brief explanation for how each organization will be involved in the project either as an active participant or as a potential receptor that will benefit from the research.

In **Part B**, list all GRAND projects that are related to the new LOI and also any other LOIs you are aware of that may be relevant to the new LOI.

In **Part C**, list up to nine additional co-applicants (not including the individuals listed on Page 1) who are expected to be involved as active participants in the research project. Indicate for each whether the individual is a project champion from the receptor community or an academic researcher.

In **Part D**, succinctly summarize (up to one half page) the problem being solved by the research.

In **Part E**, provide an overview (up to one and one half pages) of the proposed solution and the approach that will be taken in the research. Include relevant details about the theoretical framework, significant previous work, methodological approaches, and how the research will be managed and structured to achieve the desired goals. If you checked the box on the **Front Page** indicating you are submitting an LOI for only a subproject, just use the first box for **Part E**, don't use the second box on the continuation page.

In **Part F**, describe up to six subprojects (up to one half page for each subproject) that will be pursued during the first two years of the project. Indicate for each subproject the research question(s) that will be addressed, the relationship of the subproject to the rest of the project, the deliverables and assessment criteria appropriate for evaluating the success of the subproject, and the time frame (start and finish dates) estimated for the subproject. If you checked the box on the **Front Page** indicating you are submitting an LOI for only a subproject, enter "**N/A**" in all of the fields in **Part F** and continue to **Part G**.

In **Part G**, explain the likely technology transfer, knowledge mobilization, knowledge translation, or other activities that are planned for the project and how they may provide benefits to the receptor community.

In **Part H**, explain how the project will interact with other projects and the ways in which it may support or otherwise enhance the overall impact of the network.

In **Part I**, explain specific ways in which current or future partners will participate in the project and the mechanisms that will be used to ensure that this takes place.

In **Part J**, for each of the seven GRAND Challenges check whether the project will make its primary research contribution (check exactly one box) or a secondary research contribution (as many additional boxes as apply) to the challenge. Check "**N/A**" for any challenge that is not significantly impacted by the proposed research. For each challenge where a contribution is expected, provide a brief description of the likely contribution and its importance to the receptor community. The "Other" category may be used to describe anticipated contributions to the research infrastructure and enabling technologies and methodologies used in the GRAND NCE, or to other areas relevant to digital media that may be impacted, if the proposed research is expected to make a significant contribution in these areas.

Part A: Receptors and Partners list up to six organizations	
Organization SAP: Rock Leung	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement Tory (PI), Hawkey, Tang, and Collins have been awarded an SAP ARC fellowship/NSERC CRD grant to investigate "Customizable visual analytics for personal use". SAP is interested in the design ideas that will be generated by this project. SAP is supporting an NSERC strategic project by Conati, Tory, and two others on adaptive visualization.	
Organization Google: Tejinder Judge	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement Google is interested in technology for documenting, collecting, managing, and sharing data associated with life milestones (e.g., child development) as a part of social media and video chat systems. We have received in-kind support from them for past projects and plan to continue this relationship with additional funding in the future.	
Organization Quillsoft Ltd: Fraser Shein	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement Quillsoft innovates in software for reading, writing, and language learning with a focus on those who have learning difficulties. Quillsoft has funded research (PI: C. Collins) into new designs for reading software and is interested in collaborating on the development of analytic interfaces for students and teachers to track and guide learning.	
Organization Perch Communications: Danny Robinson	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement Perch is interested in technology for collecting, sharing, and viewing large volumes of data from asynchronous and synchronous video chat systems for family communication. They will provide in-kind and possibly monetary support and we already have a well established relationship with setup for tech transfer.	
Organization Fraser Health: Susan Chunick	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement Surrey Memorial Hosp., Dr. Owen Williamson; Women & Children's Hosp., Dr. Gillian Lauder, Vancouver General Hosp., Dr. Michael Negraeff; and PainBC, Maria Hudspith are interested in tools that help patients manage chronic pain, in partnership with their doctors. In-kind: participants, access to data, experts, KTEE.	
Organization Kensington Hospice & Princess Margaret Hospital	☑ Confirmed ☐ Contacted ☐ Not yet contacted
Brief description of involvement PMH, Dr Gary Rhodin. These provide palliative care in hospice and hospital. PMH and Kensington are committed to enhancing the palliative experience. They will provide access to sites, participants, and clinicians, with in-kind support. Research collaboration is already established	

Part B: Relations to existing and proposed projects in the GRAND NCE
Related Current Projects CPRM, GAMFIT, AFEVAL, INCLUDE, HCTSL, AMBAID, AESTHEVIS, SHRDSP, SKETCH, PRIVz
Related LOIs AVID, KidzHealth, Sensemaking++, G4HLTH, KIDZ, SHARE, Creative, MAKE, PLWD, ENGAGE, BOX, MOVITA, NDN

Part C: Additional Co-Applicants List up to nine additional co-applicants		
Name Melanie Tory	Email mtory@cs.uvic.ca	☐ Project Champion ☑ Researcher
Organization University of Victoria	Title/Position Associate Professor	
Name Lyn Bartram	Email lyn@sfu.ca	☐ Project Champion ☑ Researcher
Organization SIAT, Simon Fraser University	Title/Position Associate Professor	
Name James Reynolds	Email jnr@queensu.ca	☐ Project Champion ☑ Researcher
Organization Queens University	Title/Position Professor (NEURODEV)	
Name Kevin Stanley	Email kstanley@cs.usask.ca	☐ Project Champion ☑ Researcher
Organization University of Saskatchewan	Title/Position Associate Professor	
Name Christopher Collins	Email Christopher.Collins@uoit.ca	☐ Project Champion ☑ Researcher
Organization UOIT	Title/Position Assistant Professor	
Name Diane Gromala	Email dgromala@sfu.ca	☐ Project Champion ☑ Researcher
Organization SIAT, Simon Fraser University	Title/Position Professor (CRC)	
Name Anthony Tang	Email tonyt@ucalgary.ca	☐ Project Champion ☑ Researcher
Organization University of Calgary	Title/Position Assistant Professor	
Name Karon MacLean	Email maclean@cs.ubc.ca	☐ Project Champion ☑ Researcher
Organization UBC	Title/Position Professor	
Name Kirstie Hawkey	Email hawkey@cs.dal.ca	☐ Project Champion ☑ Researcher
Organization Dalhousie University	Title/Position Assistant Professor	

Part D: Summarize the problem being solved (1/2 page)

Personal data surrounds us in our daily lives. There is enormous potential for us to use these data to make positive changes in our lives and the lives of others. However, greater access to data does not on its own lead to insight and value. Data must be made accessible, understandable, and interpretable before interaction with it can lead to insight or actionable knowledge. Visual analytics tools offer this opportunity, but are often designed for expert users doing deep analysis of the data. The main question, then, is how can we bring the power of visual analytics to everyone? Living with Personal Data aims to answer research questions related to this overall goal, for example:

1) Supporting varied user backgrounds: How can support be given to non-expert users to make sense of complex visualizations and increase their visual literacy? How can these personalized to match a user's traits, mental state, knowledge, abilities, and context?

2) Collecting useful data: How can we assist users to collect data about their personal lives? How can we make the data collection process seamless and easy? What information do people need and why? At what granularity should the data be collected and presented?

3) Contextual Data and Data Sharing: Data is better interpreted in the context of other data. For example, my exercise logs may make more sense if I compare them to data from last month or my friends. Sharing personal data could help users to understand their data in the context of others. But we need to understand how to choose which data is most helpful? How should others' data be presented and how and when should it be anonymized?

4) Supporting use contexts: People want to examine personal data with a range of places, devices, and goals, which present different use contexts than traditional in-depth data analysis at a workstation. How can we support fleeting and peripheral interactions with visualizations? How can data visualizations be integrated into people's environments in a welcoming and intuitive way?

We will iteratively develop and evaluate new tools to support these goals, with emphasis on applications identified by our receptors. By helping our receptors address the questions they will be able to deploy visualization tools to a wider and more diverse user community.

Part E: Summarize the proposed solution and approach (1 ½ pages)

Our key research strategy is to take advantage of our multi-disciplinary team. Our team is composed of artists, designers, visualization experts and HCI researchers. Additionally within these groups we have experts in sensor and data collection, in visualization, in application of entho-methodologies, in sharing as in both computer supported cooperative work and in on-line sharing and game playing. We also have experts in affect (how interfaces impact us emotionally) and perceptional factors.

In fact, our team is too large to fit in the nine provided spaces so we list the rest here: Hancock, Neustaedter, Bateman, Mandryk, Irani, Woodbury, Popowich, Shaw, Gutwin, Conati, Moffatt , Sellen, Pavlidis, Fels, Davila, Cercone, Morgan, Gorniak. With this interdisciplinary team, we will use many methodologies including:

Observation. The empirical foundation of our research comes from qualitative research. Particularly since we are working with personal data and personal lives, we will start from the principle that technology design should be informed by how people manipulate information as they live, learn, work and play. Our design process starts with observational studies, participatory design, activity research and a strong individual, customer and stakeholder involvement. Our outcomes will expand our understanding of what aspects of the work or leisure activities would benefit from technological support. Our group contains extensive experience with observational methods that will provide us with our first set of knowledge and domain requirements. We will examine the understandings gained in light of theories on human behavior. Our goal is to identify essential design criteria, empirical principles, and theories that lead to effective, efficient, and satisfying embodied interactions.

Task and domain settings. Some behaviors are generalizable, while others are location and activity-specific; thus, we need a better understanding of domain-specific problems (Maxwell 2005). We will focus on specific data people need and use, identify important features of information that they require, understand the specific nature of their personal interests, and look for factors that arise from their everyday social context and routines. We will work with client, consumer, citizen and patient stakeholders to understand their needs, and perception of visualisation tools and interfaces, responsive visualisations and persuasive and decision making visual resources.

Part E: Summarize the proposed solution and approach (continued, but only for full project LOIs)

Creation. Creativity transforms the above understanding into innovative designs. To maximize creativity, we will combine the insights gained through observations with innovation-nurturing techniques as exemplified by the artist and designers among us, such as charrettes, brainstorming, sketching and focused idea generation via trigger cards. We will also use rapid prototype techniques, visualizations, and interface designs that reveal not only information content, but allow us to explore how the interaction techniques, interface designs and workflows fit with people's everyday practices.

Evaluation. All systems will be evaluated as they are being developed. We will use qualitative as well as quantitative evaluation techniques as appropriate. This includes focus groups, Wizard of Oz approaches, usability studies, controlled experiments in the laboratory, as well as surveys, observations, action research, and case studies. The empirical data gathered will be qualitatively or quantitatively analyzed (for example, using grounded theory for textual data). Iterative evaluations will allow us to not only validate good approaches, but to critique and understand less successful ones. In essence, evaluation allows us to reflect on our solutions: to decide what to change in the next iteration, to propose what could serve as effective design principles, and to analyze how our approaches would work in practice.

Infrastructure. Iterative development is fundamental to our methodology. This in turn requires a solid infrastructure that allows us to rapidly prototype ideas, to iteratively refine them, and to formatively evaluate these systems by deploying robust working prototypes. We will use surface applications developed with our industrial partners to determine which concepts, approaches and frameworks are used in multiple systems, and we will identify requirements for reusable frameworks and APIs. Based on this empirical evidence of reuse potential, we will develop these frameworks and toolkits, and distribute them as building blocks for the next generation of applications.

Process abstraction. We also investigate the processes that enable design. We will exploit our interdisciplinary group and learn more about best practices for working with personal data. We will generalize and package broadly applicable designs as reusable components. We will refine these prototypes using sound software engineering principles so that they can be evaluated as industrial case studies. Working in interdisciplinary teams will help develop visual analytics that contextualise and visualise data distinctly, for the population researched needs, prioritizing the communication value of the visual aesthetics, and organization.

Here are additional receptors that did not fit in the form.
Child Development Centre (Hotel Dieu Hospital, Kingston); Children's Hospital of Eastern Ontario (Ottawa); Manitoba FASD Diagnostic Clinic (Winnipeg); Glenrose Rehabilitation Hospital (Edmonton); Women and Children's Hospital (Vancouver); Public Health Agency of Canada, Statistics Canada, and the Fetal Alcohol Syndrome Disorder Network (Gardner, Reynolds, Davila, Popowich, Cercone): These organizations are all working with the NEURODEV/GRAND affiliated researchers, providing clients offering data, and as receptor communities that are taking up findings and disseminating to consumer group and policy groups. Calgary Health Region (John Conly) and Ward of the 21st Century (Bill Ghali) Carpendale works regularly with these groups.
BC Hydro: Jim Nelson. Bartram will contact specifically for this, they will be an active partner in the Sustainability theme, and cross over projects between this and Sust2 will involve them. Bartram will ensure letter of support will identify PVA. In-kind; cash support is indicated from CRD co-application. Participants will be identified with them.
Desire2Learn: Rose Kocher. Desire2Learn provides on-line learning products and services with a focus on personalize learning experience. They have over 10 million users, with products running on a wide range of platforms (Popowich will contact about GRAND participation).
Additional sensor companies include: InteraXon, Toronto (confirmed, Gardner); Gesture Tech (confirmed Gardner); Blacktree Health (Contacted, Gardner)

Part F: Subprojects list up to six subprojects that will be undertaken in the first two years (only for full project LOIs).

Subproject Name (1)

Collecting and processing personal data

Summary

People: Lead Stanley, Co-Lead MacLean, Bartram, Carpendale, Conati, Gardner, Gromala, Gutwin, Hawkey, Mandryk, Shaw, Tory
Partners: Saskatoon Health Region, Fraser Health Authority, InteraXon, Thought Technologies, Haptok, UofS Venture
Personal data is collected in a myriad of ways from a cookie collecting clicks on a webpage, to the smartphone in our pockets recording our physical context, to medical devices and charts recording health parameters on an annual, monthly or continuous basis. However, different uses have different requirements for data abstraction and fidelity. This project will provide a fundamental, crosscutting framework for linking personal data to utilization requirements. In particular, we will look at data's temporal fidelity and the impact of aggregation or abstraction algorithms impact on visualization comprehensibility for different users and goals. We will use information about fidelity requirements to examine the utility and propriety of different contextual measurements for differing applications. Greater fidelity, and therefore intrusion on the users life may be warranted in a health application that considers therapy compliance, health behavior, or pain management than would be required for an application to help improve athletic performance or general life rhythms, such as sleep-wake cycles, or commuting habits. This subproject will also consider user-in-loop measurement systems, and examine the impact on data quality, user perception and behavior of prompted or informed measurements systems

Subproject Name (2)

Personal data in our lives at home

Summary

(lead: Neustaedter; co-lead Tory; Bartram, Bateman, Carpendale, Collins, Conati, Gromala, Gutwin, Hawkey, Moffatt, Sellen, Shaw, Stanley, Tang, Woodbury). Receptors: SAP and MetroQuest support a strategic grant on this topic and expressed interest in this LOI. Our focus will be on understanding of what data families care about, how they work with it, and what they would want to do with it (includes context of families, individuals, and shared households). Data of interest includes: energy use, health data, fitness, finance, child development and milestones, care giving (children of elderly parents, parents of young children), diet, cooking data, and to do lists (structured and unstructured data, ownership issues, patient-physician partnerships, family sharing of health data, end-of-life and chronic disease contexts). We will explore how families capture, visualize, review, and share moments of interests, travel experiences, and child development milestones. We are interested in what families do with data, how they work with/share it, who gets to see what, balancing power. This project will explore personalization issues. How to present complex visual data to people with different abilities, mental states, preferences, and circumstances? Currently there is little understanding of what differences matter and how to personalize a visualization once those differences are identified. Objectives include: 1) Investigation of habits to be considered for personalization. 2) Exploring the space of personalization options, from adaptable to adaptive to combinations in between.

Subproject Name (3)

Sharing and social aspects of personal data

Summary

(Lead Gutwin, co-lead Moffatt. Bartram, Bateman, Carpendale, Collins, Gromala, Gutwin, Hancock, Hawkey, Irani, Moffat, Neustaedter, Shaw, Stanley, Tang, Tory). Receptors: PainBC, Ayogo, and communities interested in supporting the sharing of personal data in a variety of settings. Often, sharing personal information or accessing others' personal data can lead to improved outcomes. It can enable us to better appreciate and understand our data, and can lead to new insights; e.g., comparing data with others could lead to new motivation to exercise, a better understanding of a health condition, the learning of better game playing strategies, and strategies for handling complex, time-sensitive information in uncertain/emergency situations. Specific questions should be considered include: Who might benefit from my data? Are there others like me? How can I best compare my data with others? How can shared data displays be designed to foster a desired experience (e.g., promoting or minimizing feelings of competition)? What will happen to my shared personal data; who will see it, who will use it, who will own it, where will it be kept? This project will have FOUR GOALS: 1) to explore the motivations and mechanisms for sharing personal data with others; 2) to build an understanding of the contextual factors that influence people's decision to share personal data; 3) designing and developing new systems to appropriately display shared personal data; and, 4) assessing the impact and benefits to sharing personal data.

Part F: Subprojects (continued, only for full project LOIs)

Subproject Name (4)

Visualizations for Personal Change and Decision Making

Summary

People: (Lead Irani, co-lead Bateman, Carpendale, Cercone, Conati, Fels, Gardner, Gromala, Mandryk, Popowich, Reynolds, Sellen, Shaw, Stanley, Woodbury)
Receptors: Arthritis Research Centre; Canadian Pain Society; Fetal Alcohol Syndrome Network; Child Development Centre (Kingston); Manitoba FASD Diagnostic Clinic (Winnipeg); Glenrose Rehabilitation Hospital (Edmonton); Women and Children's Hospital (Vancouver); Ayogo Games Inc., Connect Health (BC wellness centre); PortaLife Solutions; Ignite Play; (shortened for space limits). We are especially interested in visualization for personal change and how contextual decisions can be based on triggers: who you are with, where you are, cognitive state. Includes self improvement decisions and habit modification: diet, exercise, personal effectiveness, travel planning, becoming more eco-conscious, improving learning outcomes, learning how to play games better, and patient decisions around medication & self-managing. Currently data is explained through many rhetorical devices, especially narrative. We are interested in an informal logic of explanation. We will focus on applying persuasive strategies and cognitive ergonomics to interactive visualizations, modeling the strength of various strategies for different types of people (personalized approach), and evaluating the efficacy of visualizations, focusing on domains of interest to collaborators and receptors on the project.

Subproject Name (5)

Personal Decision Making with Social and Population Data

Summary

People: (Lead Costani, co-lead Reynolds, Gardner, Conati, Cercone, Davila, Gromala, Pavlidis, Popowich, Stanley)
Receptors: Child Development Centre (Hotel Dieu Hospital, Kingston); Children's Hospital of Eastern Ontario (Ottawa); Manitoba FASD Diagnostic Clinic (Winnipeg); Glenrose Rehabilitation Hospital (Edmonton); Women and Children's Hospital (Vancouver). We will explore how social trend and population data, health, medical, epidemiological, social findings, can be usefully collected organized and visualized. Using an ethnographic approach to understand receptor communities, we will innovate visual techniques and interfaces to help stakeholders organize, process and visualize massive data sets. We will use data aesthetics techniques to help translate complex science and social science for citizens, enabling them to understand medical research and social trend information. Our domain-specific approach will weigh information according to personal (cultural, age, gender, class, health, etc) factors, enabling them to sort the data and findings to their particular profile or situation. We will work with a NEURODEV-developed searchable genetic database, 'Neurocarta,' and create interfaces to process complex data, 'ASPIREdb' with training provided to stakeholders. In the area of FASD, we will explore website resources with access to visualised syndrome data to assist families in making decisions on treatment choices. (NOTE: this is an especially close bridge to CPRM 2.0, but doesn't replicate its sub-projects.)

Subproject Name (6)

Personal Learning Analytics

Summary

(Lead Collins, co-lead Bateman: Conati, Popowich, Tang, Carpendale). Receptors: Quillsoft, Desire2Learn. Questions include: How can information visualization and visual analytics be used to enable reflection on one's own learning in terms of goals and in comparison to peers? Can visualization be used to motivate learning and guide learners to areas of need? What types of data are useful - implicitly gathered, e.g. from analysis of emails to evaluating language, or explicitly provided, e.g. test results? We will conduct investigations in various learning domains, such as: natural language learning (vocabulary development, common grammar errors); and computer programming (e.g., identifying common misconceptions). We will investigate personal learning strategies to provide insight into the relationship between time spent on various learning activities (study, writing, online & classroom activities), usage patterns with specific educational media (e.g. educational games, interactive simulations) and the resulting progress. New techniques for self-monitoring and motivating learning will benefit Canadian students and teachers who are increasingly engaging with technology and will welcome novel interfaces to inform learning and teaching strategies. The outcomes of this sub-project will benefit partner Quillsoft, developer of reading, writing, and language learning software, and, through them, school boards throughout Canada who use to Quillsoft software.

Part G: Summarize how the proposed project will pursue knowledge and technology exchange and exploitation activities within the context of GRAND.

Knowledge exchange and dissemination is the core work of PLD, which focuses on assisting individuals to constructively leverage their data. Beyond the traditional publication, conference and workshop dissemination, we will employ the following techniques reliably routinize KTEE:
TEACHING TOOLS WORKSHOPS: to disseminate user-ready tools, to receptor communities, such as members of the FASD Network, Pain Clinic personnel, practicing physicians, and consumer advocates.
EXPANDED CONFERENCE DISSEMINATION: to disseminate our tools to external stakeholder groups and consumers to expose them to methods to manage home, medical data and medical decision making and to improve consumer choice-making.
MUD: ROUTINE RECEPTOR OUTREACH: to reach out within GRAND and NEURODEVNET, and allied networks, and through them to industry and receptors. Each subgroup will create a publicity arm, that routinely updates receptor communities, (community and advocacy groups, professional academic and science organizations). We will institute monthly, well-designed "MUD" (Manage Ur Data) E-Alerts, announcing new tools available for stakeholders to manage their data.
RECEPTOR DISCOVERY: to continuously expand our receptor base, each subproject will appoint RAs to follow threads from existing networks, seeking to expand our receptor communities by 10% per year.

Part H: Summarize how the project will network with other projects within GRAND.

PLD synthesizes and involves many elements emerging from GRAND-1 which involve data, its collection and sense-making across domains (health, privacy), user groups (disabilities, children, chronic pain), and foci (modeling sensed data, displaying data appropriately, cognitive processing) (Sensemaking, HCTSL, INCLUDE, PRIVN, CPRM, AFEVAL, KidzHealth, AMBAID, GAMFIT). We foresee productive Intersections with several GRAND-2 LOIs, the following highlights a few connections:
- COGS (Mandryk, Neustaedter) supports relationships through games: collecting, sharing and viewing family-based media.
- KIDZ (Antle, MacLean) supports children's learning via digital interaction: needs data gathering and display, and acts as a receptor.
- CPRM2 (Shaw, Li) develops methods and tools for pain and related illnesses: needs to collect and track personal data.
- G4HLTH (Graham, Stanley) explores games that support health: the technical underpinnings of sp1, and some aspects of persuasive presentation relate to ubiquitous exergames as well.
- PRIV (Biddell, Jacquelyn Burkell) explores how privacy issues are impacted in data collection and dissemination.

LPD, brings its focus on the distinctive issues related to unorganized and hard to manageable data sets to the above groups.

Part I: Summarize how one or more current or potential GRAND partners will be engaged in and benefit from the proposed research.

Many of LPD partners are already deeply engaged. There are too many examples for this small space. To mention a couple of examples, SAP's Rock Leung has already taken a very active interest in this research. He has expressed interest in being part of research discussions and in offering internships for students. SAP thinks that results from a more personal approach to information applications may be of great interest to them. Similarly, SMART is interested offering internships. The learning analytics research has gathered considerable interest from IT companies that support learning. Many of the researchers involved have strong links with health institutions. One of Carpendale's (and HQP's) decision support tools is proceeding forward towards clinic trials in the Calgary Health Region. Intentions are to make it available to all doctors.
Also, in conjoining with NEURODEV network's established researchers, we align our networks with already established collaborations with Statistics Canada, the Public Health Agency of Canada, receptor communities such as the FASD pan-Canadian network, myriad hospitals and clinics, plus industrial stakeholders. Because our visualization tools are designed with receptors, and are user-ready products, receptors receive and are immediately disseminate to healthcare providers, consumers, policy makers and industry receptors.

Part J: GRAND Challenges Check all that apply and briefly describe anticipated impact	
Entertainment ☐ Primary impact ☒ Secondary impact ☐ N/A	This project has an interesting and complex relationship with entertainment. First, the most common setting for use of personal data is in one's everyday life. When your work is not requiring that you examine this data, it becomes one of the challenges of the creators to make appealing, fun and yes perhaps even entertaining. This group has lots to learn from people who understand entertainment
Learning ☐ Primary impact ☒ Secondary impact ☐ N/A	We have a strong relationship to learning. Some of our receptors (Quillsoft and Desire2Learn) are IT companies focused on software that helps people learn. One of our sub-projects Personal Learning Analytics, also has this focus.
Healthcare ☐ Primary impact ☒ Secondary impact ☐ N/A	Many subprojects in this LOI deal with health and medical data, particularly how to manage and leverage the masses of data collected from individuals, and specific populations, for improved illness prevention, health and wellness maintenance and disease treatment, as well as in forecasting health and wellness trends and epidemiological planning future health care needs for specific populations.
Sustainability ☐ Primary impact ☒ Secondary impact ☐ N/A	While sustainability is not our focus, it is one of the most obvious applications. As citizens we all have data, or can collect data about our impact on the ecology (carbon footprint, utility use, etc.). Through, collecting, visualizing and sharing this data among peers, citizen action toward greening environment becomes more possible.
Big Data ☒ Primary impact ☐ Secondary impact ☐ N/A	This project first and foremost deals with data --big, medium and small sized data sets that pose challenges to individuals and institutions and industry organizations, in regard to mining, archiving, processing, and transforming unruly, disorganized contents into legible, comprehensible and useful information.
Work ☐ Primary impact ☒ Secondary impact ☐ N/A	While our focus in on data in our personal lives, there are many areas where our personal data interacts with workplace data. A primary example of this is in health care. Both doctors and patients need access to and understanding of one's personal data, thus our research will impact medical practitioners work. Studying individual's learning challenges can impact those who work in education.
Citizenship ☐ Primary impact ☒ Secondary impact ☐ N/A	Since our primary is to empower us as individuals, it will lead to better informed citizens, which in turn can lead to improved citizenship.
Other ☐ Primary impact ☐ Secondary impact ☐ N/A	

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: 2013/06/15

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Carpendale	Sheelagh	MST	Valid 146129

☐ 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: Professor

Department: Computer Science

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	Computer Science	Simon Fraser	CANADA	1992 / 06
Doctorate	Computer Science	Simon Fraser	CANADA	1999 / 03

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	3		5		8
Master's	1	2	3	4	10
Doctoral	2	8	5	1	16
Postdoctoral	1		1	3	5
Others		2	7	9	18
Total	7	12	21	17	57

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

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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)
Professor	Calgary	Computer Science	2010/04
Consultant	Microsoft	Microsoft Research	2010/04
Adjunct Associate Professor	University of Toronto	Computer Science	2007/05
Associate Professor	University of Calgary	Computer Science	2004/07 to 2010/03
Adjunct Senior Artist / Researcher	Banff Centre for the Arts	Banff New Media Institute	2001/06 to 2009/04
Computer Visualization Consultant	Braunarts	Antarctic Waves Project	2001/05 to 2002/12
Assistant Professor	University of Calgary	Computer Science	2000/07 to 2004/06
Limited Term Faculty	University of Calgary	Computer Science	1999/10 to 2000/06
Research Associate	Simon Fraser University	SEED Project School of Computing Science	1996/09 to 1999/09

Personal identification no. (PIN)	Family name
Valid 146129	Carpendale

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

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Teaching Assistant	Simon Fraser University	School of Computing Science	1996/01 to 1996/04
Part time Research Assistant	Simon Fraser University	School of Computing Science	1992/09 to 1996/08
Full time Research Assistant	Simon Fraser University	School of Computing Science	1992/01 to 1992/08
Computer Consultant	Interactive Video Disc Project	KYAC(Knowledge for Youths About Careers)	1991/05 to 1991/12
Software Designer	MPR Teltech Ltd.		1990/09 to 1990/12
Programmer	ALI Technologies		1989/09 to 1989/12

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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

Carpendale, M.S.T. and Greenberg, S.	Industrial Research Chair in Interactive Technologies SMART Technologies (ended August 2011) 10 hours/month	100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%)	2007 2008 2009 2010 2011
Carpendale, M.S.T. and Greenberg, S.	Industrial Research Chair: Interactive Technologies (matches SMART funds) iCORE (now AITF) (ended August 2011) 10 hours/month	100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%)	2007 2008 2009 2010 2011
Carpendale, M.S.T. and Greenberg, S.	NSERC/AITF/SMART Technologies: Industrial Research Chair in Interactive Technologies NSERC and AITF (was iCORE) (50/50) 20 hours/month	200,000 (40%) 200,000 (40%) 200,000 (40%) 200,000 (40%) 200,000 (40%)	2008 2009 2010 2011 2012
Carpendale	Interactive Information Visualization NSERC NSERC Discovery 20 hours/month	35,000(100%) 35,000(100%) 35,000(100%) 35,000(100%) 35,000(100%)	2008 2009 2010 2011 2012

Personal identification no. (PIN)	Family name
Valid 146129	Carpendale

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			
Carpendale M.S.T.	Conference Grant for ACM Interactive Tabletops and Surfaces iCORE	10,000	2009
Carpendale M.S.T.	Interactive Information Visualization NSERC Discovery Grant 40 hours/month	62,000(100%) 62,000(100%) 62,000(100%) 62,000(100%) 62,000(100%)	2012 2013 2014 2015 2016
b) Support currently held			
Carpendale M.S.T.	Canada Research Chair: Information Visualization NSERC Canada Research Chair	100,000 (0%) 100,000 (0%) 100,000 (0%) 100,000 (0%) 100,000 (0%)	2009 2010 2011 2012 2013
K. Booth (PI), S. Carpendale and 48 others	GRAND: Graphics, Animation and New Media NCE 10 hours/month	4,600,000 (1%) 4,600,000 (1%) 4,600,000 (1%) 4,600,000 (1%) 4,600,000 (1%)	2010 2011 2012 2013 2014

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RESEARCH SUPPORT

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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			
F. Maurer (PI), S. Carpendale	SurfNet: Digital Surface Software Application Network NSERC NSERC - Strategic Networks 20 hours/month	1,000,000 (4%) 1,000,000 (4%) 1,000,000 (4%) 1,000,000 (4%) 1,000,000 (4%)	2010 2011 2012 2013 2014
Carpendale M.S.T.	Innovations in Visualization CFI	187,876	2010 2011 2012 2013 2014
Carpendale M.S.T.	Innovations in Visualization SEGP Equipment Grant	182,537	2010 2011 2012 2013 2014
S. Scott (PI), S. Carpendale and 4 others	LEIF EU-Canada exchange programme 5 hours/month	67,000 (15%) 67,000 (15%) 67,000 (15%)	2011 2012 2013

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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

Carpendale, M.S.T. and Greenberg, S.	Industrial Research Chair: Interactive Technologies (renewal) SMART Technologies 10 hours/month	100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%)	2011 2012 2013 2014 2015
S. Carpendale and S. Greenberg	Industrial Research Chair: Interactive Technologies (renewal) Alberta Innovates Technology Futures (AITF, formerly iCORE) 10 hours/month	100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%) 100,000 (50%)	2011 2012 2013 2014 2015
Carpendale	Equipment for visualizing personal informatics NSERC: IRT Equipment Grant 10 hours/month	86,000(100%)	2012 2013
Carpendale	Steacie Fellowship NSERC Awards 20 hours/month	125,000(100%) 125,000(100%)	2013 2014

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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			
Carpendale	Accelerator	40,000(100%)	2015
	NSERC	40,000(100%)	2016
	Discovery Accelerator	40,000(100%)	2017
	10 hours/month		

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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 146129	Carpendale

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
(Name withheld)	Undergraduate (In Progress)	Supervised 2013 -	Visualizing nutrition information	Undergraduate student
Grossauer, Christian	Exch. student (Completed)	Co-supervised 2011 -	Pen-based interaction for a formula editor	University of Applied Sciences Upper Austria
MacDonald, Lindsay	Doctoral (In Progress)	Co-supervised 2011 -	Empirical methodologies in creative practice	QE II scholarship, PhD student, University of Calgary
Perteneder, Florian	Exch. student (Completed)	Co-supervised 2011 -	Idea Playground: supporting interactive ideation	University of Applied Sciences Upper Austria
(Name withheld)	Exch. student (In Progress)	Supervised 2011 -	Interactive carbon footprint visualization	Ludwig-Maximilian-Universitaet, Munich
Etemad, Katayoon	Doctoral (In Progress)	Co-supervised 2010 -	Traditional cultural aesthestics in tree layout	NSERC scholarship, PhD student
Haber, Jonathan	Doctoral (In Progress)	Co-supervised 2010 -	Use of tablets to mitigate information flow	NSERC Industrial Scholarship, PhD student
Walny, Jagoda	Doctoral (In Progress)	Supervised 2010 -	Studying spontaneous use of visualizations	NSERC scholarhip, PhD student
Eggermont, Marjan	Doctoral (In Progress)	Co-supervised 2009 -	Biomiminicry in visualization	PhD student, University of Calgary
Fyfe, Lawrence	Doctoral (In Progress)	Co-supervised 2009 -	Use of visualization to support music performance	PhD Student, University of Calgary
Hinrichs, Uta	Doctoral (Completed)	Supervised 2006 -	Walk up and use large display interfaces	Post Doctoral Fellow, St. Andrews
Thudt, Alice	Doctoral (In Progress)	Supervised 2013 - 2017	Visualization that supports serendpidity	PhD student UofC
(Name withheld)	Doctoral (In Progress)	Co-supervised 2010 - 2015	Information handling in ICU	PhD student UofC
(Name withheld)	Postdoctoral (In Progress)	Supervised 2013 - 2014	Sketch interactions for infovis	Post Doctoral Fellow
(Name withheld)	Master's (In Progress)	Co-supervised 2012 - 2014	personal visualization	Masters student, UofC
(Name withheld)	Doctoral (In Progress)	Co-supervised 2009 - 2014	Toolkits if musical interfaces	PhD student UofC
(Name withheld)	exchan. student (In Progress)	Supervised 2013 - 2013	personal visualization - using mosaics	exchange student in my lab, University of Calgary
(Name withheld)	Undergraduate (In Progress)	Supervised 2013 - 2013	Using words as primary objects for graph layout	Undergraduate student
Doerk, Marian	Doctoral (Completed)	Co-supervised 2008 - 2012	Visualization for information search	Post Doctoral Fellow, New Castle
(Name withheld)	Doctoral (In Progress)	Supervised 2010 - 2011	Design space of infovis	PhD student, INRIA

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 146129	Carpendale

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Miguel Nacenta	Postdoctoral (Completed)	Co-supervised 2009 - 2011	Interaction on large displays	Lecturer(Ass. Professor) St Andrews University, Scotland
MacDonald, Lindsay	Master's (Completed)	Co-supervised 2008 - 2011	Exploring subtle gaze-triggered interaction in art	QE II scholarship, PhD student, University of Calgary
Langner, Ricardo	Exch. student (Completed)	Co-supervised 2009 - 2010	Physics based multi-touch games	Diplom student, University of Magdeburg
Schmidt, Sebastian	Exch. student (Completed)	Co-supervised 2009 - 2010	Multi-touch graph interaction	continuing studies in Germany
Vlaming, Luc	Exch. student (Completed)	Co-supervised 2009 - 2010	Rizzo: a multi-touch mouse of 3D information visualization	PhD student, The Netherlands
Collins, Christopher	Doctoral (Completed)	Co-supervised 2006 - 2010	Interactive visualizations of language	Assistant Professor, UOIT
Hancock, Mark	Doctoral (Completed)	Supervised 2004 - 2010	Physically based interactions on tabletop displays	Assistant Professor, Waterloo
Etemad, Katayoon	Master's (Completed)	Supervised 2007 - 2009	Node focused visualization of large trees	PhD student, my supervision, University of Calgary
Voida, Amy	Postdoctoral (Completed)	Co-supervised 2007 - 2009	Social computing	Assistant Professor, Illinois
Voida, Steve	Postdoctoral (Completed)	Co-supervised 2007 - 2009	Large display interaction protocols	Assistant Professor, Illinois
Tobiasz, Matthew	Master's (Completed)	Supervised 2006 - 2009	Lark: Meta-visualizations for coordinating collaboration	Programmer, Purus
Isenberg, Petra	Doctoral (Completed)	Supervised 2004 - 2009	Collaborative info visualization in co-located environments	Tenured Research Scientist, INRIA, Paris
Tang, Charlotte	Doctoral (Completed)	Supervised 2004 - 2009	Studying nurses' info flow to inform technology design	Assitant Professor, Michigan
Stromer, Julie	Res. Associate (Completed)	Supervised 2007 - 2008	Large display framework	User Experience Researcher, Calgary Health Region
Zuk, Torre	Doctoral (Completed)	Supervised 2003 - 2008	Visualizing uncertainty	Visualization Scientist, CGGVeritas Inc.
Isenberg, Tobias	Postdoctoral (Completed)	Supervised 2004 - 2007	Non-Photorealistic techniques in information visualization	Tenured Research Scientist, INRIA
Tat, Annie	Master's (Completed)	Co-supervised 2003 - 2007	Visualizing human dialog	User Experience designer, SMART Technologies
(Name withheld)	Undergraduate (Completed)	Supervised 2006 - 2006	USRI: visualizing programming language structure	PhD student, Waterloo University
Fanea, Elena	Master's (Completed)	Supervised 2001 - 2006	Visualizations of Multi-Dimensional Data	Developer at SeisWare International Inc: 3D Visualization
(Name withheld)	Doctoral (Completed)	Supervised 2000 - 2006	A framework for element-based computer graphics	Software Engineer II: Electronic Arts

1. Most Significant Research Contributions

Since I involve my HQP in all accepts of my research, I will use the first person plural here. Of particular note is our *empirical research*. We have done significant work towards improving our understanding of fundamental interactions including: *tabletop territoriality* [84] (cited in virtually all subsequent tabletop research); impact of item orientation on collaboration coordination; how coordination styles change during collaboration [39]; social and temporal context for interactive gestures [36]. This increased understanding led to the development of a series of *new tabletop display interaction techniques* [15,17,19,23,25,31,32,33,33,40,41,43,46,49, …], which in turn directly influenced my relationship with SMART Technologies resulting in my Industrial Research Chair. Also, our continued advances in *information visualization* [9,12,13,16,18,22,…] have had considerable impact. For example, our integration of *uncertainty visualization* in a decision support tool for diagnosing pulmonary embolism is proving successful in pre-clinical trials. Our *linguistic visualizations* [22,18,16] attracted considerable media attention and were noted in a keynote (Grinstein) as a forerunner of the future of visualization. Recently, my earlier work on *multi-scale viewing* (Elastic Presentation UIST 2001) has formed the basis of a series of new advances in visualization viewing techniques. Also our research is at the forefront of current investigations into the use of information visualization techniques to *enhance information access* for the general population. For instance, we are investigating using visualizations to augment search [5,20,30,32], presenting information visually in museums and libraries [19,32], and using visualization inspire musical composition (won a BAFTA). We are also deeply involved in *influencing how empirical research* [85] is done in Information Visualization.

2. Highly Qualified Personnel (HQP)

For me the opportunity to work with brilliant students is one of the unsung privileges of being a research professor. In planning my research program I continuously bear HQP in mind in regards to grants, projects, scope and impact. As a result I have been able to attract a group of extremely talented HQP, many of whom chose to work with me over other good options (Georgia Tech, Stanford, UBC, UofT, and fully funded European PhDs). Almost all my students hold major scholarships (NSERC, Alberta Innovates, Dean's Entrance, etc.). All my HQP are deeply involved in all aspects of my research and make significant, internationally recognized research contributions by the time they graduate. I believe in a rich many faceted training experience and so maintain good industrial connections and place students in respected institutions for research internships (e.g., Microsoft Research, IBM, SMART, Intel). I also maintain an extensive HQP student research exchange: I regularly host research students from other institutes almost invariably leading to joint publications (UBC, Toronto, Magdeburg, LMU Munich, U Upper Austria, INRIA, Waterloo). My HQP are exceedingly well placed: PDFs T. Isenberg, M. Nacenta are professors (Groningen/St. Andrews), PhDs Scott, Collins, Hancock, are also professors (Waterloo/UOIT/Waterloo). PhD student P. Isenberg is now tenured Research Scientist at INRIA, PhDs Zuk and Mason hold industrial research positions (Veritas, Electronic Arts).

Perhaps the award of which I am most proud is my university wide *Excellence in Supervision Award*. My students got together and wrote the letter that nominated me for this award.

3. Publications. HQP authors marked in bold.

Book

1. S. Greenberg, S., Carpendale, N. Marquardt, B. Buxton. *Sketching User Experiences: The Workbook*, Morgan-Kaufmann. ISBN: 978-0-12-381959-8. pp. I-VIII, 1-262, January 2012.

Refereed Journals

2. **U. Hinrichs**, S. Carpendale, **N. Valkanova, K. Kuikkaniemi**, G. Jacucci, A. Van de Moere: Interactive Public Displays. *IEEE Computer Graphics and Applications* 33(2): 25-27, 2013
3. **J. Walny**, B. Lee, P. Johns, N. Henry Riche and S. Carpendale. (2012) Designing Pen and Touch Interaction for Data Exploration on Interactive Whiteboards. In *IEEE TVCG*, 18(6): 2779-2788.

4. B. Lee, P. Isenberg, N. Henry Riche, S. Carpendale. (2012) Beyond Mouse and Keyboard: Expanding Design Considerations for Information Visualization Interactions. *IEEE TVCG*, 18(12): 2689-2698.
5. **M. Dörk,** C. Williamson and S. Carpendale. (2012) Navigating Tomorrow's Web: From Searching and Browsing to Visual Exploration. In *ACM Transactions on the Web, TWEB* 6(3): 13 pages, 2012.
6. **S. Lynch, J. Haber**, and S. Carpendale. (2012) ColourVis: exploring colour usage in digital images. In *Journal of Computer and Graphics* 36(6): 696-707
7. H. Lam, E. Bertini, **P. Isenberg**, C. Plaisant, S. Carpendale. (2012) Empirical Studies in Information Visualization: Seven Scenarios. *IEEE TVCG*, 18(9): 1520-1536.
8. S. Greenberg, S. Carpendale, **N. Marquardt**, B. Buxton. (2012) The narrative storyboard: telling a story about use and context over time. *ACM Interactions* 19(1):64-69, ACM Press
9. **M. Dörk,** S. Carpendale, C. Williamson. (2012) Visualizing Explicit and Implicit Relations of Complex Information Spaces. *Journal of Information Visualization*, Sage, 11(1):5-21.
10. **J. Walny,** S. Carpendale, N. Henry Riche, G. Venolia, P. Fawcett. (2011). Visual Thinking in Action: Visualizations as Used on Whiteboards. *IEEE TVCG*, 17(6): in press, Nov/Dec.
11. **J. Brosz**, **M. Nacenta**, S. Carpendale. (2011). The Undistort Lens. *Computer Graphics Forum*. 30(3):881-890.
12. **M. Dörk**, D. Gruen, C. Williamson, S. Carpendale. (2010). A Visual Backchannel for Large-Scale Events. *IEEE TVCG*, 16(6):1129-38.
13. B. Lee, N. Henry Riche, A. Karlson, S. Carpendale. (2010). SparkClouds: Visualizing Trends in Tag Clouds. *IEEE TVCG*, 16(6):1182-1189.
14. **C. Tang,** S. Carpendale, S.D. Scott. (2010). InfoFlow Framework for Evaluating New Healthcare Technologies, *Int'l JHCI, Special Issue: Evaluating new interactions in healthcare:* 26(5):477–505.
15. **M. Tobiasz**, **P. Isenberg**, S. Carpendale. (2009). Lark: Coordinating Co-located Collaboration with Information Visualization. *IEEE TVCG*, 15(6):1065-1072.
16. **C. Collins**, G. Penn, S. Carpendale. (2009). Bubble Sets: Revealing Set Relations with Isocontours over Existing Visualizations. *IEEE TVCG*, 15(6): 1009-1015.
17. **P. Isenberg**, A. Bezerianos, N. Henry, S. Carpendale, J.-D. Fekete. (2009). CoCoNutTrix: Collaborative Retrofitting for Information Visualization. *CG&A: SI: Collaborative Visualization*, 29(5):44–57.
18. **C. Collins**, S. Carpendale, G. Penn. (2009). DocuBurst: Visualizing Document Content using Language Structure. *Computer Graphics Forum*. 28(3):1039-1046.
19. **U. Hinrichs, H. Schmidt**, S. Carpendale. (2008). EMDialog: Bringing Information Visualization into the Museum. *IEEE TVCG*, 14(6):1181-1188.
20. **M. Dörk**, S. Carpendale, **C. Collins**, C. Williamson. (2008). Visgets: Coordinated Visualizations for Web-based Information Exploration and Discovery. *IEEE TVCG*, 14(6):1205-1212.
21. T. Isenberg, M. Everts, **J. Grubert**, S. Carpendale. (2008). Interactive Exploratory Visualization of 2D Vector Fields. *Computer Graphics Forum*, 27(3):983–990.
22. **C. Collins**, S. Carpendale. (2007). VisLink: Revealing Relationships amongst Visualizations. *IEEE TVCG*, 13(6):1192-1199.
23. **P. Isenberg**, S. Carpendale. (2007). Interactive Tree Comparison for Co-located Collaborative Information Visualization. *IEEE TVCG*, 13(6):1232–1238.

Full Papers in Fully Refereed Conferences/Symposium Proceedings

IEEE Vis, InfoVis are 1st –tier visualization conferences. ACM CHI, CSCW and UIST are 1st –tier HCI conferences. Most conferences acceptance rates ~25%.

24. **T. Kirton, S. Boring, D. Baur, L. MacDonald**, S. Carpendale. (2013) C4: a creative-coding API for media, interaction and animation. *Tangible and Embedded Interaction* 2013: 279-286
25. **D. Baur**, B. Lee, S. Carpendale. (2012) TouchWave: Kinetic Multi-touch Manipulation for Hierarchical Stacked Graphs. *Proceedings ACM ITS*. ACM Press

26. **A. Pon**, J. Ichino, E. Sharlin, D. Eagle, S. Carpendale. (2012). Vuzik: A Painting Graphic Score Interface for Composing and Control of Sound Generation. *Proc. Int'l Comp. Music Conf.* 579-583
27. **D. Baur**, A. Butz, S. Carpendale. (2012) Arcs.fm - A Backdrop Visualization for Music Talk. *Proceedings EuroVis*. 109-113pp. Eurographics - European Association for Computer Graphics
28. N. Henry Riche, T. Dwyer, B. Lee, and S. Carpendale. (2012) Exploring the Design Space of Interactive Link Curvature in Network Diagrams. In *Proceedings of ACM AVI 2012*
29. **M. Nacenta, U. Hinrichs** and S. Carpendale. (2012) FatFonts: Combining the Symbolic and Visual Aspects of Numbers. In AVI 2012: *Proceedings of ACM AVI*.
30. **M. Dörk**, S. Carpendale and C. Williamson. (2012) Fluid Views: A Zoomable Search Environment. In *Proceedings of ACM AVI*.
31. **L. Fyfe**, A. Tindale and S. Carpendale. (2012) Node and Message Management with the JunctionBox Interaction Toolkit. In *Proceedings of New Interfaces for Musical Expression*, pages 520-521, 2012.
32. **A. Thudt**, **U. Hinrichs** and S. Carpendale. (2012) The Bohemian Bookshelf: Supporting Serendipitous Book Discoveries through Information Visualization. In *Proceedings of ACM CHI*.
33. **K. Mikulecky, M. Hancock, J. Brosz** and S. Carpendale. (2011) Exploring physical information cloth on a multitouch table. In ITS '11: *Proceedings of ACM ITS* 140-149, 2011.
34. **M. Dörk**, S. Carpendale and C. Williamson. (2011) Exploring Growing Information Spaces. In HCIR 2011: *Workshop on Human-Computer Interaction and Information Retrieval*, 4 pages, 2011.
35. **J. Walny**, **J. Haber**, **M. Dörk**, J. Sillito, S. Carpendale. Follow that Sketch: Lifecycles of Diagrams and Sketches in Software Development. *Proc VISSOFT 201*, (In press).
36. **U. Hinrichs**, S. Carpendale. (2011) Gestures in the Wild: Studying Multi-Touch Gesture Sequences on Interactive Tabletop Exhibits. *Proc ACM CHI '11*. pp. 3023-3032.
37. **M. Dörk**, S. Carpendale, C. Williamson. (2011) The Information Flaneur: A Fresh Look at Information Seeking. *Proc ACM CHI '11*. pp. 1215-1224.
38. **M. Dörk**, S. Carpendale, C. Williamson. (2011). EdgeMaps: Visualizing Explicit and Implicit Relations. *Proc Visualization and Data Analysis*. IS&T/SPIE- 78680G. **Best paper award.**
39. **A. Tang,** M. Pahud, S. Carpendale, B. Buxton, B. (2010). VisTACO: Visualizing Tabletop Collaboration. *Proc ACM ITS'10*, pp. 29-38.
40. **L. Vlaming**, C. Collins, M. Hancock, **M. Nacenta**, T. Isenberg, S. Carpendale. (2010). Integrating 2D mouse emulation with 3D manipulation for visualizations. *Proc ACM ITS'10,* pp. 221-230.
41. **S. Schmidt**, **M. Nacenta**, R. Dachselt, S. Carpendale. (2010) A Set of Multi-touch Graph Interaction Techniques**.** *Proc ACM ITS'10*, pp. 113-116.
42. **R. Jota**, **M. Nacenta**, J. Jorge, S. Carpendale, S. Greenberg. (2010). A Comparison of Ray Pointing Techniques for Very Large Displays. *Proc Graphics Interface - GI'2010*, pp. 269-276.
43. **M. Hancock**, **T. ten Cate**, S. Carpendale, T. Isenberg. (2010). Supporting Sandtray Therapy on an Interactive Tabletop**.** *Proc. ACM CHI*. pp. 2133-2142.
44. **A. Voida**, S. Carpendale, S. Greenberg. (2010). The individual and the group in console gaming. *Proc ACM Computer-Supported Cooperative Work (CSCW 2010)*, pp. 371-380.
45. **N. Marquardt**, T. Gross, S. Carpendale, S. Greenberg. (2010). Revealing the invisible: visualizing the location and event flow of distributed physical devices**.** *Proc ACM TEI'10*, pp 41-48.
46. **M. Hancock**, **T. ten Cate**, S. Carpendale. (2009). Sticky tools: Full 6DOF force-based interaction for multi-touch tables. *Proc ACM ITS'09,* pp.145-152.
47. **M. Hancock, M. Nacenta**, C. Gutwin, S. Carpendale. (2009). The effects of changing projection geometry on the interpretation of 3D orientation on tabletops. *Proc ACM ITS'09,* pp. 175-182.
48. **M. Hancock, O. Hilliges, C. Collins**, **D. Baur**, S. Carpendale. (2009). Exploring tangible and direct touch interfaces for manipulating 2D and 3D information … *Proc ACM ITS'09*, pp. 85-92.
49. **S. Voida, M. Tobiasz, J. Stromer, P. Isenberg**, S. Carpendale. (2009). Getting practical with interactive tabletop displays: Designing for dense data, … . *Proc ACM ITS'09,* pp. 109-116.

50. **N. Marquardt**, **M. Nacenta**, **J. Young**, S. Carpendale, S. Greenberg, E. Sharlin (2009). The Haptic Tabletop Puck: Tactile Feedback for Interactive Tabletops. *Proc ACM ITS'09,* pp. 85-92.
51. **C. Tang**, S. Carpendale. (2009). Supporting Nurses' Information Flow by Integrating Paper and Digital Charting. *Proc. ECSCW'09*. pp. 43-62.
52. **J. Brosz**, S. Carpendale, F. Samavati, **H. Wang**, A. Dunning. (2009). Art and Nonlinear Projection. In *Bridges 2009: Mathematical Connections in Art, Music and Science,* pp. 105-114.
53. **C. Tang**, S. Carpendale. (2009). A Mobile Voice Communication System in Medical Setting: Love it or Hate it? *Proc ACM CHI'09,* pp *2041-2050*
54. **C. Tang**, S. Carpendale. (2008) Support for Informal Information Use and its Formalization in Medical Work. *Proc of IEEE Computer Based Medical systems* (CBMS'08). pp. 476-481.
55. **C. Tang**, S. Carpendale. (2008). Evaluating the Deployment of a Mobile Technology in a Hospital Ward. *Proc ACM* CSCW'08. pp. 205-214. **(honourable mention paper)**
56. **P. Isenberg**, **A. Tang**, S. Carpendale. (2008). An Exploratory Study of Visual Information Analysis. *Proc ACM CHI'08,* pp. 1217–1226.
57. **P. Isenberg**, **T. Zuk**, **C. Collins**, S. Carpendale. (2008). Grounded Evaluation of Information Visualizations. *Proc. BELIV'08, held at ACM CHI'08,* pp. 56-63, ACM DL.
58. **U. Hinrichs**, **M.S. Hancock**, **C. Collins,** S. Carpendale. (2007). Examination of Text-Entry Methods for Tabletop Displays. *Proc IEEE Tabletop'07,* pp. 105-112, IEEE Computer Society.
59. **M.S. Hancock**, S. Carpendale. (2007). Supporting Multiple Off-Axis Viewpoints at a Tabletop Display. *Proc. IEEE Tabletop'07,* pp. 171-178, IEEE Computer Society.
60. **M. Nunes**, S. Greenberg, S. Carpendale, C. Gutwin, (2007). What Did I Miss? Visualizing the Past through Video Traces. *Proc. ECSCW'07,* pp. 1-20.
61. **M. Schwarz**, **T. Isenberg**, K. Mason, S. Carpendale. (2007) Modeling with Rendering Primitives: An Interactive Non-Photorealistic Canvas. *Proc. NPAR'07,* pp. 15–22, ACM Press.
62. **J. Broz**, S. Samavati, M. Costa-Sousa, S. Carpendale. (2007). Single Camera Flexible Projections. *Proc. NPAR'07,* pp. 33-42, ACM Press.
63. **P. Neumann**, **T. Isenberg**, S. Carpendale. (2007). NPR Lenses: Interactive Tools for Non-Photorealistic Line Drawings. *Proc. Smart Graphics*, pp. 10–22. Springer-Verlag.
64. **T. Zuk**, S. Carpendale. (2007). Visualization of Uncertainty and Reasoning. *Proc. Smart Graphics (vol. 4569 Lecture Notes in Computer Science),* pp. 164–177. Springer-Verlag.
65. **H. Schmidt**, **U. Hinrichs**, A. Dunning, S. Carpendale. (2007). memory [en]code - Building a Collective Memory within a Tabletop Installation. *Proc. CAe'07*, pp. 135–142. **(Best Paper)**
66. **P. Neumann**, **A. Tat**, **T. Zuk**, S. Carpendale. (2007). KeyStrokes: Personalizing Typed Text with Visualization. *Proc. EuroVis'07,* pp. 43–50.
67. **C. Collins, S.** Carpendale, G. Penn. (2007). Visualization of Uncertainty in Lattices to Support Decision-Making. *Proc. EuroVis'07,* pp. 51-59, Eurographics Association.
68. **M.S. Hancock**, S. Carpendale, A. Cockburn. (2007). Shallow-Depth 3D Interaction: Design and Evaluation of One-, Two- & Three-Touch ... *Proc. ACM CHI'07,* 1147–1156, **honorable mention**
69. **C. Tang**, S. Carpendale. (2007). An Observational Study on Information Flow during Nurses' Shift Work. *Proc. ACM CHI'07*, pp. 219–228.

Plus 12 papers not listed for space reasons

Edited Collections, Proceedings, and Special Issues: Co-edited **4 conference proceedings** (*IEEE PacificVis 2013, ACM Interactive Tabletops & Surfaces Conference ITS'09; IEEE Proceedings InfoVis, 2009, & 2008),* **special issue** (*Interactive Public Displays*, *IEEE CG&A*, 33(2), 2013).

Book Chapters: 6 invited book chapters. These 2 chapters are particularly well cited.

84. S.D. Scott, S. Carpendale. (2010). Theory of Tabletop Territoriality. In *C. Müller-Tomfelde (ed.), Tabletops - Horizontal Interactive Displays*, Springer (HCI Series), pp. 387-406. Springer, 2010.

85. S. Carpendale. (2008). Evaluating Information Visualizations. *Kerren, Stasko, Fekete, North (Eds.). Information Visualization – Human-Centered Issues and Perspectives*, Springer, pp. 19-45, 2008.

Other Publications: I have **36 other refereed contributions** all with student co-authors, including workshop papers, posters, videos, and demos and **53** other contributions including.

Presentations: I have given **12 keynote talks** and **25 invited talks** and panel presentations.

Exhibits and Installations: 14 new media installations and exhibits, all HQP led, winning several awards: a **Best in Show**, a **Governor General's Award**, a **Digital Alberta Award**, and one of **3 finalists** for **Interactive Media** in the **Canadian New Media Awards**.

4. Other Evidence of Impact and Contribution

2013 **Canadian Human Computer Communications Society (CHCCS) Achievement Award: (**substantial contribution to computer graphics, visualization, or human-computer interaction)

2013 **Student U. Hinrichs won Bill Buxton Award: (2013)** best HCI PhD in Canada.

2012 **NSERC, E.W.R. STEACIE Memorial Fellowship Award: (2012)** This fellowship is awarded nationally to up to six outstanding and highly promising scientists and engineers.

2012 **NSERC, Discovery Accelerator Award: (2012)** The Accelerator is awarded to a select few of the NSERC Discovery Grant applicants**.**

2011 **ASTech Award Honouree:** for 'significant contribution through the discovery, application and/or implementation of technology products or processes.'

2011 **IEEE** excellence in service award.

2011 **AIFT Industrial Chair** – Awarded Summer 2011 for 5 years (with S. Greenberg)

2011 **SMART Technologies** renews funding for my **Industrial Research Chair**

2009 **Excellence in Supervision Award:** University of Calgary

2009 **Canada Research Chair, Tier II: Information Visualization** (renewal)

2009 **ACM Excellence in Service Award**

2009 **Discovery Channel** segment on my research

5. Technology Transfer

- ***Smart Technologies*** fund my AITF Research Chair, my grants SurfNet, GRAND, CFI, hire my HQP.
- ***Microsoft Research*** hosted my sabbatical, hired me as a consultant, seeks my HQP as research interns.
- **Patent Pending:** ***Integration of Sketch-based Interaction and Computer Data Analysis;*** Number: 331410.01; Filing Date: March, 2011; Applicants: Microsoft Corporation; Inventors: Lee, Henry-Riche, Carpendale, Sherwood, Browne
- **Patent:** ***Three-Dimensional Widget Manipulation on a Multi-Touch Panel***; Number: WO/2011/003171; Publication Date: 13.01.2011; Applicants: SMART Technologies; Inventors: Carpendale, Hancock, ten Cate, Isenberg.
- **Patent:** ***Elastic Presentation Space***; US Patent: 7,256,801 B2 100; Date: Aug 14, 2007; Applicants: Idelix Software Inc.; Inventors: Baar, Carpendale, Cowperthwaite, Tigges, Komar, Bauer

Recent Major Professional Positions

Program Chair IEEE PacificVis 2013, Associate Editor IEEE Transactions on Visualization and Computer Graphics (TVCG); Editor CG&A Special Issue: Interactive Tabletops; Conference Chair IEEE Information Visualization 2010; Program Co-Chair ACM Interactive Tabletops and Surfaces 2009; Papers Co-Chair IEEE Information Visualization 2008 &2009; General Co-Chair Computational Aesthetics'07

Program Committees: Information Visualization'10 &'11, CHI '10 &'11, CSCW'11; Reviewer: approx. 50-60 papers, grants, promotion cases etc. per year including NSERC, Alberta Ingenuity, Vis, InfoVis, EuroVis, UIST, CHI, SIGGRAPH, TVCG, CSCW, CG&A, UIST, NPAR, etc.

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: 2013/06/15

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Carpendale	Sheelagh	MST	**Valid** 146129

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

Dept Computer Science,University Calgary
2500 University Drive N.W.
Calgary AB T2N1N4
CANADA

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
(403) 2206055	(403) 2844707	sheelagh@cpsc.ucalgary.ca

Telephone number (alternate)

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

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

LANGUAGE CAPABILITY

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

information visualization, human-computer interaction, interactive tabletop interfaces, Large displays, aesthetic interaction, distortion viewing, information presentation, interaction design, computer graphics, non-photorealistic rendering

Research subject code(s)

Primary: 2700

Secondary: 2707

Appendix D (Form 100)
Consent to Provide Limited Personal Information About Highly Qualified Personnel (HQP) to NSERC

NSERC applicants are required to describe their contributions to the training or supervision of highly qualified personnel (HQP) by providing certain details about the individuals they have trained or supervised during the six years prior to their current application. HQP information must be entered on the Personal Data Form (Form 100). This information includes the trainee's name, type of HQP training (e.g., undergraduate, master's, technical etc.) and status (completed, in-progress, incomplete), years supervised or co-supervised, title of the project or thesis, and the individual's present position.

Based on the federal *Privacy Act* rules governing the collection of personal information, applicants are asked to obtain consent from the individuals they have supervised before providing personal data about them to NSERC. In seeking this consent, the NSERC applicant must inform these individuals what data will be supplied, and assure them that it will only be used by NSERC for the purpose of assessing the applicant's contribution to HQP training. To reduce seeking consent for multiple applications, applicants will only need to seek consent one time for a six-year period. If the trainee provides consent by e-mail, the response must include confirmation that they have read and agree to the text of the consent form.

When consent cannot be obtained, applicants are asked to not provide names, or other combinations of data, that would identify those supervised. However, they may still provide the type of HQP training and status, years supervised or co-supervised, a general description of the project or thesis, and a general indication of the individual's present position if known.

An example of entering HQP information on Form 100 (with and without consent):

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Consent Received from Marie Roy				
Roy, Marie	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry in petroleum engineering	V-P (Research), Earth Analytics Inc., Calgary, Alberta
Consent Not Obtained from Marie Roy				
(name withheld)	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry	research executive in petroleum industry - western Canada

Consent Form

Name of Trainee

Applicant Information

Name Carpendale, Sheelagh MST

Department	Postsecondary Institution
Computer Science	Calgary

I hereby allow the above-named applicant to include limited personal data about me in grant applications submitted for consideration to NSERC for the next six years. This limited data will only include my name, type of HQP training and status, years supervised or co-supervised, title of the project or thesis and, to the best of the applicant's knowledge, my position title and company or organization at the time the application is submitted. I understand that NSERC will protect this data in accordance with the *Privacy Act*, and that it will only be used in processes that assess the applicant's contributions to the training of highly qualified personnel (HQP), including confidential peer review.

Trainee's signature _____ Date _____

Note: This form must be retained by the applicant and made available to NSERC upon request.

Do not photocopy this page.

Internal use	CID (if known)
731901	165517

Identification

Only the information in the Name section will be made available to selection committee members and external assessors. Citizenship and Statistical and Administrative Information will be used by SSHRC for administrative and statistical purposes only. Filling out the statistical and Administrative Information section is optional.

Name

Family name	Given name	Initials	Title
Gardner	Paula	M	Dr.

Citizenship - Applicants and co-applicants must indicate their citizenship status by checking and answering the applicable questions.

Citizenship status				Have you applied for permanent residency?
◯ Canadian	◉ Permanent resident since (yyyy/mm/dd) 2009/12/22	◯ Other (country)		◯ Yes ◯ No

Statistical and Administrative Information

Birth year	Gender	Permanent postal code in Canada (i.e. K2P1G4)	Correspondence language	Previous contact with SSHRC? (i.e. applicant, assessor, etc.)
1965	◉ F ◯ M	M6S3G4	◉ English ◯ French	◯ Yes ◉ No

Full name used during previous contact, if different from above
Paula M. Gardner

Contact Information

The following information will help us to contact you more rapidly. Secondary information will not be released by SSHRC without your express consent.

	Country code	Area code	Number	Extension
Primary telephone number	1	416	6040352	x
Secondary telephone number	1	647	8857213	x
Primary fax number	1	416	9776006	x
Secondary fax number	1	416	6040352	x

Primary E-mail: pgardner@faculty.ocadu.ca

Secondary E-mail: pgardner399@gmail.com

Checked
Web CV
2013/06/15

Personal information will be stored in the Personal Information Bank for the appropriate program.

Do not photocopy this page.

Family name, Given name

Gardner, Paula

Current Address

Use only if you are not affiliated with a department at a Canadian university. (If you are affiliated with a department at a Canadian university, the department's mailing address will be used.) If you wish to use another address, specify it under the Correspondence Address.

Address

City/Municipality | Prov. / State | Postal/Zip code

Country CANADA

Correspondence Address

Complete this section if you wish your correspondence to be sent to an address other than your current address.

Address

City/Municipality | Prov. / State | Postal/Zip code

Country

Temporary Address

If providing a temporary address, phone number and/or E-mail, ensure that you enter the effective dates.

Address

City/Municipality | Prov./ State

Country

Start date (yyyy/mm/dd)

End date (yyyy/mm/dd)

Permanent Address in CANADA

Address

City/Municipality | Prov./ State | Postal/Zip code

Country

Temporary telephone/fax number

Country code | Area code | Number | Extension

Temporary E-mail

Do not photocopy this page.

Family name, Given name
Gardner, Paula

Research Expertise (optional)

The information provided in this section refers to your own research expertise, not to a research proposal. Filling out the following 4 sections is optional. This page will not be seen by selection committee members and external assessors. This section will be used for planning and evaluating programs, producing statistics, and selecting external assessors and committee members.

Areas of Research

Indicate and rank up to 3 areas of research that best correspond to your research interests as well as areas where your research interests would apply. Duplicate entries are not permitted.

Rank	Code	Area
1	120	Communication
2	360	Science and technology
3	100	Arts and culture

Temporal Periods

If applicable, indicate up to 2 historical periods covered by your research interests.

From			To		
Year	BC	AD	Year	BC	AD
_____	◯	◯	_____	◯	◯
_____	◯	◯	_____	◯	◯

Geographical Regions

If applicable, indicate and rank up to 3 geographical regions covered by your research interests. Duplicate entries are not permitted.

Rank	Code	Region
1	1000	North America
2	9001	International
3	3000	Europe

Countries

If applicable, indicate and rank up to 5 countries covered by your research interests. Duplicate entries are not permitted.

Rank	Code	Countries	Prov./ State
1	1200	UNITED STATES	
2	1100	CANADA	
3			
4			
5			

Curriculum Vitae

Family name, Given name: Gardner, Paula

Language Proficiency

	Read	Write	Speak	Comprehend aurally
English	X	X	X	X
French	X			

Other languages: Spanish

Work Experience

List the positions, academic and non-academic, you have held beginning with the current position and all previous positions in reverse chronological order, based on the start year.

Current position: Associate Professor
Start date (yyyy/mm): 2004/10

Org. code: 1350005
Full organization name: OCAD University

Department/Division name: Faculty of Liberal Arts & Sciences

Position type: (●) Tenured ( ) Non-tenure ( ) Tenure-track ( ) Non-academic
Employment status: (●) Full-time ( ) Part-time ( ) Non-salaried ( ) Leave of absence

Position: Associate Professor
Start date (yyyy/mm): 2008/9
End date (yyyy/mm):

Org. code: 1350005
Full organization name: OCAD University

Department/Division name: Faculty of Liberal Arts & Sciences

Position: Associate Dean
Start date (yyyy/mm): 2005/10
End date (yyyy/mm): 2008/10

Org. code: 1350005
Full organization name: OCAD University

Department/division name: Faculty of Liberal Arts & Sciences

Position: Assistant Professor
Start date (yyyy/mm): 2004/10
End date (yyyy/mm): 2005/10

Org. code: 1350005
Full organization name: OCAD University

Department/Division name: Faculty of Liberal Arts & Sciences

Family name, Given name
Gardner, Paula

Work Experience (cont'd)

Position	Start date (yyyy/mm)	End date (yyyy/mm)
Assistant Professor	2003/10	2004/10

Org. code	Full organization name
9959102	Florida State University

Department/Division name: Communication

Position	Start date (yyyy/mm)	End date (yyyy/mm)
Assistant Professor	2001/10	2003/10

Org. code	Full organization name
9927156	Bridgewater State College

Department/Division name: Communication Department

Position	Start date (yyyy/mm)	End date (yyyy/mm)
Visiting Professor	2000/10	2001/10

Org. code	Full organization name
9927112	Northeastern University

Department/Division name: Communication Department

Position	Start date (yyyy/mm)	End date (yyyy/mm)
Lecturer	1995/10	1997/10

Org. code	Full organization name
9927131	University of Massachusetts Amherst

Department/Division name: Communication

Position	Start date (yyyy/mm)	End date (yyyy/mm)
Research Assistant	1993/10	1994/10

Org. code	Full organization name
9931104	The City University of New York

Department/Division name: John Jay College of Criminal Justice

Family name, Given name
Gardner, Paula

Academic Background

List up to 5 degrees, beginning with the highest degree first and all others in reverse chronological order, based on the start date.

Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
Doctorate	Doctor of Philosophy	1994/08		2001/05

Disc. code	Discipline	Did SSHRC support enable you to get this degree?
50600	Communications and Media Studies	◯ Yes ◉ No

Org. code	Organization
9927131	University of Massachusetts Amherst

Country: UNITED STATES

Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
Master's	Masters of Arts	1991/08		1994/05

Disc. code	Discipline	Did SSHRC support enable you to get this degree?
50600	Communications and Media Studies	◯ Yes ◉ No

Org. code	Organization
9931140	The New School

Country: UNITED STATES

Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)
BA Gen.	Bachelor of Arts	1984/08		1987/05

Disc. code	Discipline	Did SSHRC support enable you to get this degree?
62800	Political Science	◯ Yes ◉ No

Org. code	Organization
9931171	State University of New York at Potsdam

Country: UNITED STATES

Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)

Disc. code	Discipline	Did SSHRC support enable you to get this degree?
		◯ Yes ◯ No

Org. code	Organization

Country:

Degree type	Degree name	Start date (yyyy/mm)	Expected date (yyyy/mm)	Awarded date (yyyy/mm)

Disc. code	Discipline	Did SSHRC support enable you to get this degree?
		◯ Yes ◯ No

Org. code	Organization

Country:

Personal information will be stored in the Personal Information Bank for the appropriate program.

Family name, Given name

Gardner, Paula

Credentials

List up to 6 licences, professional designations, awards and distinctions you have received and feel would be the most pertinent to the adjudication of your application. List them in reverse chronological order, based on the year awarded.

Category	Name	Source or Country	Duration (Months)	Value / Year awarded
Fellowship	Fellow, BIOS Centre, London Sch. of Economics	ENGLAND		$0 2009
Graduate Bursary	UMass, Amherst	UNITED STATES		 2004
Graduate Scholarship	New School for Social Research	UNITED STATES		$0 2002
Non-Academic Prize	Community Service Award, SUNY Potsdam	UNITED STATES		 1987

Research Expertise

The information provided in this section refers to your own research expertise, not to a research proposal.

Keywords

List keywords that best describe your areas of research expertise. Separate keywords with a semicolon.

media studies, communication, cultural studies, feminist theory, visual culture, critical health studies, ethnographic research, new media research

Disciplines

Indicate and rank up to 5 disciplines that best correspond to your research interests. Duplicate entries are not permitted.

Rank	Code	Discipline	If Other, specify
1	50600	Communications and Media Studies	
2	50822	Multidisciplinary and Interdisciplinary Arts	
3	55014	Philosophy of Science and Technology	
4	70100	Women's Studies	
5	70000	Interdisciplinary Studies	

Family name, Given name
Gardner, Paula

Funded Research

List up to 8 grants or contracts you have received from SSHRC or other sources. List them in reverse chronological order, based on the year awarded. If you are not the applicant (principal investigator), specify that persons' name.

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
3010325	Social Sciences and Humanities Research Council of Canada	2013	$17,860

Role: Applicant — Completion status: ☐ Complete

Project title: Designing distributed learning networks: mobilizing expertise, engaging multiple publics

Applicant's family name	Applicant's given name	Initials
Gardner	Paula	M

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	ORF	2012	$150,000

Role: Collaborator — Completion status: ☐ Complete

Project title: Centre for Innovation in Visualisation and Data Driven Design

Applicant's family name	Applicant's given name	Initials
Diamond	Sara	

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
3010325	Social Sciences and Humanities Research Council of Canada	2009	$158,048

Role: Applicant — Completion status: ☒ Complete

Project title: Biomapping: mobile interventions in self-computation and spatial aesthetics

Applicant's family name	Applicant's given name	Initials

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	National Centres of Excellence	2009	$42,000,000

Role: Co-applicant — Completion status: ☐ Complete

Project title: GRAND: Graphics, Animation and New Media Canada

Applicant's family name	Applicant's given name	Initials
Gardner	Paula	M

Family name, Given name
Gardner, Paula

Funded Research (cont'd)

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	Heritage Canada-CCO-NMRDI	2006	$435,000

Role: Applicant — Completion status: [X] Complete

Project title: PORTAGE: The Canadian Mobile Experience

Applicant's family name	Applicant's given name	Initials
Gardner	Paula	

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	Heritage Canada- CCO	2005	$1,200,000

Role: Collaborator — Completion status: [X] Complete

Project title: Mobile Digital Commons Network, II

Applicant's family name	Applicant's given name	Initials
Diamond	Sara	

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	Florida State University Centre for Human Rights	2004	$40,000

Role: Applicant — Completion status: [ ] Complete

Project title: Documentary Film on Survivors of Torture in USA

Applicant's family name	Applicant's given name	Initials
Gardner	Paula	

Org. code	Full name of funding organization	Year awarded (yyyy)	Total amount (CAN$)
1	Northeastern University- Faculty Undergraduate Research Institute Grant	2002	$4,000

Role: Applicant — Completion status: [X] Complete

Project title: Research Grant: Recovery Culture Project

Applicant's family name	Applicant's given name	Initials
Gardner	Paula	

Addendum to CV, SSHRC

1.Research Contributions Over the Last Six Years

Refereed Contributions

R. 2013. *Technology and Emerging Media, the Canadian Communication Association Proceedings*. "Resisting the Trans-Human Subject: Biometric Tools, Code and Modular Thinking " Canadian Communication Association Conference, Annual Learneds Conference; Waterloo, ON.

R Gardner, Paula, Geoffrey Shea and Patricio Davila. 2010. "Locative urban mobile art interventions; Methods for facilitating politicized social interactions. *Aether: The Journal of Media Geography* (5B)

R Gardner, Paula. 2010, "Politicizing Mobile Art; Space, Becoming, and Dislocation" in Pierre Tremblay, ed. *Together Elsewhere,* Press, Montreal, Que.

R Gardner, Paula. 2008. "Mobile Publics: Methods for Making Virtual Spaces Public," in *Mobile Nation,* Ed. Canadian Design Research Network. Tuns Press/Riverside Architectural Press.

R Gardner, Paula. 2007. "Mobile Publics: Methods for Making Virtual Spaces Public." *Proceedings of the Mobile Nation Conference,* OCAD, Toronto, ON.

R Gardner, Paula. 2007, October. "Re-gendering Depression; Risk, web health campaigns and the feminized pharmaco-subject." *Canadian Journal of Communication, Special Issue on Health,* 32, # 3/4.

Other Refereed Contributions

R 2011. Presenter, Differential Mobilities Conference, Concordia University, MTL. Paper "Mobile Mindfulness: Bioinformatics in the Pursuit of Acceptance."

R 2011. Presenter, IAMCR Conference (International Association of Media and Communication Researchers,} "Istanbul, Turkey. 12 minute Video: "Bioart practice: Participatory Art, Mobility and the Politics of Augmentation"

R 2011. Organizer and Presenter, Symposium; "The Aesthetics of Trauma"; co-organized with Charles Reeves, OCAD University.

R 2011: (Feb) Invited Presenter, SSHRC-funded conference "Materialities and Imaginaries of the Wireless World Wide Web: Networks/Dwellings/Mobilities/Assemblages," Waterloo, ON

R 2011 Presenter and Conveenor: Roundtable, International Communication Association, "Feminist Process and Digital Media Art: Strategies from the Artists, Designers, Producers, Researchers, and Radicals, Boston, MA.

R 2010 Presenter, Society for the Social Study of Science, Tokyo, Japan. "Mobile Time and Space: Art Practice that Dislocates the Subject"

R May 2010. International Communication Association Convention. Singapore. "Space, Becoming, Dislocation: Politicized Mobile Art.

R May 2010. Canadian Communication Association. Passing Through Surveillance: Mobility, Subjectivity, and the Visual Economy of Sensor Art. Montreal, Que.

R May 2008. International Communication Association Convention. Montreal, Que.
Two papers: "Return of the Cyborg; Gendered Antidepressant Ads and Virtual Women at Risk" and "Augmented Spaces and the Pursuit of Agonistic Democracy: Mobile Experience Design."

R January 2008. "Mobile Anarchy from Resistance to Microsurveillance," Interpraxis conference. Coordinated by Nina Czegledy, University of Toronto. Conference held at OCAD, Toronto.

R January 2008. Gardner, Paula and G. Shea and P. Davila. "The Mobile Urban Experience: Art Interaction in PORTAGE. MediaCity Conference, Bauhaus University, Weimar, Germany.

R. 2008. Invited Panelist. "Mobile Mediation of the Remote and the Present; The Portage Project," Together Elsewhere Conference, Ryerson University and Université du Québec à Montréal (UQAM).

Non-Refereed Contributions/ Invited Presentations

2012. Gardner, Paula in Young, Nora. (2012). *The Virtual Self; How our Digital Lives are Altering the World Around Us.* McClelland & Stewart (pp. 188-90 and 195; on Biomapping and the Biomaterial self)

2011 Invited Lecture, Mobile Communication: The politics of mobility and social community. Freie Universität Berlin, Germany

2011. Invited Talk, "Bioart: the interstices of computational critique, aesthetics and participation" BIOS Centre, London School of Economics. London, UK.

Solicited reports and reviews

2010. Review for Oxford University Press, Higher Education Division, *Practices of Looking*: *An Introduction to Visual Culture*, first Canadian version; original by Lisa Cartwright and Marita Sturken

2008 Final Report to Canadian Heritage New Media Research Development Initiative Grant, Montreal, QC. Report on final deliverables for Portage the Canadian Mobile Experience Report. Also included four substantive interim reports 2007-2008.

Producer, Director and Interviewer. (2004-present/completion September 2013). "Eyes that Don't See, Hearts that Don't Feel", 40-minute documentary. Produced in collaboration with Centre for Survivors of Torture (Tampa, FL, and Florida State University Center for Human Rights. (See career contributions).

Director, Public Relations Video, for the Florida Center for Survivors of Torture. (March 2005) Interviewed 8 staff, and edited with footage from the documentary film (Eyes That Don't See, Hearts that Don't Feel) I am producing regarding their clients. Also, presented this documentary at the UN Day in commemoration of Survivors of Torture, Southern Florida University, Tampa, FL. Received an award for aiding their organization's work through the production of the film and the PR video.

Forthcoming Contributions:

R (Winter 2014) "I be in the show: Snapshots, bricks on chests and the lived aesthetic of trauma" in "Trauma as Cultural Phenomenon," *Public: Art, Ideas, Culture*

R (Winter 2014) Gardner, Paula and Charles Reeves. Trauma as Cultural Phenomenon. *Public: Art, Ideas, Culture*

2. Other Research Contributions

R Development of Video Dialogues, in collaboration with FemTechNet, to create a massively distributed opensourced curriculum in feminist science and technology studies. Organizing committee, fundraiser and video producer.

R New Media Technology Experiments. 2010-present, and renewable. PI for GRAND/National Centres of Excellence Grant. Project Lead, Visual Science for Stakeholders area, and funded researcher, cognitive, therapeutic and social applications of interactive interfaces. Investigating: new media sensor/screen environments activated by gesture; new visual interactive interface and methods for augmented practice.
Deliverables: new tactile-stimulated new media networks (including hardware and software components) and new forms of aesthetic, and performative interaction experiences, resulting in knowledges of mediated personal (identity) and social experience via gesture-sensitive new media technologies.

R CIV-DDD (Centre for Innovation in Visualisation and Data Driven Design), Executive Board Member and funded researcher; ORF Grant (Diamond et al.) 2012-present and ongoing. Visual Analytics experiments with Fetal Alcohol Syndrome data (FASD) in association with lead FASD scientists in Canada and our design/art team.

R Biometric-Mobile Network Experiments. 2009-2012. Project funded by the Social Science and Humanities Research Council, Research Creation Grant for Fine Arts. Title: "Biomapping: mobile interventions in self-computation and spatial aesthetics."
Investigating: Mobile art experiments in subjectivity and aesthetics, through a range of self-mapping projects, producing material sculptures and virtual personal typographies. The multiple data layers of the mobile environment and public environments allow participants to explore self, time and space via augmented technology.
Deliverables: new linked mobile-biometric technologies that allow for new forms of social interaction, identity understanding, and new technologies with possible applications for health and community intervention.
Available at: http://www.mobilelab.ca/biomapping

R Mobile Experience Art Projects. 2006-7. Project funded by Heritage Canada's CCO Research and Development Grant. Title: PORTAGE: The Canadian Mobile Experience.
Investigated: cultural content delivery potential of emerging multi-capability mobile devices including cell phones, handhelds and PDAs with Wi-Fi, Bluetooth, GPS and GSM access. The project built on the expertise

acquired with the Mobile Digital Commons Network (MDCN) in digital design, cultural production, software/hardware engineering and prototype development, and integrated accessible open-source authoring tools that allowing designers to cerate art.
Deliverables: software-hardware networks and communication channels (such as wi-fi and texting, linked with environmental sensors and displays, resulting in interactive, immersive environments. Software programs and Logs handbook of process were open-sourced and are available to the public.
Available at: mobilelab.ca/portage

Juried festivals

2008 Science Rendezvous, *Portage Mobile Project Exhibition*. City of Toronto, Toronto, ON. May.*Portage Mobile Project Exhibition, Demonstration and Workshop*. Mobifest International Festival of Mobile Arts and Creativity. Sao Paolo, Brazil. November.
2008 *Portage Mobile Project Exhibition and Demonstration*. Associate for Computing Machinery, International Conference on Multimedia, and Exhibition at Science World/Vancouver Science Center Exhibition. Vancouver, BC. October.
2008 *Portage Mobile Project Exhibition and Demonstration*. Science Rendezvous. City of Toronto, Toronto, ON. May.

R Mobile Experience Art Projects 2005-6. Project funded by Heritage Canada CCO Network Grant. Title: Alter Audio Project, of the Mobile Digital Commons Network.
Investigated: Mobile experience art in Canadian parks. Deliverables: new audio formats and experiences for park users via cell phone technology. Available at: http://www.mobilelab.ca/alteraudio.
Presented and exhibited at: R Words Aloud Festival (Nov 2006) (Public Presentation) Look Inside, Ontario College of Art and Design (October 2006)

Division Co-Chair : Feminist Studies, International Communication Association, (2010- 2016)
Reviewer for: *Communication Theory, Women's Studies, Atlantis: A Women's Studies Journal/ Revue d'etudes sur les femmes. Space and Culture*
Editorial Board*: Ada: Journal of Gender, New Media and Technology; Wi, Journal of the Mobile Media* (2007-present) *Wi, Journal of the Mobile Digital Commons Network* (2006-7); *Canadian Journal of Communication*: *New Media Advisory Board* (2005-present)
Fellowships and Residencies
R 2011 September - December, Visiting Fellow, London School of Economics, BIOS Centre for the Study of Bioscience, Biomedicine, Biotechnology and Society.

3. Most Significant Career Research Contributions
I have made significant contributions to interdisciplinary mobile research methods and mobile art and design practice, in leading varied major funded mobile art projects. Having recently completed my SSHRC research creation grant, I am currently, a PI for the GRAND Network, lead a new project area there entitled Visual Science for Stakeholders, and I am funded by and sit on the Executive Board for the CIV-DDD (Centre for Innovation in Visualisation and Data Driven Design). I work with an established, interdisciplinary team, to investigate new media networks that innovatively link biometric and mobile data ("Biomapping" and GRAND project "Mindful Technologies") and create gesture-based interfaces for dance and music making projects, and as museum installation (Body Editing). Deliverables include new interdisciplinary new media creation methods, and findings in the areas of social networking, social media need, public sphere possibilities, subjectivity, and identity. This work builds upon our findings from past projects that I co-led: the "Portage" and "Alter Audio" (MDCN) projects. The projects further develop interdisciplinary methods (combining art, design, social science, engineering, and critical theory), to create innovative, practical, and usable hardware and software technologies, and new networks of new media plus other material and digital technologies. Our current science visualization (GRAND/NCE) work links us, uniquely with scientsist in the NeuroDev network, where we collaboratively correlate, visualize and aestheticize data from children with Fetal Alcohol Syndrome. As leader of this GRAND/NCE project area, I am overseeing innovative work across our Canadian research partners, in areas of Visual Analytics, and Aesthetic Information Visualisation. We are currently migrating this work for new receptors and stakeholders, including

consumers with depression and anxiety (Trilllium Helath Centre), demonstrating work for visitors at the Ontario Science Centre, and organizing new collaborations for applications of dance therapy and mindfulness practice, for geriatric clients at Baycrest Medical Centre.

Past findings ("Portage" and "Alter Audio") included interdisciplinary and participatory design methodologies that incorporated ethnographic research. We reflected user desire throughout the design and art project creation phases. We developed advancements in mobile hardware-software networking and communications, as well as in mobile public art installations that effectively draw in new mobile users. I have written about mobile design methods in publications (Gardner 2008 and Gardner et. al., in press) and presented findings at a range of academic conferences, where they have contributed to budding conversation on the meaning and practices of user 'participation' among new media designers, researchers and ethnographic researchers.

My forthcoming documentary film on the state of survivors of persecution and torture seeking asylum in the United States will make a substantial contribution to documentary film and will attempt to influence policymaking. The film tracks the lives of 15 survivors of persecution from Sierra Leone, Cuba and Bosnia who are unable to acquire asylum in the US. The film shows that survivors seeking asylum endure further human rights violations through the American asylum system. The film is slotted for completion in April of 2009 and will be entered in human rights film festivals. The film contributes to the scant filmic analysis of the troubled American asylum process since 9/11/01 and the lack of information regarding ongoing torture and human displacement in Sierra Leone.

I've made significant research contributions in science and technology studies. I developed the concept of a "depression script" functioning depression consumer information to encourage biopsychiatric diagnosis, treatments and biosubjectivity. (Published in Gardner 2003 and 2007). I have also, developed of a theory regarding the Internet facilitation of biosubjectivity articulating risk to women through drug treatment. (Gardner 2007) These research areas ground my current book proposal in process, aimed at University of Minnesota Press, on risk discourses that inflect the production of mental health aids, biometric devices and other consumer technologies.

4. Career Interruptions and Special Circumstances

N/A

5. Contributions to Training

- 2009-present. Graduated 6 MA/MFA students, OCADU and Florida State University. Two MFA students currently underway for 2014 graduation.
- 2004-20013. Supervised 20 graduate students and 25 undergrad students in mobile art methods and installation, and eight undergraduates in mobile art/rapid prototyping. (Heritage Canada, NCE and SSHRC)
- 2006-present. Supervised undergraduate student in science and technology research project.
- 2004- 2005. Thesis assistance for two Undergraduate Integrated Media, OCAD.
- 2003-present. Supervised PhD Candidate Research Assistant, on my web design/communication project as a vehicle bridging academic and laypersons work on biotechnologies.
- 2003-present. Committee Member, Two Master Theses Committees; one in Interactive Media, another in Media Communication. Dept. Comm., Florida State University and provided thesis and dissertation support for one Masters and one PhD Student.
- 2003-present. Supervised Two Undergraduate Media Studies Major Independent Video Projects. Department of Communication, Florida State University.