To: Dr. Martin Racine Chair, Department of Design & Computation Arts

From: Dr. Sha Xin Wei, Associate Professor

Date: October 24, 2008

Re: Workload and Performance 2006- 2008

Dear Dr. Racine and the DPC Committee:

Please find enclosed my dossier for the Performance Evaluation from the period February 1, 2006 to January 31, 2008. As required, the dossier covers research, teaching and service, and includes additional support documents in these three areas.

1 RESEARCH CONTRIBUTIONS

1.1 Topological Media Lab (TML) Atelier Established

In this period, working in coordination with the Offices of the Dean of Faculty of Fine Arts, the Vice President for Research, Hexagram-Concordia, and the Department of Design & Computation Arts, and the architecture design consultants for the Engineering Visual Arts Building, I designed and supervised the construction and transplantation of the Topological Media Lab from its initial site in Hexagram to its present seventh floor site.

Building infrastructure and operations of this research facility has required large, sustained directorial, management effort, about 4-5 hours per day x 7 days/week x 49 weeks per year since inception of the lab. This is exclusive of the actual use of the facility for TML research: the time dedicated to designing and executing the experiments, mentoring researchers, publication and dissemination.

The most significant feature of the research facility has been the diverse and rich living, social ecology that has colonized the atelier over this period. [Out of scope of reporting period: To indicate the success of this establishment during this period: in Fall 2008. the most recent successes leveraging the TML include participations by members of the Topological Media Lab centrally in the creation of installations at the Venice Biennale with Erik Adigard and Chris Salter, and at the Shanghai eArts Festival with Peter Hasdell, Patrick Harrop, Sha Xin Wei, and Josh Bolchover.]

1.2 Research Projects

The major on-going research projects during this period include WYSIWYG, Oxygen, with applications to ancillary research creation such as Cosmicomics, Ouija, and IL Y A. Accompanying work has been writing for publication in the domains of responsive environments, movement arts and experimental architecture.

WYSIWYG. Funded by Hexagram. Textile objects such as wall hangings, blankets, scarves, and jewelry that create sound as they are approached or manipulated. These sonic blankets can be used for improvised play. I conceived the artistic, philosophical, and scientific directions of the project, and supervised the everyday conduct of the research, which was housed largely in the TML and in the Hexagram sensor lab. The scientific research was carried out in collaboration with Marcelo Wanderley, an associate professor at the McGill University Schulich School of Music in Montreal, and combined on Wanderley's research into the gestural control of sound synthesis and new interfaces for musical expression with the TML's sound design and interaction design, and theoretical scaffolding and social/aesthetic motivation.

WYSIWYG also provided a meaningful and challenging application of another Hexagram-funded project **Excitable Sites** joint work between the 6 graduate students in my research team with Prof. Joey Berzowska and Marguerite Bromley of the XS Labs (2006-2007). (See details on student mentoring and collaborations in the Teaching section.)

Oxygen Media Choreography

Media Choreography, the marshalling of sensor data, composition and projection of time-based media streams or fields in all formats, is the core technical research program of the Topological Media Lab, continuing an area of research inspired by the responsive environments such as TGarden, txOom, and tgvu. Recent applications include the Cosmicomics installation described below. This challenges and engages the most experienced of the TML researchers through the post-graduate level:, Rousseau, Sutton, Thivierge, Fortin, and Smoak, as well as the most technically promising interns. **Oxygen** has received funding from Hexagram.

The Oxygen media choreography projects and the Membrane series of installations are technical and artistic studies for the **Il Y A** project, funded by FQRSC.

1.3 Research Experiments

carried out under my supervision. (* denotes student or researcher for whom I am the principal supervisor.)

Artaudian Lights (* H Smoak, * E. Conrad) Blackbox Nov 2006. Co-supervised with Professor Michael Montanaro, this experiment was the first integration of camera-based tracking with the grid of DMX-controlled theatrical lighting in the Hexagram blackbox, together with real-time video. This is a pioneering instance of structured light composited from projected video and theatrical lighting.

Calligraphic Video (* JS Rousseau, * E Conrad PhD student, Y Assogba, * F Abtan Masters student), tangible, realtime video responsive to gesture or movement via computational physics simulations.

ODE particle physics engine to Jitter (M Fortin)

Ginzburg-Landau spin glass physics for video processing (Y. Assogba)

Ouija Experiment on Collective Gesture in Responsive Media Spaces, Hexagram Blackbox Workshop, Concordia University, June 21 - July 20, 2007. With Prof. Sha Xin Wei, Director; * Soo-yeon Cho, Choreographer; Dancers:* Mike Croitoru, * Kiani del Valle, * Veronique Gaudreau, * Rebecca Halls, * Marie Laurier, * Joannie Pharand, * Olivia Foulke; Oxygen team: * Jean-Sebastien Rousseau, Calligraphic video, videography, visual effects, production, * Tim Sutton, Gestural sound design and programming, production, * Emmannuel Thivierge, State engine, camera tracking, production, * Filip Radonjik, Live ink painting; WYSIWYG Wearable Gestural Instruments team: Marguerite Bromley (XS Labs), Tapestry design and weaving, * Elliot Sinyor (IDMIL McGill), Tapestry mechatronics, * David Gauthier, Tapestry mechatronics, * Freida Abtan, Sound design & programming, * David Birnbaum (IDMIL McGill), Sound design & programming, * Doug van Nort (IDMIL McGill), Gestural motion feature analysis; Logistics: * Josee-Anne Drolet, TML Project Coordinator, production, videography, editing; * Harry Smoak, TML Research Coordinator, production support, research advisor; * Ma Zhiming, Production; Faculty Co-Advisors: Prof. Michael Montanaro, Contemporary Dance, Ouija movement experiment design, Prof. Marcelo Wanderley, IDMIL, McGill University, WYSIWYG gestural control of sound synthesis; Prof. Joey Berzowksa, XS Labs, Interactive textiles.

1.4 Installation-Events

In this period, more than 9 public installation-events -- not student or class projects, but experiments with conceptual significance relevant to the Topological Media Lab's research agenda -- have been created under supervision:

Soft Architecture Installations

Troglodyte (* E. Conrad PhD student, + * JA Drolet, J Latek), hyper-bright mylar maze.

Numinal (* F. Lunn), custom felted cocoons with reactive constellations of light. (video in Safari)

Blink! (Maroussia Levesque, * H Smoak, * E Conrad, et al.) Whole building as display object, using built-in electrical switching. April 5, 2006.

Kontakt (K Franinovic PhD student), sonifying humans as circuits in ad hoc indoor play.

Meteor Shower Membrane (* T Sutton, * JS Rousseau, and other members of TML) real-time video and particle systems parametrized by motion, mapping to 24-voice variable harmonic sound.

1.5 External Projects, Public Exhibitions, Performances

Works with professional partners, and works exhibited as cultural or artistic installations or events in public.

Visible Silence (Choreographer L. Daza-Paris, Composer and Sound Designer P. Bonacina, et al., with support by) Blackbox May 2006.

Firewall Elektra Journée de la culture October 2006 (* E. Conrad, PhD student) (CIAM Newsletter, Elektra archive)

Cosmicomics Elektra 2007 (* J Rousseau, * T Sutton, * E Thivierge, with support by other members of TML; .O. Driss PhD student UQaM)

Dance Moves, was a Hexagram seed project to explore possibilities for 3D games and more flexible puppeteering control of virtual characters, based on signal analysis of mocap data from CMU.

Sebald Puppet Theatre, Prof. Mark Sussman, Great Small Works (NYC)

Hexagram Inaugural May 2006, Blackbox. A large-scale (24' x 50') video projection of motion-responsive fire.

1.6 Hosted Speakers, Visiting Artists and Researchers

In my capacity as Canada Research Chair, and working with the TML and allied units in the University, I have sponsored a series of artists, researchers, and research groups visiting Concordia University.

These include artists such as Toni Dove and researchers Dr. Niklas Damiris, and Dr. Helga Wild.

SPECTROPIA, Toni Dove, Canada Research Chair Hosted Visiting Artist Lecture, Concordia University, 18 May 2007.

Creative research and the co-production of values, conversation with humanists, artists, and universities in Canada's economies of culture: Roundtable with Helga Wild, Niklas Damiris and Sha Xin Wei, Canada Research Chair Hosted Panel, Concordia University, 2 April 2007.

Aside from the TML, one of the more ambitious of local research groups that we have hosted 2006-2007, is Prof. Erin Manning's experimentalist philosophy group, the Sense-Lab, co-directed with philospher Brian Massumi from U. de Montreal. In 2006 and 2007, the TML has participated in the SenseLab's Society of Molecules series of multi-day work-shops at the Society for Art and Technology (SAT) in Montreal.

(Dis)orientation Platform of Relation, movement exercise, with Tom Lamarre, Phillipa Rothfield, Housing the Body - Dressing the Environment Event, Société des arts technolo-giques (SAT) Montréal, August 2007.

Scholarly Presentations

Invited talks.

Art Research in Performative Spaces, Hexagram Mondays, SAT, Montreal, 13 February 2006. (SAT announcement)

Poetics of Performative Space, Who's In Control? Symposium, Harvestworks/Eyebeam/ Three-Legged Dog, New York, 25 February 2006. (PDF flyer)

Whitehead's Poetical Mathematics, Distributed Whitehead Symposium, Duke University - Stanford University and University of Buffalo, 24 April 2006,) (Duke website PDF, Duke poster PDF)

A Poetics of Responsive Space/ Technologies of Performance, SMARTlab Seminar, Univer-sity of East London, UK, 12 July 2006. (Announcement PDF)

Art Research: Sponge & the Topological Media Lab, 9 Evenings Reconsidered: Art, Theater and Engineering 1966, Leonard & Bina Ellen Art Gallery, Concordia University, 23 March 2007. (9 Evenings PDF)

Topology of Being, **Heidegger and Space,** Stanford University, 2 June, 2007.

What's at Stake? Poetics of Performative Space, **AI & Society Socio-ethics and Interactive Technologies: From Judgement to Calculation**, Closing Lecture, Middlesex University UK, October 5-6, 2007. (Invitation Letter PDF)

Laboratory Practice as Art Practice as Laboratory Practice? A Call for Case Studies on Creation/Research, Society for Social Studies of Science (4S), Montreal, October 11-12, 2007. (flyer PDF, program PDF)

Enchantment and Public Space, SIAT, Simon Fraser University, 9 January 2008.

Scholarly Publishing Work

(* indicates a student or researcher for whom I was the principal supervisor.)

Chapter in Book Published

Poetics of Performative Space, in Cognition, Communication and Interaction: Transdisciplinary Perspectives on Interactive Technology (Human-Computer Interaction Series), Ed. S. Gill, Berlin: Springer-Verlag, pp. 607-624.

Refereed Journal Articles Published

Doug Van Nort, * David Gauthier, Sha Xin Wei, Marcelo M. Wanderley, **Extraction of Gestural Meaning from a Fabric-Based Instrument**," ICMC International Computer Music Conference Proceedings, 2007.

David Birnbaum, * Freida Abtan, Sha Xin Wei, Marcelo M. Wanderley, "**Mapping and Dimensionality of a Cloth-based Sound Instrument**," Proceedings of Sound and Music Computing (SMC), Lefkada Greece, 11-13 July 2007.

Editorial Work

AI & Society, I was invited to join the first generation of artists in the primary Springer-Verlag journal on artificial intelligence and studies of technology and society.

Experimental Practices Book Series, Rodopi Press. I was invited to become a founding editor of this book series conceived to foster rigorous and deep exchanges of ideas between Europe and the Americas on experimental practices in art, science, and philosophy.

Research Clusters and Workshops Organized

As part of my Canada Research Chair mandate, I organized a series of roundtables, panels, workshops, many with at least one facet open to the public. A central aspect of the mode of TML research has been to expose each chapter of it to the interested public for criticism and discussion. This has been publicized through multiple channels, including the Faculty of Fine Arts news service.

Research Clusters

Soft Architecture International Research Cluster. Karmen Franinovic (PhD student; faculty at Switzerland), Flower Lunn (independent artist Montreal), * Elena Franinovic (MA CS), Liza Solomonova (doctoral student in UdM Dream and Nightmare Lab), * Harry Smoak (PhD), Anne-Maria Korpi (independent artist Buenos Aires & Munich), * Patrick Harrop (Prof. Architecture U. Manitoba; PhD Concordia), Ron Broglio (Prof. Literature Communication and Culture, Georgia Tech).

Movement and Responsive Media Research Cluster: * Soo-Yeon Cho, Kiani dal Valle (Dance); * JS Rousseau (CART); * Rene Sills (IMCA), * Tim Sutton (Electroacoustic Music)

Roundtables and Workshops

Blackbox Residency, Concordia University, with * Harry Smoak (Research Coordinator), and over 24 students and affiliate artists and researchers, 29 April - 20 May 2006.

Soft Architecture Research Roundtable, Karmen Franinovic, * Harry Smoak, * Erik Conrad, Hexagram-Concordia, Montreal Canada, 3 May 2006.

Calligraphic Video Research Roundtable, Sha Xin Wei, * Frieda Abtan, * Yannick Assogba, * Michael Fortin, Hexagram-Concordia, Montreal Canada, 8 May 2006.

Wearable And Gestural Sound Research Roundtable, Sha Xin Wei, * David Gauthier, * Jason Levine, Hexagram-Concordia, Montreal Canada, 10 May 2006.

Dream and Nightmare Research Roundtable, Dr. Tore Nielsen (U. de Montréal), * Elena Frantova, Lisa Solomonova, Hexagram-Concordia, Montreal Canada, 12 May 2006.

Technologies of Performance Research Roundtable, Dr. Chris Salter, Livia Daza-Paris, * Maroussia Lévesque, Sha Xin Wei, Hexagram-Concordia, Montreal Canada, 19 May 2006.

Inflatables Workshop, Associate Dean Ted Kreuger, School of Architecture, Rensselaer Polytechnic Institute, and Associate Professor Patrick Harrop, Department of Architecture,

University of Manitoba flew in 12 students from their respective institutions and worked with TML (* H. Smoak) on hacked toy sensor circuity and custom inflatables, 19-22 October 2006.

Topological Media Lab Open House, October 2, 2007.

Soft Architecture Dedale Workshop, with * Patrick Harrop, Prof. Architecture U. Manitoba, * H. Smoak, * JA. Drolet, * E. Sinyor, * JS. Rousseau, * T. Sutton, * E. Thivierge, * M. Sutherland, F. Lunn, & Dedale Studio, Hexagram-Concordia, Montreal Canada, 5-12 November 2007.

Reviews of Work

Some books are appearing that cite or analyze my work. These include:

Isabelle Valverde, Interfacing Dance and Technology: a Theoretical Framework for Performance in the Digital Domain, in preparation for Portuguese Gulbenkian Foundation and the Foundation for Science and Technology Book Series, (Ph.D. Dissertation, UC Riverside 2004).

Bullivant, Lucy. Responsive Environments : Architecture, Art and Design. Paperback ed: Victoria and Albert Museum, 2006, pp. 74-75.

Suchman, Lucy A. Human-machine Reconfigurations Plans and Situated Actions. 2nd Edition. Cambridge; New York: Cambridge University Press, 2006, chapter 15.

Wegenstein, Bernadette. Getting under the Skin : Body and Media Theory. Cambridge, MA: MIT Press, 2005.

2 TEACHING

2.1 Undergraduate Courses

I created at least one new undergraduate course every year, including:

Enchantment and Topological Matter, CART 454

Alchemy and Realtime Video: CS 498 A This course required about 80 hours of administrative work to establish over two years, settling issues such as cross-listing between two

Faculties, resolving ENCS 2/3 -day per week schedule with FoFA's single 4-hour session / week schedule; finding funding for 4 TA'ships from Computer Science; equipping the CDA labs with Max/MSP/Jitter licenses; equipping the CDA labs with a set of Firewire cameras; and so forth. Due to the extremely demanding mathematics from computer vision and 2D signal analysis, creating the curriculum for the first undergrad year required on average 16 hours / week of preparation prior to lecture.

2.2 Graduate Courses

At the invitation of the Humanities PhD Program, I created a new PhD course:

HUMA 888, Doctoral Seminar in Interdisciplinary Studies I: Critical Studies of Media Arts and Sciences: Subjectification, Process, and Performance: survey of philosophy for interdisciplinary studies in the humanities at the doctoral level. Based on the positive results of the humanities seminar, I as invited to teach again in the Humanities PhD program.

2.3 Undergraduate Mentoring

Tim Sutton (electroacoustics), JS Rousseau (CART) to graduation and professional research at the TML. Elena Frantova (CART) and Michael Fortin (CS CART) to graduation and continuation as Masters students in CS.

2.4 Graduate Mentoring (* principal supervisor)

Masters: * Elena Frantova, * Michael Fortin CS. Freida Abtan (co-advised with Jean Piche at U de Montreal)

E Frantova and M Fortin each were awarded the ENCS Masters Research stipends from the Dean of ENCS for 2007-2008, and expect to complete their Masters programs in the coming year.

Grad Certificate: * Livia Daza-Paris (2006); * Filip Radonijk (2007);* Jerome Delapierre (2008)

PhD:

* **Erik Conrad** (SIP, haptic vision, tactility and spatial practices);

* **Valerie Lamontagne** (SIP, relational performance and ubiquitous technologies);

* **Harry Smoak** (SIP, critical studies of performance, theatrical and other technologies of lighting);

as well as Karmen Franinovic (Communications, technologies of public space, sounding objects); Magda Wesokowska (Design U Montreal), Jhave Johnston (SIP), Charles Gagnon (Humanities PhD), Jennifer Willet (SIP PhD).

Doctoral students from other universities internationally have asked me to sit on their committees:

Doctoral External Examiner

ANne Nigten, (V2 Institute for Unstable Media) SMARTlab, University of the Arts London UK, 2006.

Aleksandra Dulic, Fields of Interaction: From Shadow Play Theatre to Media Performance, Simon Fraser University, 2006.

Mentoring Research Teams

WYSIWYG teamwork

WYSIWYG was one of the most successful and intricate collaborations between two very different laboratories: the TML / Hexagram and Dr. Wanderley's IDMIL at McGill's CIRMMT. I created, mentored, and managed a multi-university team of 6 Masters and PhD students, a post-graduate researcher (* David Gauthier), and one visiting researcher (Rodolphe Koehly, McGill PhD). The teaming worked at every level, and at every scale, and in every component. Although it was not planned, it naturally emerged that each component of the research was carried out in pairs, one from each lab. I planned the the overall research strategy with Dr. Wanderley, and managed the project on a daily basis. David Gauthier (Concordia post-graduate researcher) and Elliot Sinyor (McGill Masters) created the electronics and software to animate the weaving created by Margerite Bromley of XS labs on the Jacquard loom. * Freida Abtan (Concordia, U de Montreal Masters) and Doug van Nort (McGill PhD) worked on sound design. Gauthier and Nort created the analysis and processsing algorithms mapping from the electronic textile sensors to the sound instruments. Abtan and David Birnbaum (McGill) constructed a set of sound instruments in MSP. After a year and a ha;f of creation and experiment, the group wrote three papers of which two were published in the main academic venues for this work: Sound Music and Computing (SMC July 11-13, 2007), and the International Conference on Computer Music (ICMC 2007). Prof. Wanderley and I sent our graduate students to represent our research results at these conferences in Lefkada Greece and Copenhagen.

2.5 Post-doctoral Mentoring

Ma Zhiming, Visting Scientist, from Xinjiang Normal University, sponsored by China Scholarship Council of the PRC, 2006-2007.

2.6 Summer Workshops

Continuing my pedagogical practice since 2003, I have sponsored summer study programs on a volunteer basis.

Topological Media Summer Workshop 2006. A summer course and workshop with 6-12 students on volunteer participation, meeting once a week for 8 weeks in the period May 15 - July 30, 2006.

Ouija 2007. A 6 week long series of seminars and workshops preceded and overlapped the Blackbox experiment, with volunteer participation by students. (See above for names.)

3 SERVICE

3.1 Design and Computation Arts Department

CART Program Committee, 2007-2008

CART Curriculum Committee, 2007-2008

Faculty Search Committee 2007-2008.

Computer Science and Software Engineering Department

Liaison with Fine Arts 2006-2007, 2007-2008

3.2 Faculty of Fine Arts

With Profs. Chris Salter, Mark Sussman, and Michael Montanaro, I led a **Research Initiative on Performativity**. We were awarded a seed grant from the Faculty of Fine Arts to prepare for grants to SSHRC and elsewhere for research theme of Performance As Knowledge. [Out of scope for duration of report, but validating the initiative. In 2007-2008 we have already attracted three doctoral students to work with us, namely Christoph Brunner and Jen Speigel from Goldsmiths College London UK, and Tatiana Koroleva from University at Buffalo NY.]

3.3 Other

Hexagram Axis Coordinator, Active Textiles and Ubiquitous Computing

Hexagram Research Group, Performance and Techne. I led the formation of a research group in Hexagram across Concordia, UQaM, McGill, and U. de Montreal to study shifting theories and practices of performance together with emerging technologies of performance. initial members include Sha Xin Wei, Mark Sussman, Chris Salter, Michael Montanaro and at Concordia; Marthe Adam, Jean Gervais at UQaM; and Jean Piche at U. de Montreal.

Hexagram Teas 2006-2007, a year-long series of weekly teas sponsored by my Canada Research Chair and the Topological Media Lab, together with Prof. Nicolas Reeves, Scientific Director of Hexagram, UQaM. These alternated between UQaM and Concordia, and offered a much-needed locus for informal gatherings by researchers affiliated with the Hexagram network, and their guests.

4 SUMMARY

In summary my contributions as teacher, researcher, and administrator to the Department and University community have been substantial over the past two years. This dossier represents my accomplishments and I hope my overall performance is acknowledged as of 'excellent' quality. According to Articles 38 and 39 of the collective Agreement, I wish to be considered for both Career Development Increments (CDI) and merit.

Should you require further clarification of information, I can be reached at my office [514] 848 2424 ext. 5949 or by email sha@encs.concordia.ca

Sincerely,

Sha Xin Wei, Ph.D.
Canada Research Chair • Associate Professor • Design and Computation Arts • Concordia University
Director, Topological Media Lab • topologicalmedialab.net/ • topologicalmedialab.net/xinwei

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