

Tenure Dossier of Gerry Stahl

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Executive Summary

Scholarship while at Drexel

Established, pursued and published a research agenda setting a new direction within the field of Computer-Supported Collaborative Learning (CSCL). Built a lively, productive research lab with: IST students; impact at Math Forum; collaborators locally, nationally and internationally; international visiting researchers; and an international reputation. Generated over a thousand student-hours of experimental data with the Virtual Math Teams (VMT) project.

Published a seminal book on theory, methodology and empirical findings of online learning, at MIT Press. Edited 3 volumes (international conference proceeding and 2 special journal issues). Published 12 book chapters (9 as sole author) Published 12 peer-reviewed journal articles (7 as sole author). Presented 2 conference keynotes (in Germany and Brazil). Published 49 peer-reviewed conference papers. Gave 13 other peer-reviewed workshops and presentations, for a career total of about 150 professional publications (*see CV*). Represented Drexel/IST at 32 international conferences (including in Chile, Norway, Netherlands, Germany, Switzerland, Taiwan, Sweden, Brazil, Cyprus, Singapore, Finland) and 8 other professional meetings.

Serve as PI on 3 major NSF grants totaling \$2,930,762 for innovative technology, digital library services and science of learning. Of 4 proposals submitted to NSF with me as PI while at IST, 3 were fully funded. Submitted collaborative proposals with CMU, Hawaii, Rutgers currently pending at NSF totaling \$2,351,875 (*see CV*). Was the first IST member of Drexel's "Million Dollar Club". Won first prize with students in Drexel/IST Research Day posters 2005, 2006, 2007.

Teaching while at Drexel

Dissertation supervision: Dissertation chair for 4 IST students (who will graduate in 1-2 years); serve on other dissertation committees (including in Chile, Norway, Germany); advise others.

Research experiences: Provided 62 student-quarters of guided research experience in 4 years. Independent studies: Provided 34 student-quarters of independent studies. Data analysis sessions: Organized and ran 12 quarters of weekly data analysis sessions for PhD students and other researchers.

Developed a problem-based, student-centered, collaborative-learning, computer-supported approach to teaching CSCL and HCI (INFO 110, 310, 608, 610, 780) in-class, online and blended (*see Teaching Portfolio*). Taught 14 courses at freshman/sophomore, junior/senior, master & PhD levels and bought out of 14 courses in order to direct research project.

Service while at Drexel

Founded the *International Journal of Computer-Supported Collaborative Learning*, published by Springer, now in second year. Executive Editor, primary review supervisor and main author of introduction to each issue. Also serve on Board and Reviewers of other journals and book series.

Was Program Chair of CSCL 2002. Serve on Program Committee of international conferences; organize workshop series and/or a major workshop each year. Helped found and serve on Board of International Society for the Learning Sciences.

On Scientific Advisory Boards of major research labs in Germany, Scandinavia and Singapore.

Served on IST committees for: Doctoral Program, Research Talks, Strategic Futures (two years), Curriculum (two years). Help to support the Math Forum @ Drexel with funding and services—in collaboration with other Drexel faculty and students.

Narrative

Introduction

I have been involved with computer software design since 1965, when I was still an undergrad at MIT. I earned PhDs in philosophy (Northwestern) and computer science (Colorado). As a Research Professor at Colorado, I began to explore innovative educational software and became involved with the research community in “computer-supported collaborative learning” (CSCL) from the time of its first conference in 1995. I came to Drexel in 2002 to help build a research culture at IST and to continue my work on CSCL through teaching and collaboration with the Math Forum (*see the section below on Professional Career Path*). While at Drexel, I have earned an international reputation as a leader in CSCL theory and research, through an ever-increasing publication record and a heavy travel schedule. Success in raising about three million dollars in NSF funds has allowed me to build a productive research lab in collaboration with faculty and students at IST and other Drexel schools: the Virtual Math Teams (VMT) project. The topic of my research has direct implications for teaching in the networked era. I have evolved an approach to teaching my courses that is aligned with current theories in the learning sciences. In addition to service on IST committees, I have contributed to the Drexel community by bringing a number of visiting researchers to the campus, where they give talks and work with students (*see the section below on Annual Highlights at Drexel*). Publications such as my MIT Press monograph and my Springer Press international journal—as well as my presentations and contacts around the world—have publicized Drexel and IST as lively centers of scholarship.

Scholarship Summary

I believe that my book on *Group Cognition* documents the beginning of a fruitful research agenda. My recent case studies—published in journals and conferences—push that agenda to a further level, demonstrating concretely the approach proposed in the book. The next stage will include many intensive explorations of specific aspects of this agenda in collaboration with my PhD students and other colleagues, both at Drexel and elsewhere. In addition to facilitating and helping to publish our studies of data from the Virtual Math Teams (VMT) project in an edited volume I plan to publish, I have contracted for a systematic monograph of my own (in the CSCL book series by Springer) to outline a comprehensive theory of computer-supported collaborative learning, building on the design experiments and analyses of the VMT research lab. These two forthcoming books will document the VMT project as a model for research in group cognition and online learning. (*The Scholarship Appendices present my recent book and three peer-reviewed journal papers reflecting my current research in the VMT project.*)

Teaching Summary

My teaching is inseparable from my research and from my service to the international community. I try to teach according to the theories and findings of CSCL research, and in return I learn a great deal. I feel that one of the greatest strengths I have to offer students is my appreciation of research and my experience in designing software and analyzing its usage. I

encourage students at all levels to intern in my research lab, and have supervised many quarters of independent study, research experience, and PhD dissertation work. I also involve faculty and their students at the I-School, other schools of Drexel and other universities globally to collaborate in the VMT project, including PhD students and faculty who come to Drexel from Europe and Asia for several months as visiting researchers. (*The Teaching Appendices present my Teaching Portfolio that details my classroom teaching, as well as a book chapter that I wrote for students around the world who are interested in CSCL.*)

Service Summary

Recognizing a need for more infrastructure to support the field of CSCL to address the complex issues that require a global community research effort, I helped to establish the International Society for the Learning Sciences and a CSCL journal under its auspices. The journal serves a community educational mission as well as providing an archival home and distribution center for innovative papers and documented findings. I brought together over 40 leading CSCL, CSCW and HCI researchers to form the Board of Editors. The journal is already recognized as well established and off to a strong start, with a unique combination of Springer publication and open access Web availability. Within the I-School at Drexel, I have been dedicated to fostering a research culture, building the relatively new full-time PhD program and adopting some of the findings of CSCL in the course curriculum. (*The Service Appendices make available the International Journal of Computer-Supported Collaborative Learning, as well as discussing my role in both the CSCL research community and the Drexel research community. Other service has been detailed in my CV.*)

Summary of Provost's Criteria

Demonstrated Excellence

1. I believe that I have demonstrated *excellence* in expert knowledge of information science & technology, specifically within the area of computer-supported collaborative learning. I have a demonstrated commitment to the continuing development of my competence and of the field itself.
2. I have demonstrated *satisfactory* performance in effective teaching. In particular, I have contributed significantly to an atmosphere and community of research at IST and Drexel.
3. I have demonstrated *excellence* in pursuing a continuing program of research and scholarship in my field, including the establishment of an international reputation for leadership.
4. I have assumed a *fair* share of administrative and service tasks at IST and Drexel, working with colleagues at the College and at other parts of Drexel, including the Math Forum. I have also served the international research community with *excellence*, establishing a respected journal for my field, founding a society for the field, organizing major parts of many international conferences and serving on scientific advisory boards of leading research labs.

Expert Knowledge

1. I have been invited to serve and have served on several grant review panels at NSF. I have written external tenure review letters for researchers at other universities.
2. I was invited to serve as founding Executive Editor of the *International Journal of Computer-Supported Collaborative Learning*, now in its second year with Springer. I also serve on other journal boards and review committees.
3. I am on the scientific advisory boards of large research projects in Singapore, Germany and Scandinavia.
4. I frequently serve as moderator or panel discussant at international conferences and annually organize a workshop series and/or a major workshop.
5. My students and I have won first prize awards at the IST/Drexel Research Day poster competition for the past three years.
6. I have represented IST and Drexel at about 40 national and international professional meetings or conferences.
7. I am constantly learning as part of my research and teaching. I view teaching and dissertation supervision as co-learning experiences.
8. I meet with networks of researchers in my field to discuss new ideas. My research team is constantly sharing new literature and ideas, as well as developing our approach to theory, methodology and pedagogy.

Pedagogy

1. I teach courses in my field at every level, from Freshman to PhD students. I always try to integrate my research findings into my teaching in two ways: (a) by adopting techniques of computer-supported collaborative learning in my course designs and (b) by involving students in considering the issues of my research at an appropriate level.
2. I have developed an approach to teaching my courses that has been picked up to varying degrees by several of my colleagues at IST. The approach takes advantage of computer support, even for courses that are scheduled in class. Collaborative learning in small groups plays a major role, with student-centered, problem-based inquiry learning taking place. I also provide many opportunities for students of all levels to be directly involved in my research through internships, research experiences, independent studies, research assistantships, weekly data sessions and online seminars.
3. I publish extensively and my papers, book and journal are often used in graduate courses around the world.
4. I am dissertation advisor for four IST PhD students. I am on committees for others or provide informal advice. I also mentor foreign students, having served on three dissertation committees (in Norway, Germany and Chile).

Publication, Research, Scholarship

1. I have been extremely productive in publishing books, book chapters, journal articles and conference papers since coming to Drexel. I was invited to give opening plenary keynotes

in Brazil and Germany. I have been invited to write a large number of book chapters. I published a 500 page monograph at MIT Press, which is having an effect on my field.

2. I have been extremely productive at securing external funding and at managing a relatively large research project. I am also co-PI on a number of proposals to NSF that are currently pending.
3. As stated above, I spend a lot of time directing the research of students. Many of my most recent papers are co-authored with my PhD students.
4. My research has gained an international reputation. Researchers have requested to join my research team during sabbatical years or Fulbright Fellowships.

Service to the University, to the Profession and to Society in General.

1. Online learning is an important issue at IST, Drexel and throughout academia. My research aims to understand in detail how students interact in online learning contexts and how appropriate computer support and pedagogy should be designed. My research has practical aspects as well as theoretical and methodological. I try to develop effective online pedagogical techniques in my own teaching as well as in my research experiments. I then try to share successful techniques with colleagues at IST and the Math Forum.
2. I participate actively in faculty committees at IST, including revising the curriculum, defining Strategic Futures and bringing speakers to the College for talks.
3. I represent IST and Drexel at international events in my field.
4. I play a leadership role in creating institutions to serve my professional community globally.

Professional Career Path

Philosophy

I pursued a broad education as an undergraduate at MIT, graduating with a joint degree in humanities and science. I took heavy doses of mathematics, physics and computers as well as literature and philosophy. I then went to graduate school in philosophy at Northwestern, conducting dissertation research on phenomenology and hermeneutics at Heidelberg and critical social theory at Frankfurt. This prepared me to think clearly and write lucidly.

In the early days of PCs, I worked as a software developer and computer consultant, helping non-profit organizations in the neighborhoods of Philadelphia to computerize. I also raised millions of dollars for neighborhood development, learning to write effective grant proposals and budgets.

Computer Science

Deciding to fill in my theoretical understanding of computers, I went to the University of Colorado for technical graduate study in 1989. I joined Gerhard Fischer's research lab for human-computer interaction and knowledge-based systems and I worked with design theoreticians. I taught and coordinated the major programming course, introducing object-oriented programming into the curriculum. I also learned to plan, implement and test relatively large software systems for group usage.

Cognitive Science

After graduating with a PhD in artificial intelligence and a certificate in cognitive science, I helped to found a small research lab that worked primarily on NASA grants. I pursued a project in educational software, anticipating by 10 years the concept of a web 2.0 online digital library for teachers to share constructivist curriculum. I returned to the university, first as a post-doc and then as a Research Professor in the Department of Computer Science and the Institute of Cognitive Science, raising my salary from grants.

Learning Sciences

As a research professor, I began to define my own research agenda. I had worked with Tim Koschmann and attended the first CSCL conferences, so I became increasingly interested in providing computer support for education, which I saw as an exciting opportunity. I started studying and teaching about the major theories of collaborative and problem-based learning from Vygotsky, Lave, Scardamalia, Barrows and others as well as studying communication theory and conversation analysis. My background in philosophy gave me insight into the theories, and my training in computer science allowed me to critically evaluate technological proposals.

Computer-Supported Collaborative Learning (CSCL)

By 1999, I was becoming active in research conferences and was asked to be Program Chair for CSCL 2002 in Boulder. This provided an opportunity for me to refine my agenda as more focused on encouraging the development of a theoretical framework for CSCL. It was noted, for instance that my paper at ICLS 2001 (the International Conference of the Learning Sciences, sister conference to CSCL) was the first theoretically-oriented paper ever at that conference series. Under my leadership, CSCL 2002 featured an unusual emphasis on theory, that has continued at subsequent conferences. At CSCL 2002, we also launched ISLS (the International Society for the Learning Sciences) to support the ICLS and CSCL conference series. By the CSCL 2003 conference, I was considered a leader of the CSCL research community. In the meantime, I had accepted an offer to go to Drexel and had first spent a year at a major CSCW research lab in Germany. So the Europeans—who were the most active segment of CSCL—saw me as an American who was particularly friendly to Europe and sympathetic to the European perspective.

I was asked to be Executive Editor of a new ISLS-sponsored journal, but I insisted on sharing the title with a European to make clear its international outlook. I explored the many options for starting a journal and eventually negotiated an arrangement with Springer to print the journal and make it available electronically to subscribers, but to also allow us to make pre-prints freely available on the Web. IST agreed to support a half-time editor for the journal to help non-native-English-speakers to publish with less disadvantage, and I hired David Tietjen.

Group Cognition

When I first arrived at Drexel, I was introduced to the Math Forum @ Drexel. They had a solid track-record at developing online resources for education. They also had a long-standing interest in research and a commitment to collaborative learning. We soon saw that by working together we could conduct a project that would add a strong collaborative element to the Math Forum and provide a laboratory for my CSCL research. We developed a number of proposals, and all but one of them were funded.

The funded proposals had a common aim, to establish an effective online environment for students to engage in collaborative discussion of mathematics. We founded the Virtual Math Teams (VMT) project. VMT soon attracted IST doctoral students and foreign researchers. A workshop on VMT at Drexel at the end of the project's first year brought an international gathering of experts in CSCL and related fields to reflect on the work of the project. Leading researchers gathered from 15 countries. During four intensive days of the workshop, the 36 participants engaged in hands-on experience with collaborative math problem-solving and analysis of project data. A number of these researchers or their colleagues came back later to work on the project at Drexel for 3-6 months.

While at Drexel, I decided to collect my most important publications and consolidate them into a book. I signed a contract with MIT Press and began to analyze my research path. It became clear that I was heading in a certain direction and that the reasons for my personal odyssey were shared by the field as a whole. There was a need to move away from the computer as intelligent agent and toward designing digital media to support intelligent human communication and collaboration. Relatedly, analysis should move away from an exclusive concern with individual cognition and take into account group interactions. Gradually, the theme of "group cognition" emerged in my manuscript and I wrote several more chapters to explore this concept. I then drafted an introductory and a concluding chapter. The book now defines my work for the decade through my first years at Drexel and the beginning of the VMT project. It presents rather thoroughly the theoretical and methodological reflections behind my current research, as well as the empirical investigations that led me to my current agenda.

By "group cognition" I mean the fact that small groups of people can engage in activities such as mathematical problem solving and can accomplish intellectual achievements that would be considered cognitive if done by an individual. These accomplishments often proceed by means of interactions in which ideas emerge from the discourse between multiple perspectives and cannot be credited to any one person. An utterance by one person responds to the previous discussion and group context in ways that would otherwise not have arisen, and the utterance is structured so as to elicit specific kinds of responses from other participants. Through a sequence of complexly and subtly interwoven interactions, cognitive results are achieved. The meaning of what was said is determined at the group level of the interactions, and not attributable to pre-existing mental representations of the individual participants.

Of course, group cognition relies on the ability of the participating individuals to interpret and understand the group meaning. But even this individual understanding is fundamentally situated in, and emerges out of, the interactions of the group, which are structured so as to coordinate these understandings. The philosophy of group cognition does not deny individual cognition, but calls for a re-thinking of the ontology, epistemology and methodology for exploring mind.

Chat Analysis

The VMT project provides ideal data for my research and for that of my students and colleagues. Over the past four years, we have refined the technology and the presentation of the VMT service so that we can preserve an excellent detailed record of virtually everything that takes place in the online interactions. Thus, we can analyze everything that is available to the students participating in the service. In general, students know nothing about each other except what is displayed during the chat, and everything displayed during the chat—including social awareness notices—can be reviewed in detail by the researchers. There is no need to worry about camera

angles, lighting, transcriptions, interview protocols, coding reliability, etc. to produce an accurate and useful record.

The VMT data can be analyzed for evidence of the accomplishment of problem solving and other tasks (group cognition) through collaborative interaction within the online small group. This can be achieved through close analysis of how small groups of participants co-construct shared meanings and sustain joint activities through the sequentiality and relatedness of their situated contributions and their social participation. Of course, there are many questions that we cannot address this way, such as what goes on in individual heads and what is remembered by specific participants years later. But these issues are beyond the scope of my group cognition research agenda. I am interested in the group accomplishments, which have been largely ignored in previous research, but which constitute what is unique to CSCL and most promising for the future of computer support for building collaborative knowledge.

The VMT research group that I direct has developed a methodology for chat analysis that is tuned to the exploration of group cognition in a chat environment. This approach is inspired by ethnomethodologically-informed conversation analysis, but our domain differs in multiple significant ways from that of most conversation analysis: Chat is online so neither the participants nor their production of utterances is visible; interactions are text-based so they lack intonation, personality, accent; the topics are math problem solving, rather than socializing; the participants are primarily teenage students engaged in learning, not adult domain experts; the groups are usually 3 to 5 instead of dyads; the participants generally do not know each other or know much about each other; etc. The chat analysis looks closely, line-by-line, at how postings build upon each other sequentially; how they respond to previous postings and elicit future ones; how they establish the social order of the group interaction; how they repair problems of co-construction of shared group meanings; how they construct, reference, remember and name resources that they use in their meaning making.

Research Agenda

I want to understand how students interact in an environment like VMT. How do they approach a given problem and make use of the affordances of their technology? How do different technical details change or mediate the interactions and the methods that students develop? Such understanding can guide the design of CSCL systems and help to attain the frustratingly elusive vision of globally-networked collaborative learning.

I have begun my analysis by looking at details of how interaction moves are accomplished in brief episodes of case studies. Interaction is tightly embedded in its unique circumstances, which cannot be experimentally manipulated or simplistically generalized. Collections of case studies of a particular kind of interaction can deepen one's sense of how people engage in such interactions. This may lead to targeted hypotheses that can be explored by quasi-experimental investigations, ethnographic observation or structured interviews. As CSCL researchers share their analyses, the community will gradually develop the expertise and conceptualizations needed to guide system design and pedagogical intervention.

Under my leadership, the VMT research team is exploring through the use of chat analysis and other empirical methodologies such topics as: group cognition, group meaning making, the self-constitution of small groups, the nature of online co-presence, group agency, virtual deixis, the adoption of the VMT system, the virtual co-construction of math objects, bridging online discontinuities, negotiation of meaning and online group information behavior. We are

developing our analyses collaboratively in weekly data sessions, as well as in international workshops where we share our findings with researchers who are using our VMT environment at other institutions.

I believe that my greatest professional contribution can be made in the theory of computer-supported collaborative learning, which I have recently been discussing under the trope of “group cognition.” This theory building draws heavily upon my unique background in social philosophy. But I now approach the development of theory via empirical observation and rigorous analysis. The VMT project provides a rich source of data and our chat analysis provides an appropriate methodology. The theory of group cognition that is emerging from our studies is compatible with other current theories of distributed cognition, situated action and activity theory. Our chat analysis is modeled on current scientific approaches such as conversation analysis and design-based research. The VMT project itself has practical application at the Math Forum and even in online teaching at IST. I have tried to pursue what I see as my greatest potential contribution during my stay at Drexel, using it to guide my scholarship, teaching and service.

Annual Highlights at Drexel

2001/02

I accepted a position at IST/Drexel, but delayed starting for a year in order to work at the Fraunhofer Institute FIT near Bonn, Germany. I worked in the well-known CSCW department that had developed BSCW, a groupware system widely used in Europe. I was the group’s lead on a large collaborative European Union research project, adapting BSCW for use in European K-12 classrooms. I established many professional contacts, particularly in Germany, the Netherlands and Scandinavia. That year I was local organizer for the ACM GROUP Conference in Boulder, Colorado. I was also Program Chair for the international CSCL Conference in Boulder, and I edited its Proceedings.

2002/03

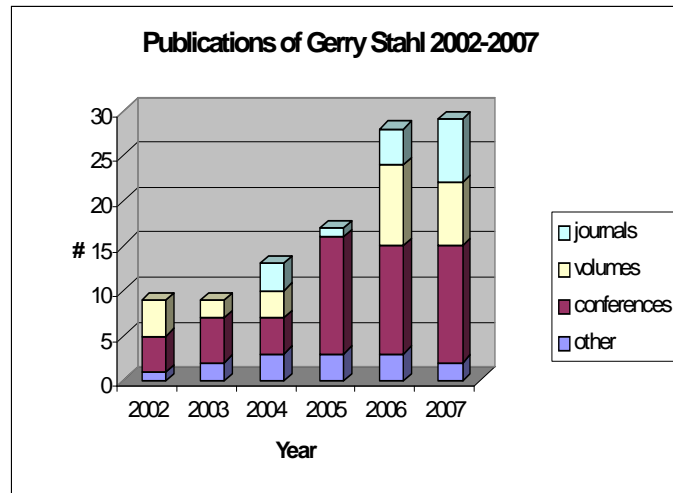
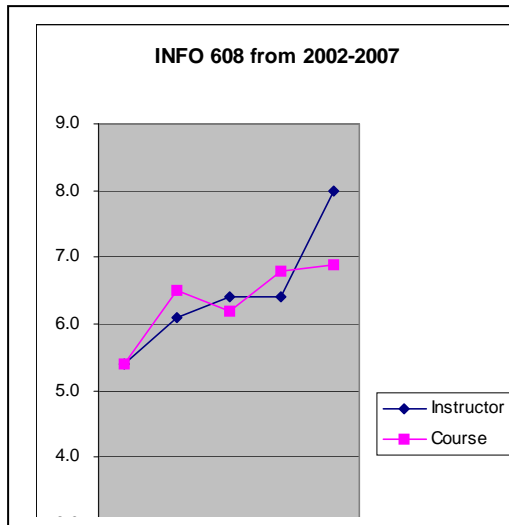
My first week officially at Drexel I spent at a conference in Chile. I presented a plenary paper and served on the Doctoral Consortium. I subsequently served on the dissertation committee of one of the students who I advised in that Doctoral Consortium, and we co-authored a series of papers. In collaboration with the Math Forum, I submitted grant proposals to NSF and received funding for an NSDL digital library service and an ITR/IERI innovative technologies project.

2003/04

We set up the Virtual Math Teams (VMT) project, housed at the Math Forum. I attracted students from IST as GRAs and interns. I hired a visiting researcher from the Netherlands, who worked with us to define and evaluate a comprehensive coding scheme. We ended the project’s initial year with a workshop of 36 international researchers to reflect on future directions.

2004/05

In the second year of the VMT project, a visiting researcher from Spain joined us and worked on statistical analyses using our coding scheme. I also hired a post-doc with expertise in conversation analysis. We established weekly data analysis sessions that have been running continuously ever since. Together, the VMT team has evolved a methodology of chat analysis



based on the approach of conversation analysis. We have designed the VMT online environment to produce a complete record of interactions adequate for rigorous analysis.

In my Third Year Review, it was suggested that I improve my online teaching and begin to publish journal articles. Dean Fenske encouraged me to found a new journal for CSCL. Since then, my evaluations as instructor have improved in INFO 608 (*see chart above*); I began publishing journal articles (*see other chart above*); and I founded an international journal for my field (published out of Drexel by Springer).

2005/06

This year, I published my book on *Group Cognition* and started to publish the quarterly *International Journal of Computer-Supported Collaborative Learning (ijCSCL)*. The VMT project established an annual VMT Spring Fest contest for middle school math students. Spring Fests were held in May 2005, 2006 and 2007. They provide some of our best data for analysis, including six PhD dissertations. We contracted with a German research lab to use their software for VMT. Two researchers from there each spent a summer at VMT revising the software with us. This software provides the chat system, shared whiteboard, referencing tools and Lobby web portal. A visiting researcher from Canada joined us as well, bringing expertise in middle school science and math pedagogy. I was awarded a two-year grant from NSF to plan a major national research center for “Engaged Learning in Online Communities.” The co-PIs on this project are from the Universities of Hawaii, Wisconsin, Colorado and Swarthmore College. We held a series of workshops around the country and at conferences, building a network of researchers interested in collaborative research efforts. This resulted in several collaborative grant proposals to NSF.

2006/07

Six PhD students prepared dissertation proposals using VMT data. One had her dissertation approved (Litz at Nova University) and two had their proposals accepted (Sarmiento at IST, Mühlfordt in Germany). Three others are currently refining their proposals with their committees (Cakir, Zhou, Toledo at IST); they will be accepted for candidacy in September 2007.

This was a difficult year for me because of two life-threatening coronary blockages. I returned from a workshop in Norway in the Fall to take care of the first of these. I was in the hospital for

the second during the early weeks of Winter Quarter, getting my INFO 310 course off to a bad start. I eliminated a planned heavy schedule of international travel and publication. I focused on managing the VMT project, guiding my PhD students, teaching a single course at a time, co-authoring papers and collaborating on joint funding proposals.

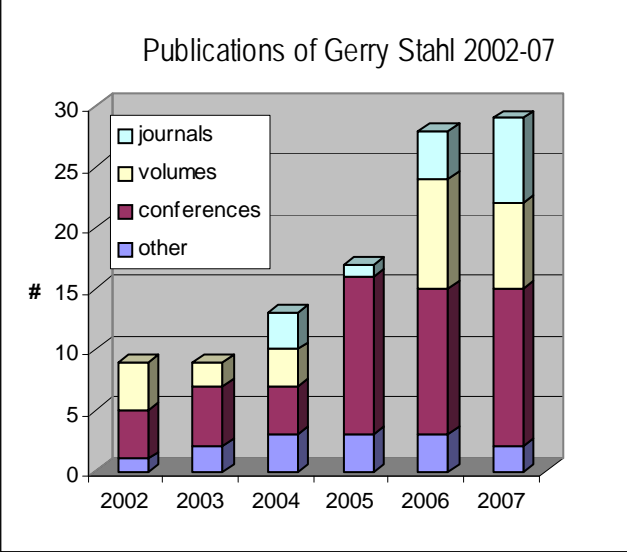
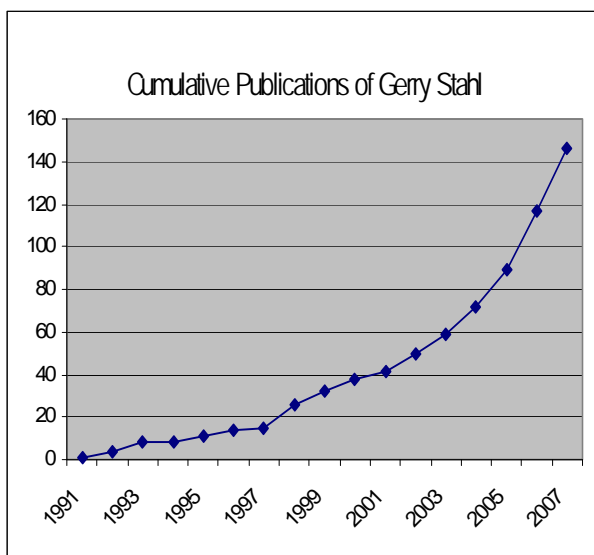
Interest in collaboration by researchers in other universities is now rapidly increasing. The VMT system is being used at Carnegie-Mellon, Rutgers Newark and NIE Singapore. Researchers at Carnegie-Mellon, Rutgers Newark, Rutgers New Brunswick, Hawaii, Colorado, Wisconsin and elsewhere are interested in seeking collaborative funding for VMT research. Earlier proposals in which I was listed as consultant had not been funded and we prepared several proposals with me as co-PI, which are now pending.

The VMT project engaged in significant software development, increasing the scalability and adding new features. A visiting professor from Norway joined us for the year on her sabbatical, and is helping with the Java programming. VMT team members, Math Forum staff and a German consultant all worked together on the system. We integrated a wiki component with the chat and multiple tabbed whiteboards, as well as a new Lobby with profiles and messaging.

The international CSCL conference was held in New Brunswick this July. I arranged for IST co-sponsorship of the conference and organized an all-day workshop on the VMT project. The workshop was one of the best attended and was well received. We gave ten presentations based on VMT data. I also chaired a lively symposium on methodology and a related paper session, as well as presenting two full papers on the technology and theory of the VMT project.

The Future

During five years at Drexel, I have developed an agenda for scholarship, teaching and service that I plan to continue to pursue. There is much to be published about how students interact in the VMT environment. The PhD dissertations I supervise at IST—which will be completed in the next year or two—will make important contributions to that and I am committed to helping to make them as good as possible. The VMT software will continue to evolve and the service will become a regular program at the Math Forum. During my tenure trial period at Drexel, I have published over a hundred publications in five years, at an ever-increasing rate (*see charts above*;



note that the figures for 2007 are mid-year). These are almost all peer-reviewed professional documents for an international academic audience, mostly sole- or first-authored by me.

I am currently preparing two books related to the VMT project. One is a monograph by me, developing the analyses, methodology and theory from *Group Cognition* based on subsequent findings of the VMT project (http://www.cis.drexel.edu/faculty/gerry/pub/explorations_proposal.pdf). This book has been accepted for publication in the CSCL book series at Springer. A second book is an edited volume of analyses and essays related to the VMT data from members of the VMT team and from other researchers using the VMT environment (http://vmt.mathforum.org/vmtwiki/index.php/Studying_Virtual_Math_Teams). I have already collected and critiqued drafts of most of those chapters.

I will continue to serve as Executive Editor of *ijCSCL*. And I will continue my involvement in the international conference series: CSCL, ICLS (learning sciences), Kaleidoscope (European) and ICCE (Asia-Pacific).

There are currently several proposals pending for collaborative projects with researchers at other institutions who want to use the VMT environment. These are likely to lead to new explorations of the use of this environment—whether these specific proposals are funded or not. There are also possibilities for collaborations with other faculty at IST and at other Drexel colleges.

The I-School has begun to manage the Internet Public Library (IPL). So far, there are no synchronous interactive or collaborative services associated with this digital library. When the IPL project is ready to explore options in these directions, I would like to be involved in that.

As a tenured faculty member, I will be ready to devote more time to institutional matters at IST and Drexel, such as helping to further develop a lively research culture at IST and becoming involved in Drexel faculty affairs. I believe that a research culture can benefit students at every level, and I have always welcomed undergraduates and masters students as well as PhD students to intern at the VMT project. I have also brought my research into my classrooms, not only sharing my own experience, but providing as much first-hand experience as possible for the students with actual research issues. I have served in IST faculty committees for curriculum, the doctoral program and strategic futures, and could continue to do so in the future. I also plan to take a more active leadership role in faculty clusters for HCI, social informatics and teaching.

I have tried to assist other faculty in the complexities of grant proposals in an informal way, mainly responding to their inquiries, but also brainstorming some proposal concepts. I would like to provide more mentoring along these lines in the future. I also think it is important to train PhD students in the skills of grantsmanship. This is just one example of the kind of skills that future researchers need to acquire. While IST's PhD program already includes training in reading the research literature, in designing experiments and in conducting statistical analyses of results, there is little guidance in selecting a research topic, defining research questions, analyzing qualitative results and writing a dissertation—unless a student is lucky enough to find an interested faculty mentor. I am not sure how much support for these issues can be institutionalized and how much they should be supported by peer networks, but I would be interested in exploring how to assist PhD students through the research and writing stages of their program at IST.

Given my professional involvement in online learning, it seems natural for me to help in the development of IST's growing online programs. One idea I had while teaching my recent online

software design course would be to organize an online course for faculty and PhD students in designing online courses. The course would include research papers on online education and theory which small groups of participants would discuss online. The groups would also develop, week-by-week during the course, a curriculum for an online IST course. Each group's proposed curriculum would be subject to evaluation by other groups.

In summary, I think I have established an effective approach to scholarship, teaching and service that I plan to continue and to enrich in the future.

CV Appendix

Portfolio Document #3. Curriculum Vitae

The CV—which follows this Dossier—details my professional career to date. It includes links to my publications and grant proposals. It is also available electronically with live links at: http://www.cis.drexel.edu/faculty/gerry/tenure/3_cv.pdf The CV details my education and professional experience; external funding and grant proposals; software development projects; publications (bibliographic information, by category, with links to full text); service positions in the international research community; faculty committee roles at IST; honors received; scientific advisory positions at international research labs; visiting researchers I have hosted at Drexel; PhD students I have supervised or advised; and courses I have taught.

Scholarship Appendices

Portfolio Document #4. Excerpts from my Book “Group cognition”

My 500-page monograph—published last year by MIT Press—provides extensive background on the problem of computer support for collaboration; describes a variety of software systems that I have designed, developed and tested; and discusses methodological considerations and theoretical reflections in considerable depth. The book includes studies of digital libraries, case-based reasoning, artificial intelligence, knowledge-based systems, interactive web environments, empirical analyses of students, theoretical analyses of computer-mediated interaction, design studies and philosophical reflections. It is widely considered an important statement of research in computer-supported collaborative learning (CSCL). It is used in graduate training in Australia, Norway, China, Finland, Japan, Germany, the US and elsewhere.

The book includes 21 essays covering my most important research up until the beginning of the VMT project. The introductory essay explains the approach and structure of the book. It gives a taste of the mixture of system design, empirical analysis and philosophical reflection. The concluding chapter wraps up some central themes of my work from 1993 to 2004. It provides perhaps the best presentation so far of my concept of group cognition. These chapters—along with the table of contents—are included here; a copy of the book is also available for review. (Stahl, 2006b)

Reviews of “Group cognition”

Review by Sten Ludvigsen, Professor of Education & Director of InterMedia, University of Oslo

"In this bold and brilliant book, Stahl integrates three distinct fields of knowledge: computational design, communication studies, and the learning sciences. Such an interdisciplinary effort is both timely and necessary to foster innovations for human learning. This book shows how small-group cognition can be the underlying building block for individual and collective knowledge building."

Review by Claire O'Malley, Professor of Learning Science, University of Nottingham

"This book, which synthesizes research by a leading thinker in computer-supported collaborative learning, offers a thought-provoking and challenging thesis on the relationship between collaboration, technology mediation, and learning. Its scope is broad, encompassing philosophy, AI, and social science, and it is bound to stimulate the kind of productive debate that Stahl argues is core to knowledge building."

Review by Roy Pea, Professor of Education & the Learning Science and Director of the Stanford Center for Innovations in Learning, Stanford University

"Gerry Stahl's new work targets a vitally important issue facing a 21st-century knowledge-based economy: How can *group cognition* be fostered as a new unit of analysis for research and design of computer systems crafted for building collaborative knowledge? There are many golden nuggets in this volume that will help advance the collective intelligence available on the planet for finding and tackling hard problems, from educational systems to informal workplace learning."

Review by Barbara Wasson, Professor of Computer Science, Department of Information Science & Media Studies, University of Bergen

"This groundbreaking book reflects on the decade of research that led Stahl to the timely notion of group cognition. Those interested in collaboration will find here a plethora of insights into the relationship between design, communication, and learning."

Review by Stefan Trausan-Matu, Professor of Computer Science, University of Belgrade

"This book is, I may say, one of the kind of books I always wanted to have, to read and revisit for getting its golden nuggets. It is unique because it provides, from several different perspectives (technical as well as philosophical), deep insights in what is going on in computer-based collaborative applications, with emphasis on Computer-Supported Collaborative Learning. The need of collaborative applications is justified and analyzed starting both from practice and theoretically. The text very well presents and analyses the valuable experience of the author in designing and implementing a wide range of applications in e-learning, groupware, artificial intelligence (expert systems and knowledge-based) and text processing (Latent Semantic Indexing). This experience description may be better understood if we see the text almost as a saga ending with one of the main ideas of the book: knowledge building appears in verbal-mediated collaboration in small groups. The practical experiences are doubled by deep interdisciplinary theoretical considerations, including philosophy (integrating ideas from Heidegger, Vygotsky, Derrida, Bourdieu, Bakhtin, Adorno, etc.), learning sciences and sociology (e.g. Garfinkel's ethnomethodology, and Schegloff's and Sacks' conversation analysis). State of

the art theories like activity theory, distributed cognition, situated learning, knowledge building, and group cognition are also integrated in the whole.”

Review in ACM Networker, March-May 2007

“Lately, Amazon CEO Jeff Bezos has been trumpeting something he calls the ‘two-pizza rule’: that is, no project team should be so big that it can eat more than two pizzas. The idea is to reduce the time spent on hierarchy and process. But author Gerry Stahl would argue that the real value of the small team is that it can lead to “collaborative knowing” through conversation and debate. Stahl makes an empirical and convincing case for the educational value of being part of a community of learners, and for how computer-supported collaborative learning tools can help create that community environment. Stahl makes a fascinating and tremendously relevant argument for the importance of understanding and supporting the small-group settings where, as his research shows and anyone who’s ever judged a school by its average class size can understand, most real learning takes place.

“The book brings together essays Stahl has written over more than a decade, and as such, forms a sort of conversation with itself. The reader can trace the turn from academia’s 1990s belief in AI solutions for computer-supported collaborative learning problems to the 21st-century interest in community and social processes. Most interestingly, he shows that the so-called ‘wisdom of crowds’ may actually be trumped by the wisdom of small groups. Through discussion and collaboration, groups literally become greater than the sum of their parts. This insight leads Stahl away from trying to build intelligence into educational technology, and towards trying to design systems that make it easier for students to collaborate intelligently. But even readers who are long past math class (if they are comfortable with the book’s academic prose) will find important lessons here about the value of collaboration and community.”

Portfolio Document #5. Journal Paper: “Supporting group cognition in an online math community: A cognitive tool for small-group referencing in text chat”

This and the following two journal articles reflect my current analytic methodology, my philosophic concerns and practical design implications. This article was published as the lead in a special issue on cognitive tools. It analyses collaborative deictic pointing in the VMT virtual environment as a basis for joint problem solving in online small groups of students. It illustrates my approach to detailed micro-analysis of interaction in the online context and how I draw implications from a case study. It provides a prime example of my research. (Stahl, 2006c)

Portfolio Document #6. Journal Paper: “Sustaining group cognition in a math chat environment”

The second article presents a case study of the use of “math proposal adjacency pairs” to sustain collaborative problem solving. It brings in methods from the rigorous qualitative approach of conversation analysis, adapting them to the online situation. It is based on my paper at ICCE 2006 in Singapore, which won the “Best Paper” award. (Stahl, 2006d)

Portfolio Document #7. Journal Paper: “Analyzing and designing the group cognitive experience”

The third journal article addresses the relationship between the individual and the group, by analyzing the group problem solving. It shows how the group interaction led to the solution of a challenging standardized math problem that none of the individuals in the group solved on their own. It is based on my keynote address at the CRIWG conference in Brazil. (Stahl, 2006a)

Research Proposal Table

YEAR	AGENCY	PI	Co-PIs	YR	AMOUNT	STATUS	TITLE
2007	NSF-ALT	Rosé	Stahl Weimar	3	\$606,669	pending	Increasing Helping Behavior in Collaborative Problem Solving in the Virtual Math Teams Environment
2007	NSF-REESE	Stahl (with Suthers Hmelo)	Weimar Zemel	3	\$249,062	pending	Collaborative Research: Representations for Analyzing Collaborative Knowledge Construction in Technology-mediated Learning Environments
2007	NSF-REESE	Powell	Stahl Maher	3	\$995,145	pending	eMath: Diverse High School Students Developing Mathematical Reasoning through Online Collaboration
2007	NSF-SGER	Rosé	Stahl	1	\$50,000	pending	Exploring Adaptive Support for Virtual Math Teams
2006	NSF-ALT	Rosé	Weimar Stahl	2	\$500,000	rejected	Optimizing Feedback for Eliciting Pedagogically Valuable Explanation in Collaborative Problem Solving
2005	NSF-SLC	Stahl	Derry, Marlino, Renninger, Suthers	3	\$180,762	funded	Engaged Learning in Online Communities
2005	NSF-ISE	Klotz	Stahl Weimar	5	\$2,933,126	rejected	Interaction Math: An Informal Online Learning Collaboratory Led by the Math Forum @ Drexel
2003	NSF-ROLE	Stahl	Robertson Shumar	3	\$1,790,931	rejected	Studying Online Collaborative Learning at the Math Forum
2003	NSF-NSDL	Stahl	Weimar Shumar	3	\$450,000	funded	Collaboration Services for the Math Forum Digital Library
2003	NSF-NSDL	Robertson	Stahl Weidenbeck	2	\$498,748	rejected	Group Knowledge Construction in Digital Library Communities
2003	NSF-IERI	Stahl	Weimar Shumar	6	\$2,300,00	funded	Catalyzing & Nurturing Online Workgroups to Power Virtual Learning Communities
2002	foundations	Atwood	Nursing School	1	\$88,000	Not funded	Educational Online Communities for At-Risk Youth

Excerpts from National Science Foundation (NSF) Reports

The NSF “REPORT OF THE ADVISORY COMMITTEE FOR GPRA PERFORMANCE ASSESSMENT” highlighted the VMT project (on pp. 24-25) as one of the very few successes in the following category:

“PEOPLE GOAL -- Indicator P5 : Support innovative research on learning, teaching and mentoring that provides a scientific basis for improving science, technology, engineering and mathematics education on all levels.

“As the following five projects show, activity in this indicator area is found within current NSF sponsored programs. However, these projects were the only ones found within the set of nuggets proposed to satisfy this indicator (56 in the Primary set, 88 in the Secondary). The following programs, significant in their own right in terms of quality, relevance, and multi disciplinarity, are involved in the study of individual learning, group/collaborative learning, the assessment of learning, the dissemination of the results of learning research, and the mentoring of STEM faculty.

“Work is also being carried out to better understand how STEM students learn in groups. Gerry Stahl of Drexel University (0325447) is studying how math students utilize the Internet to work together to solve problems. By collecting and analyzing records of student problem-solving chat groups, Stahl hopes to develop a theory for how students best learn in such situations and to disseminate this information to mathematics teachers world wide....”

The DRDC (the Data Research and Development Center, the evaluation consultant for the NSF) featured the VMT project (on p. 6) in its report, “Just the Facts: Results from IERI Scale-Up Research.” IERI is supporting 35 projects that focus on math learning outcomes. The VMT project was the first of four of these projects described under “Improving Student Achievement in Mathematics: Lessons Learned”:

“An IERI research team has built a technological infrastructure to support “virtual math teams” composed of small groups of students who meet online to discuss math topics in depth. The project included students from U.S., Europe, and Asia who usually meet in groups of 3 to 4 to discuss and problem solve for about an hour. Researchers analyzed the “chats” that take place among students using a method they developed from established methods of conversation analysis. The project has demonstrated the feasibility of hosting online forums for youth to discuss mathematics. A variety of mathematical topics and approaches to presenting the content also has been tested and led to the refinement of the online environment.”

Teaching Appendices

Portfolio Document #8. Teaching Portfolio

This documents my teaching responsibilities to date, pedagogical philosophy, and course designs. My most recent course, a graduate online offering, serves as a fully documented example. Appendices to the Teaching Portfolio list details of teaching and mentoring.

Portfolio Document #9. An Introduction to CSCL

I wrote this chapter for the *Cambridge Handbook of the Learning Sciences* (a compendium of clear explanations of major ideas in contemporary learning sciences, mostly authored by the people who introduced or developed the idea) to introduce the field of CSCL to new researchers and interested graduate students. I integrated ideas from two close colleagues, Tim Koschmann and Dan Suthers. Together, we have developed an approach to CSCL that focuses on the joint meaning-making processes that are foundational to collaborative learning. This chapter grounds that approach in our perspective on the history of the research field. (Stahl, Koschmann, & Suthers, 2006)

Teaching Evaluation Statistics

Following are the ratings I received in each of the courses I taught for questions #7 and #8 on IST's former student evaluation forms.

Course	Year	Term	# Students	# Responding	% Responding	#7 Avg.	#8 Avg.	Notes
608-901	2002	1	17	5	29.4	5.4	5.4	online
608-110	2002	2	26	24	92.3	6.1	6.5	
310-002	2002	3	29	22	75.9	7.6	7.6	
608-900	2002	3	26	19	73.1	6.4	6.2	online
310-001	2003	2	20	16	80.0	8.9	8.7	
610-502	2003	2	17	17	100.0	7.7	7.7	
780-514	2003	3	11	10	90.9	9.0	8.7	
310-001	2004	2	23	23	100.0	7.6	7.5	
608-501	2004	2	23	19	82.6	6.4	6.8	
780-501	2004	3	7	6	85.7	9.5	9.5	
110-501	2005	2	23	15	65.2	7.1	6.8	
310-001	2005	3	21	18	85.7	7.3	7.4	
310-501	2006	2	24	16	66.7	4.3	4.6	hospitalized
608-901	2006	3	13	7	53.8	8.0	6.9	online

Note that these statistics are based on a survey form that has long been criticized and has now been abandoned by IST. In particular, such an evaluation disadvantages pedagogically innovative course approaches because it encourages students to compare them to expectations based on traditional lecture courses, which according to student reflection papers still dominate the IST culture. Students taking the INFO 780 CSCL course understood the collaborative learning approach and rated the courses significantly higher.

I have annotated the *online* courses, where one can see a marked improvement in ratings over time as the course and my skills evolved. I also annotated the term 2/2006 course, during which I was seriously ill and was not able to overcome the resistance to change of many of the students, who were mostly about to graduate.

Service Appendices

Portfolio Document #10. International Journal of Computer-Supported Collaborative Learning (ijCSCL)

The introductions to volumes one and two of the *International Journal of Computer-Supported Collaborative Learning* reflect my perspective on the role of this journal in facilitating the knowledge-building process of the research community. The attached document includes the table of contents of published issues along with these two introductions. The complete journal issues to date are available for review as well. (Stahl & Hesse, 2006, 2007)

Websites, Wikis and Blogs Created

I have tried to take advantage of the latest technologies to promote communication in the research community. My own website (<http://www.cis.drexel.edu/faculty/gerry/>) was one of the first extensive personal websites and has long received a lot of traffic. It includes a CSCL page (<http://www.cis.drexel.edu/faculty/gerry/cscl/>) with many resources and is the only site containing a large collection of videos from CSCL conferences—many of which I had produced.

My website also contains all my publications (in pdf and html). During the 30 months from January 2005 through June 2007 while Web-Trends was tracking the IST server, there were 32,540 downloads of over 200 different pdf files to 130 countries. About a third of these downloads were chapters from my book, *Group Cognition*, including 656 copies of the entire pre-publication draft. These chapters are used in courses around the world; I make them freely and easily available as a service to the community.

I personally created the original websites for ISLS (<http://isls.org/>) and ijCSCL (<http://ijcscl.org/>). I started a CSCL-Community blog (<http://cscl-community.blogspot.com/>). I set up wikis for my recent course, for the recent VMT Spring Fest and for my workshop at CSCL 2007 (<http://vmt.mathforum.org/vmtwiki/>).

Role in the International CSCL Community

Particularly since 2001/02 when I worked on the European Union project, I have been interested in promoting global collaboration within the CSCL community. Helping to found ISLS, I have consistently pushed to emphasize its international aspects. As Executive Editor of *ijCSCL*, I have emphasized its international character, hiring a language editor to help non-native English speakers and to encourage submissions from around the world. I have attended conferences on multiple continents and have maintained networks of contacts. I am one of only three people who participated in every CSCL conference as an author (the other two are my close collaborators, Tim Koschmann and Dan Suthers).

I attended the ICCE 2005 conference in Singapore, where I received the best paper award. I stayed after the conference to serve on the Scientific Advisory Conference of the new Learning Sciences Institute in Singapore, which is carrying out an important national mission. My contacts there led to on-going experiments with VMT at schools in Singapore. The next year, I organized

two workshops at ICCE 2006 in Beijing: on CSCL and on involving Asians more in the CSCL community. I plan to participate in ICCE 2007 in Japan.

The center of most CSCL activity is in Europe, particularly in the large Kaleidoscope network. The CSCL SIG of Kaleidoscope has 350 researchers in 100 labs. I was the only non-European to present at their first conference in Switzerland. I was invited to be a guest and plenary speaker at their recent workshop series in recognition of my “permanent support of the European folks” (personal communication from Pierre Dillenbourg, conference organizer). I was the only non-European to participate in their leadership meeting on sustainability in Norway. I was subsequently instrumental in starting a European chapter within ISLS and recruiting many Kaleidoscope members into ISLS and as subscribers to *ijCSCL*.

I am on the Scientific Advisory Committees of two of the major research networks in Europe: the Knowledge Media Research Center (KMRC) in Tübingen and the Knowledge-Practices Lab (K-P Lab) in Scandinavia.

Recently, a number of researchers at other universities—both within the US and abroad—have become involved in the VMT project and begun to write joint funding proposals and conference papers.

Drexel/I-School Co-Sponsorship of CSCL 07 International Conference

This year’s International Conference of Computer-Supported Collaborative Learning (CSCL 2007) was prominently co-sponsored by IST. For the first time in its 12-year history, this conference series was held on the East Coast—at near-by Rutgers New Brunswick—after recent sites in Norway and Taiwan. (At the previous CSCL conference in Taiwan, IST was represented by 7 researchers from the VMT team.) Because an important CSCL research team is at Drexel, IST co-sponsored the event with Rutgers. The IST logo was featured on all nametags, the conference website, the program, a banner, the proceedings and plenary slides. The IST *Bridge* featuring IPL was distributed. IST sponsored the social highlight of the conference, an international buffet with live music and dancing.

The conference opened on July 16 with a workshop series I organized, including an all-day



Nan Zhou and Henry Rodriguez sport VMT tee-shirts at the CSCL conference.

workshop I led on chat analysis in the Virtual Math Teams (VMT) project at Drexel. Workshop presentations were given by IST PhD students Nan Zhou, Ramon Toledo, Murat Cakir and Johann Sarmiento, as well as by VMT collaborators at the Math Forum, Arts & Sciences, TCNJ, Rutgers Newark, Carnegie-Mellon, Hawaii and Romania. The next two days, Murat and Johann also presented their dissertation work on VMT data in the doctoral consortium.

The CSCL conference was attended by researchers and graduate students from 26 countries. Throughout the conference, the VMT team—with 10 people from Drexel and 10 collaborators—were visible as an active center of CSCL research, often wearing new VMT/IST/Drexel tee-shirts. VMT researchers from IST and A&S also presented conference papers on VMT data. I presented a theoretical analysis of online meaning making and a paper on the design of the VMT software environment. The conference closed on July 21 with a methodology symposium I chaired, sponsored by the IST-produced *International Journal of CSCL* that I edit, debating three “productive tensions” between my group cognition theory and traditional cognitive psychology.

Professional Conferences and Meetings Attended Representing Drexel & IST

2002 Sept 1-3, CRIWG international conference, Chile
2002 Oct 21-25, ICLS international conference, Seattle
2002 Nov 16-20, CSCW international conference, New Orleans
2003 Jan 5-10, HICCS international conference, Hawaii
2003 Feb 28-1, Ethnography in Education international conference, Philadelphia
2003 June 11-20, CSCL international conference, Norway
2003 Sept 14-16, DeLFI international conference, Germany
2003 Sept 18-22, Community & Technology international conference, Netherlands
2003 Oct 12-15, NSDL NSF PI meeting, DC
2003 Nov 9-12, GROUP international conference, Sanibel Island
2004 April 12-16, AERA international conference, San Diego
2004 April 20-21, NCTM international conference, Philadelphia
2004 June 8-12, VMT international invited workshop, Philadelphia
2004 June 23-27, ICLS international conference, LA
2004 Sept 9-10, IERI NSF PI meeting, DC
2004 Oct 7-9, Kaleidoscope international conference, Lausanne
2005 May 30-June 3, CSCL international conference, Taiwan
2005 August 23-27, EARLI international conference, Cyprus
2005 Sept 23-30, CRIWG international conference, Brazil
2005 Nov 5-6, ELOC project meeting, Madison
2005 Nov 28-Dec 2, ICCE international conference, Singapore

2005 Dec 5-7, NIE LSL scientific advisory meeting, Singapore
2005 Dec 9-11, KMRC international invited workshop, Tübingen
2005 Dec 11-13, Frode Guribye PhD defense, Bergen
2005 Dec 14-16, NAIL international invited workshop, Sweden
2006 Feb 26-28, ELOC project meeting, Hawaii
2006 Apr 7-11, AERA international conference, San Francisco
2006 Apr 7-11, ELOC project meeting, San Francisco
2006 May 1-3, K-P Labs, Oslo
2006 May 4-6, Kaleidoscope, Bergen
2006 June 26-30, ICLS international conference, Bloomington
2006 June 26-30, ELOC project meeting, Bloomington
2006 Aug 1-3, ELOC project meeting, Boulder
2006 Aug 23-26, ICS international invited workshop, Boulder
2006 Sept 24-26, CMC book international invited workshop, Oslo
2006 Sept 27-28, KP-Lab scientific advisory meeting, Oslo
2006 Oct 21-23, Group Cognition international invited workshop, Freiburg
2006 Oct 24-28, Group Cognition international invited workshop, Tübingen
2006 Dec 7-8, IERI NSF PI meeting, DC
2007 June, Creativity & Cognition international conference, DC
2007 July 16-21, CSCL international conference, New Brunswick
2007 July 16, ELOC project meeting, New Brunswick

Role in the Drexel research community

I have tried to help build a research culture, community and infrastructure at IST, primarily in connection with the rapidly growing PhD program, which now supports full-time students. I have worked on the faculty committees for the doctoral program, for research talks, for curriculum and for strategic planning with this goal in mind. I have brought in many experienced researchers to present talks, and I have encouraged IST PhD students to attend these. The success of my VMT project has attracted visiting professors on sabbatical, visiting researchers, faculty candidates and potential students. My grants have supported four IST PhD students, including allowing them to attend many international conferences. The indirect funds from these grants has supported the PhD program generally in various ways. I have sought to involve numerous other faculty members from IST, Arts & Sciences and the School of Education in the work of the VMT project, including being on the committees of dissertations on VMT data and doing their own or collaborative data analysis from the rich VMT corpus.

Supplementary Appendices

Portfolio Document #11. Description of the Virtual Math Teams Project

This overview of the VMT project was written for teachers and researchers interested in using the VMT environment with math students. It provides a clear introduction to the design and use of the VMT environment. It describes the VMT project from a user perspective. It is included as background information. (Stahl & Zhou, 2006)

Portfolio Document #12. Overview of My Current Research

My current research focuses on the VMT data, using a methodology of chat analysis and tools we developed in the project. A new book chapter summarizes the three case studies in the journal articles in my Scholarship Appendix, and puts them in the broader context of my research agenda and approach. It is included as background information. (Stahl, 2007)

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