

I. CURRICULUM VITAE

CAROLYN PENSTEIN ROSE

EDUCATION

- Ph.D., Language and Information Technologies, Carnegie Mellon University, December 1997. Thesis advisor: Lori S. Levin
- M.S., Computational Linguistics, Carnegie Mellon University, May, 1994.
- B.S., Information and Computer Science (Magna Cum Laude), University of California at Irvine, June 1992.

EMPLOYMENT

- [2014-present] *Associate Professor (With Tenure)*, Language Technologies Institute and Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University
 - Affiliate faculty in the Institute for Software Research's PhD program in Societal Computing (formerly Computation, Organizations, and Society)
- [2011-2014] *Associate Professor (Without Tenure)*, Language Technologies Institute and Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University
- [2008-2011] *Assistant Professor (Tenure Track)*, Language Technologies Institute and Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University
- [2003-2008] *Research Computer Scientist*, Language Technologies Institute and Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University
- [1997- 2003] *Research Associate, Learning Research and Development Center, University of Pittsburgh.*
- Project coordinator in Natural Language Tutoring Group
- [1994-1997] *Teaching Assistant, Computational Linguistics Program, Carnegie Mellon University.*
- [Summer 1993] *Summer Research Internship, Apple Computer, San José, CA.*

- [1992-1994] *Research Assistant, Center for Machine Translation, Carnegie Mellon University.*
- [Summer 1991] *Research Internship, Minority Summer Research Internship Program, UC Irvine.*
- [1990-1992] *Honors Research, University of California at Irvine.*

PERSONAL

- US Citizen
- Homepage: <http://www.cs.cmu.edu/~cprose>

II. STATEMENT OF CAREER GOALS

RESEARCH STATEMENT

Vision

My research program is focused on better understanding the social and pragmatic nature of conversation, and using this understanding to build computational systems that can improve the efficacy of conversation between people, and between people and computers. In order to pursue my research goals, I integrate and extend approaches from computational discourse analysis and text mining, conversational agents, and computer-supported collaborative learning. I ground my research in the fields of language technologies and human-computer interaction. I am fortunate to work closely with students and post-docs from the Language Technologies Institute and the Human-Computer Interaction Institute, as well as to direct a lab of my own, called TELEDIA. My group's highly interdisciplinary work, published in over 190 peer reviewed publications, is represented in the top venues in 5 fields: namely, Language Technologies, Learning Sciences, Cognitive Science, Educational Technology, and Human-Computer Interaction, with awards or award nominations in 3 of these fields.

The specific goal of my research is to develop technology capable of supporting effective participation in conversation to achieve a positive impact on human learning, growth, and wellbeing. My conviction is that in order for the technology to achieve maximum impact, it must first be capable of making meaning from, generating, and engaging in conversation. Second, its behavior should be designed with a deep understanding of the mechanics of what makes conversation work in different settings as well as an understanding of what properties of conversation add to or detract from its positive impact on important outcomes of conversation. Finally, its design should be based on knowledge of what external stimuli manipulate these properties of conversation and in what ways. An example of the nature and impact of my research can be seen in the context of a collaborative effort to improve science instruction in an urban school district's 9th grade Biology courses in collaboration with Lauren Resnick and the Institute for Learning (IFL), funded through the Pittsburgh Science of Learning Center. In the hands of a skillful teacher or privileged student population, classroom facilitation techniques such as IFL's well established Accountable Talk classroom facilitation practices have been demonstrated to contribute towards steep increases in standardized test scores, with retention of up to three years, and transfer across domains. At the time of beginning our collaboration, these effects had so far eluded urban school districts with typical teachers. In my work, I have developed computer-supported collaborative learning interventions, powered by conversational agents and computational discourse analysis technology, that when infused in this district-wide Accountable Talk professional development program led to improved learning gains (with effect sizes between .35 and 1 standard deviation¹) and increased uptake of Accountable Talk practices in the broader classroom community in which it was housed (with effect sizes of up to 1.7 standard deviations). This success provides a proof-of-concept that this work

¹ An effect size of 1 standard deviation is equivalent to one full letter grade.

may lend effectiveness and scalability to similar professional development efforts in challenging contexts like these in the future.

My research has birthed and substantially contributed to the growth of two thriving inter-related areas of research in the Learning Sciences: namely, Automated Analysis of Collaborative Learning Processes and Dynamic Support for Collaborative Learning, where intelligent conversational agents are used to support collaborative learning in a context sensitive way. Early work from my group a decade ago paved the way for these areas to now be the topic of handbook chapters, workshops, and a special issue of the *International Journal of Artificial Intelligence in Education* (with my former PhD student Rohit Kumar as guest co-editor). This history is recounted in my invited article in the 25th Anniversary edition of the *International Journal of Artificial Intelligence in Education*, which describes how work in tutorial dialogue systems created the field of dynamic support for collaborative learning and then paved the way for emerging technologies enabling collaborative and discussion based learning in Massive Open Online Courses (MOOCs). By now these technologies have already been deployed in a series of MOOCs, as discussed later in this statement. *The frequency of high citation papers in these areas that cite my work (including both review articles and basic research contributions), as well as the high ranking of some papers from my group among the most highly cited papers in these areas, position my team's work at the leading edge.* For example, since 2005 a growing number of publications related to script based collaboration mention using machine learning, and of those, more than half cite my group's work. My 2008 article in the *International Journal of Computer-Supported Collaborative Learning* on automated collaborative process analysis remains one of the five top cited articles in that journal since its inception. One of the two text mining tool kits made publically available from my lab to enable other researchers to take advantage of this technology has gotten over 11,500 downloads. Invitations for more than monthly talks at seminars and colloquia, workshops, symposia, panels, and tutorials, frequent awards or award nominations, an active international network of research collaborations including an increasing number of invitations to serve on advisory boards, as well as a substantial amount of press coverage testify that my group's work is highly sought after and appreciated both within the research world and externally.

My work is known for the way it bridges theories of interaction and computational modeling technology. This approach to research in Language Technologies frames my recent co-authored *Computational Linguistics Journal* article (in collaboration with two former members of my lab), which defines a vision for the field of computational sociolinguistics. *The key idea behind my work is to draw insights from rich theoretical models of interaction from sociolinguistics and discourse analysis, and operationalize them in ways that capture the most important essence for achieving impact.* My approach is always to start with investigating how conversation works and formalizing this understanding in models that are precise enough to be reproducible and that demonstrate explanatory power in connection with outcomes that have real world value. The next step is to adapt, extend, and apply machine learning and text mining technologies in ways that leverage that deep understanding in order to build computational models that are capable of automatically applying these constructs to naturally occurring language interactions. Finally, with the technology to automatically monitor naturalistic language communication in place, the next stage is to build interventions that lead to real world benefits.

My research program integrates three intellectual strands in each project:

- (1) *Basic research in discourse analysis* in order to identify conversational constructs that predict important group outcomes such as learning, knowledge transfer, relationship formation, impression management, motivation and decision making.
- (2) *Basic research on text classification* technology for automated analysis of conversational constructs identified under aspect #1 as well as tools to enable other researchers to do the same in their own work.
- (3) *Basic research on conversational agent technology and summarization* that eases development of interventions triggered by automatic analyses from aspect #2. These interventions enable human facilitators to offer support, directly provide feedback to groups, or provide affordances that influence group participation in positive ways.

In an effort to arrive at generalizable models, I am pursuing this research program in multiple parallel contexts that provide opportunities to investigate how both the manifestation of the conversational constructs as well as their effects on outcomes are nuanced through mediating contextual variables. Thus, I am conducting research on projects funded through an array of sources such as NSF, NRL, Google, the Gates Foundation, and Bosch.

Since my tenure review in 2013, I have served as PI on 3 newly funded grants totaling 2.5M and Co-PI on 6 others totaling 8M. *This includes most recently a 4M NSF DIBBS grant on which I am Co-PI and a 2M NSF BigData grant on which I am PI.* Most of these projects fall within my primary impact area of education and learning more broadly, including informal learning and knowledge diffusion in online communities such as Wikipedia, GitHub, and Climate Colab. In the subsequent sections below I highlight the impact my work has had resulting from the three strands of basic research including discourse analysis, text classification, and conversational agent technology.

In my service as President of the International Society of the Learning Sciences, Executive Board member of the International Artificial Intelligence in Education Society, Steering Committee member of ACM's Learning@Scale, Associate Editor of the International Journal of Computer-Supported Collaborative Learning and the IEEE Transactions on Learning Technologies, I have taken the opportunity to build bridges between research communities that foster and support the multi-disciplinary collaborations that have provided a conducive environment for birthing advances in my own research and those of many others. In this capacity I have had the opportunity to host and/or participate in organizing inter-community visioning sessions at conferences such as Computer-Supported Collaborative Learning, Artificial Intelligence in Education, and Learning Analytics and Knowledge. I convene a group of over a dozen leaders from international research societies in the Learning Sciences to work towards a vision for coordination and bridge building, including co-location of conferences. As part of that effort I recently ran a leadership retreat in Edinburgh in April 2016 to forge a specific, concrete vision for an international umbrella organization to facilitate bridge building and coordination between these related research societies through cross-society awards and cross-community paper presentations. The formal plan for this endeavor will be presented to the governing boards of each of the component societies in the near term.

In active partnership with edX, with me as Director of DANCE: Discussion Affordances for Natural Collaborative Exchange², I have worked to build community around dissemination of research and resources enabling large scale deployment of discussion based learning practices at scale, including in Massive Open Online Courses (MOOCs). Over 5,600 individuals have participated in the growing DANCE community in some way since the launch of the community website in Spring 2015, and hundreds of return visitors participate in events (such as the monthly online talk series) or access software or publication resources on the community website each month. The DANCE community provides a “go to” place for resources developed by my own lab and other collaborating organizations. My own lab’s research in the area of computer-supported collaborative learning in MOOCs includes analyses of data from dozens of MOOCs as well as completed deployment studies in six different MOOCs. An example is a recent collaborative effort with the Smithsonian Institute where one of my PhD students has developed a team-based learning component within one of their courses as a test of interventions fine-tuned and rigorously validated first in Amazon’s Mechanical Turk. We are actively preparing for additional deployments including two more with the Smithsonian Institute and one in partnership with George Siemens at the University of Texas at Arlington and the Whitehouse’s ConnectedEd Initiative³. Our deployed conversational agent facilitated collaborative chat intervention has been demonstrated to significantly reduce attrition (sometimes reducing probability of dropout at the next time point after experience of collaborative interaction by more than a factor of two). Attrition is noted to be one of the major challenges of MOOC-based instruction.

Strand one: Basic Research on Discourse Analysis

One of the major cross-cutting thrusts of my work is identification of conversational constructs that predict important individual difference variables including motivational constructs and participation goals as well as individual and group outcome measures of success such as learning, knowledge transfer, trust, and stress reduction. *The theoretical contribution of my work in this area is the reinterpretation of largely qualitative frameworks from sociolinguistics and discourse analysis from a computational perspective, with a particular focus on frameworks characterizing interpersonal dynamics within the theory of Systemic Functional Linguistics (SFL).* This work comes together in a multidimensional framework referred to as SouFLÉ, published prior to my tenure review in the *International Handbook of Collaborative Learning* and featured in analyses of two out of five focal corpora in my co-authored edited volume on *Productive Multivocality in Analysis of Collaborative Learning Interactions*. Published analyses of the framework applied to corpora demonstrate the predictive value of the framework in connection with these external success measures. Recognition of this work has continued since my tenure review in the form of invitations to write handbook chapters in three different research and practice communities.

As a first example, the work was featured in an event hosted by Educational Testing Service (ETS) on innovative approaches to Assessment of Collaboration, and then later as a chapter in a handbook on *Innovative Assessment of Collaboration*, with select chapters from the ETS sponsored event. Building on this, the host from that event invited me to be a featured speaker representing this work at the recent Association for Test Publishers: Innovations in Testing conference in order to further disseminate my work to

² <http://dance.cs.cmu.edu>

³ <https://www.whitehouse.gov/issues/education/k-12/connected>

assessment practitioners. A write-up of this presentation was invited to be featured in an in preparation ETS Research Report publication. These opportunities follow on inroads into the assessment community that began at the time of my tenure review when a collaborative problem solving assessment was under development by the Program for International Student Assessment (PISA)⁴. PISA is a worldwide study conducted by the Organization for Economic Co-operation and Development, with the purpose of informing development of educational policies worldwide. Its findings are used to investigate what causes difference in achievement across nations. As part of this assessment development effort, a workshop was organized for CSCL 2013 where Art Graesser, leader of the assessment development task force, presented the draft assessment plan, and a panel of experts, on which I was a speaker, offered feedback. *This invitation signified that at that time my group's work was beginning to contribute to change in thinking about international assessment practices.*

Subsequently, I was invited to author the chapter on Discourse Analytics for two different handbooks, including the third edition of the *International Handbook of the Learning Sciences* and the *International Handbook of Learning Analytics*, where work on automated analysis of collaborative processes are featured as important areas of work. The primary focus of my pre-tenure work on interaction analysis was within pairs and small groups. As my post-tenure work has worked towards supporting collaborative interactions within online learning communities, I became aware of the need to understand how local interactions within pairs or small groups may lead to emergent behavior at the community level and how this affects individuals' experiences and outcomes within a larger community context. Since my tenure review, the focus of my analytic work has targeted analysis of discussion in Massive Open Online Courses. 23 invited talks since my tenure review have focused on my work in a MOOC context, many of these integrating work across the three strands of my research. This includes both academic meetings and ones hosted by industrial MOOC platforms, such as edX and Coursera.

My discourse analysis work draws insights from rich theoretical models of interaction from sociolinguistics and discourse analysis, and operationalizes them in ways that capture the most important essence for achieving impact. This approach sets my work apart as distinctive among researchers in the Computational Linguistics community working on analysis of large scale social interaction. My recently accepted *Computational Linguistics* journal article that defines a vision for the emerging field of Computational Sociolinguistics describes the theories, methodologies, and modeling technologies that my work integrates, builds on and extends.

Strand 2: Text Mining and Automatic Conversation Analysis

The previous section focused on theoretical and methodological work related to discussion analysis. The core *technical* contribution of my research is in the area of automated analysis of conversational interactions (especially automation of the SouFLé framework introduced in the previous section) as well as analysis of the social aspects of text (i.e., perspective modeling, sentiment analysis, and opinion mining). I refer to work on these problems as social interpretation of language. Basic research contributions to the field of language technologies from my group's work on these problems have been published in the past 5 years in 10 full papers at the Language Technologies field's top

⁴ <https://nces.ed.gov/surveys/pisa/>

conferences, namely ACL, NAACL, EACL, EMNLP, and SIGDIAL. In the same time, applications of this work to the field of education have been published as 7 full papers in the top conferences in learning sciences, namely ICLS and CSCL as well as 7 full papers in the top conferences in educational technology, namely AIED, ITS, EDM, and LAK and finally 14 journal articles that span these three fields.

What sets my group's work apart is its key idea: Using insights from theories in sociolinguistics and discourse analysis to motivate the design of novel representations of language is what enables automated social interpretation of language. Designing computational models that reflect these insights makes the patterns learnable. *My early work in this area served as the first proof of concept that machine learning applied to raw communication data could replicate multi-dimensional approaches to analysis of collaborative processes that were recognized as influential within the CSCL community. Extensions of that work were published in my 2008 article in the International Journal of Computer-Supported Collaborative Learning (ijCSCL), which is one of the most highly cited publications in the field of CSCL, ranking as 5th most cited article in the journal since its inception in 2005.* Since my tenure review, the focus of my computational work has shifted from analysis at the turn level to analysis of role based behavior profiles and how these predict important outcomes in large scale social interaction, such as in MOOCs, Wikipedia, and GitHub. Several of the top cited articles in the area of automated analysis of discussion in MOOCs are from my group's work. For example, according to a Google Scholar collection of articles related to implications of social interaction in MOOCs⁵, the ten top cited articles focusing on analysis of discussion includes four from my group's work, and the top cited article within this subset is from my group.

In addition to basic research in machine learning applied to problems in conversation analysis, *my research group has produced two publically available tool kits that are in wide use, namely TagHelper tools (Rosé et al., 2008) and LightSIDE (Mayfield & Rosé, 2013), which cumulatively have been downloaded over 18,000 times from over 70 countries.* At the time of my tenure review, my former PhD students Elijah Mayfield and David Adamson had spun off a company building on LightSIDE technology referred to as LightSIDE Labs, which has recently been acquired by TurnItIn.com. The company continues to be active in the Computational Linguistics, Assessment, and Educational Technology communities. In addition to leveraging these tools in my own teaching and sharing them with other instructors locally, I taught this tool as one of four instructors of a Massive Open Online Course on Learning Analytics offered by edX in Fall of 2014 with over 40,000 students enrolled.

Strand three: Online Interventions Enabled by Conversational Agent Technology

The major thrust of my post-tenure research has been focused on supporting collaborative and discussion based learning in MOOCs. With the recent press given to online education and increasing enrollment in massively open online courses, the need for scaling up quality computer-mediated educational experiences has never been so urgent. Current offerings provide excellent materials including video lectures, exercises, and some forms of discussion opportunities. The biggest limitations are related to the human side of effective educational experiences. This includes personal contact with instructors and the cohort experience. In the past decade, special concern has centered on students'

⁵ <https://scholar.google.com/citations?user=jNe-2SQAAAAJ&hl=en>

inability to communicate effectively, negotiate ideas, or engage in other aspects of collaborative problem-solving activity. These concerns prompt my research on interventions that improve the instructional value of online collaborative learning experiences.

At least a decade of research, including my own, shows that students can benefit from their interactions in learning groups when automated support is provided, especially interactive and context sensitive support. Until recently, the state-of-the-art in computer-supported collaborative learning has consisted of static forms of support, such as structured interfaces, prompts, and assignment of students to scripted roles. Now technology for dynamic support of collaborative learning is publically available. *My group is widely recognized as playing a major role in enabling this paradigm shift, especially as a result of demonstrations that dynamic script based support for collaborative learning leads to improvements in learning over otherwise equivalent static forms of support, and leads to 1.24 standard deviations more learning than learning with the same materials alone and without the support of a conversational agent (Kumar et al., 2007). Its value has been recognized in award and award nominations for my group's work at conferences such as ACM SIGCHI, AI in Education, the International Conference of the Learning Sciences, and Computer-Supported Collaborative Learning.* In our work since tenure, we partnered with the Institute for Learning in launching a MOOC on Accountable Talk, with 60,000 enrolled students. Since then, we have deployed interventions to support collaborative learning in five different Massive Open Online Courses. In three completed deployments we have measured substantial reductions in attrition associated with participation in collaborative chat activities we have hosted in these contexts. In an ongoing MOOC deployment in collaboration with the Smithsonian Institute, we have deployed support to team project-based learning in the course.

At the time of my tenure review, the Bazaar architecture for support of collaborative learning activities had already been made publically available⁶. Now we have added to that large scale infrastructure for data storage of discourse data and a customizable discussion forum plugin for the edX platform with easy integration of social recommendation interventions. We are in active partnership with edX, engaging in regular collaborative discussions about extensions of the platform for better support of collaborative and discussion based learning in MOOCs at a broad scale. We participate as invited members of their roughly bi-weekly Communities of Practice design meetings focused on redesign of the edX discussion forums. We are actively preparing for one of my PhD student to work side-by-side with edX engineers either over the Fall semester of 2016 on platform extensions. We are part of two Gates funded networks, including the Digital Learning Research Network, in which we are partnering with the Smithsonian Institute and the California Community Colleges System, and the Next Generation Courseware network, in which we are partnering with Smart Sparrow.

Moving Forward

As I transition from Associate Professor to Full Professor, I look forward to new challenges locally in my involvement in leadership on campus, more broadly in my professional service, and especially in my research.

⁶ <http://dance.cs.cmu.edu/resources/>

Locally, I have a history of service on campus at the department, school, and university level. In the past couple of years I have gotten involved in two areas of service I plan to expand upon in this new stage of my career. First is involvement in CMU's Simon Initiative. Under this broad umbrella I have been actively involved in the Technology Enhanced Learning (TEL) writing initiative headed by Richard Scheines, Dean of CMU's Dietrich School. My contribution was first as coordinator of its technology thrust, and now as co-leader in some of its early seed projects. Specifically, I am partnering on two different projects in which I am seeking to apply my own research in Computer-Supported Collaborative Learning (in collaboration with David Kaufer in the Rhetoric department) and Computational Discourse Analysis (in collaboration with Chris Neuwirth in the English department) to improve instruction on communication on campus at CMU. These projects have been in the planning phase during Spring of 2016 but will begin in earnest during Summer of 2016 and beyond. The vision of the TEL writing initiative is to start with these seed projects and expand to broader impact on campus across all of CMU's schools. A second direction is involvement in the Language Technology Institute's Governance Committee. The goal of this committee is to reflect upon the management practices of the department at all levels and to seek to improve its smooth functioning and morale. I believe my service to the department would be more effective if it were more focused and less diffuse. Thus, as we continue to work together as a committee to identify opportunities for making positive contributions, my goal is to seek a consistent area to focus my service contribution going forward. Some recent discussions in that context have focused on initiatives that will increase awareness and communication between research areas within the department, and contributing towards this effort fits my orientation towards bridge building and interdisciplinarity.

In my external professional service, at the same time as my Presidential term within the International Society of the Learning Sciences is winding down, I am transitioning from Associate Editor of the *International Journal of Computer-Supported Collaborative Learning (ijCSCL)* to Executive Editor. In this new leadership role, I will partner with the new Editor-in-Chief and the other two Executive Editors to revitalize the focus and scope of the journal. To start off this effort, Ulrike Cress (one of the current Executive Editors) and I are co-organizing a workshop at the International Conference of the Learning Sciences (ICLS) to be held in Summer 2016 entitled "Towards next steps for the CSCL Community: Advancing science and informing real world collaboration in Web 2.0". Through a series of invited talks, feedback panels, and poster sessions in this full day workshop, we will work together to forge a fresh vision that will be offered to the community in a subsequent planned special issue. The goal is to strengthen and deepen the bridge between the CSCL community and the broader communities of research in Social Media Analysis and Computer Supported Cooperative Work. Ulrike Cress and I are also co-editing the in preparation *Handbook of Computer-Supported Collaborative Learning*, which will be published by Springer.

At the time of my tenure review, my research team was just transitioning into a push towards large scale dissemination and deployment, taking advantage of the rise of Massive Open Online Courses (MOOCs) as an opportunity to deploy our developed technology for dynamic support for collaborative learning at a grand scale. As highlighted above, this past few years have produced a whole series of deployments and positive demonstrations of impact and potential for even wider impact going forward in my continued collaborations with edX, the Smithsonian Institute, the Community Colleges of California system, etc. While continuing this work, new challenges have become apparent, many related to assumptions underlying current MOOC instructional

design. First, the framing of MOOCs as courses that operate autonomously, with collaborative opportunities embedded as optional supplementary activities, limits the opportunity for collaborative discussion to provide the social support known to bolster student commitment, positive decision making, and learning. Into the future, my aim is to broaden and deepen my collaboration with leaders in the area of online learning communities, such as George Siemens and Dragan Gaesevic, as we develop a vision for bridging across formal learning settings such as programming MOOCs, informal settings for information sharing, such as Stack Overflow, and online production communities such as GitHub. This research is already getting off the ground in the context of my recently funded Big Data grant with Jim Herbsleb as my local Co-PI, and George Siemens as lead on a collaborative proposal at UT Arlington.

In addition, I have recently led a local team including Ken Koedinger, Geoff Gordon, Emma Brunskill, John Stamper, and Chinmay Kulkarni, in collaboration with Stanford University, to submit a proposal to the NSF Expeditions program to carry this vision further. In this broader framing of online learning settings, new problems arise with respect to supporting students on their own personal learning trajectories. The fields of learning analytics and educational data mining have produced models that are able to operate well within bounded decision spaces, usually operating at a single grain size: everything from regulating help strategies within a single problem solving step or pacing through a sequence of activities within a unit of a course to choices of courses within a degree program, or even choices between degree programs. Multiple models at different grain sizes are needed in order to manage complexity, but this fragmentation limits the effectiveness of what can be accomplished. For example, local models misattribute some important cases where students cease to participate in a learning opportunity because they have chosen to move to a different path that is better suited to their needs. Local models treat the discontinued participation on the current path as a lack of success rather than correctly rewarding the positive choice to move to a more appropriate path. Thus, students may fall through the cracks when trajectories cross the boundaries of individual models -- a student is in the wrong degree program, or where participation in an activity may be motivating, but may be distracting from more important goals. In order to adapt the state of the art in reinforcement learning to these broader decision spaces where random sampling is not feasible, there is a need for instrumental variables that relate to student states and dispositions. My contribution to this effort from computational modeling of these variables from observations of their interactions in a variety of forms of social engagement connected directly or indirectly with online learning communities.

With a dual research focus on Computational Sociolinguistics and Computer-Supported Collaborative Learning, my research has frequently afforded the opportunity to observe the extent to which social interaction through discussion makes salient very personal things like cultural identity, socio-economic status, or other power-relevant social identities that sometimes strategically position individuals for success, and other times hold people back. The idea of viewing linguistic choices in social interaction as currency within an economy that is on the one hand social but on the other hand has real implications for achievement in school and advancement at the career level is a well established idea. My joint research with Lauren Resnick and Sherice Clark on agency in urban school classrooms is one context in which these issues have raised questions in my past work. Though well established this idea encompasses many enduring open questions especially as they pertain to computational modeling. In my current work heading into the future, I am pursuing these ideas as Computer-Supported Collaborative Learning provides a setting in which to investigate questions in history courses related to

historical causal reasoning connected with controversial events. For example, in joint work with Baruch Schwarz at the Hebrew University in Jerusalem and Kobi Gal at Ben Gurion University of the Negev, we are exploring how established paradigms for improving consensus building must be adapted and extended in discussions between Israeli and Palestinian students negotiating their different understandings of responsibility for past wars. In an analogous joint project with American History education in the Community Colleges of California system we are working to develop activities to be deployed across campuses in the system on topics such as the origins of the Constitution, especially as topics such as those touch on issues of racism and inequity, that continue to play a role in American politics today in ways that are very personal to the student population of this and similar community college systems.

In summary, my research has benefited from intense involvement in the School of Computer Science both in the language technologies community and in the learning sciences community as it fits within the human-computer interaction community. Because what drives my research is the goal of developing technology capable of both shaping conversation and supporting conversation to achieve a positive impact on human learning, I look forward to remaining active in both of these communities.

TEACHING STATEMENT

Just as conversation is the cornerstone of my research, it is also a center piece in my teaching. As a notable example, many of the ideas that form the foundation for the collaborative research on classroom discourse my group conducts are at the heart of my own classroom teaching. While leading class discussions was a challenge for me when I first began my teaching career, I have continued to work to put into practice the methodologies that research has proven effective, and now the classroom discussions that come out in my own courses are what I most look forward to as an instructor. I believe it is this emphasis on lively class discussion that is largely responsible for the steady increase in teaching scores I have earned over my years of teaching.

What fascinates me most about studying the role of conversation in learning is that new ideas may be created when exchanging alternative viewpoints. The new ideas that emerge through conversation may draw from the differing perspectives of the participants but nevertheless be distinct from the ideas that existed in any of their minds prior to the interaction. The research literature on group learning provides strong evidence that the success of such interactions between students depends upon the ability of the instructor to facilitate this process. The instructor creates opportunities for learning by meeting the students on their own path and offering the support necessary to draw out the students' differing perspectives and ideas. In the midst of this conversation, the instructor is well situated to present the content of the course in a way that is seen by students as relevant to meeting their own goals. In creating an environment where students see their involvement in a course as a means to move forward on their own path, the instructor has the opportunity to play the role of a mentor who comes along side students to offer experience and wisdom and to help them navigate the maze that is before them. That investment of the instructor in individual students yields the greatest increase when it is internalized by the students and then brought back into small group activities and the whole group discussion. Thus, my philosophy of teaching is to strive for a personal connection through conversation with and between students.

An essential ingredient in this learning conversation is the differing perspectives of the participants who are involved. The School of Computer Science at Carnegie Mellon is made up of distinct, tight knit communities of specialization that are situated in such a way as to provide many opportunities for exchanging views. This is an ideal environment in which this philosophy of teaching can flourish. Thus, in my position with appointments in both the Language Technologies Institute and the Human-Computer Interaction Institute, I have taken advantage of the opportunity to create four several courses designed to promote understanding and strengthen interactions between departments and to keep the conversation active. This list includes Conversational Interfaces, Machine Learning in Practice/Applied Machine Learning, Summarization and Personal Information Management (now called Summarization of Documents and Interaction), Computer Supported Collaborative Learning, and Computational Models of Discourse Analysis.

One thing I greatly appreciate about teaching in the School of Computer Science at Carnegie Mellon University is the tremendous freedom we have here as faculty to design and teach courses according to our interests, and I immensely enjoy teaching a wide variety of courses, which nevertheless synergize and build on one another. In addition to the five bridge courses mentioned above, I have designed and taught a cross-cutting course called Research Design and Writing, which emphasized the connection between research design and scientific writing. While the course touched upon basic issues in research methodology, the focus was on writing, evaluating writing, and revision.

Contributing to the broader university community is important to me. Thus, in addition to curriculum development and teaching I have done for the two departments I am directly affiliated with, I have made an effort to invest in resources that meet the educational needs of students in the broad campus community, including outside the School of Computer Science. For example, the Machine Learning in Practice course taught each semester regularly has over 70 students, often with more than 40 students from outside of SCS who are either enrolled, and almost as many waitlisted. Beyond this, I have developed a unit on Verbal Protocol Analysis for the PIER course on Research Methods in the Learning Sciences and collaborated on the development of the Information Literacy unit for the online Computing@Carnegie Mellon course, which all Carnegie Mellon students take in their Freshman year. Most recently I have taken an active role in CMU's Technology Enhanced Learning Writing Initiative, as informal leader of the technology thrust and collaborator with David Kauffer and Chris Neuwirth on projects related to technology supported instruction in Rhetoric. I have also served on the Computing@Carnegie Mellon steering committee and the University Education Council. In the past I also developed a unit on architectures for robust language understanding that I taught in the Spring 2004 offering of Grammar Formalisms, a unit on Human-Computer Interaction as part of the Software Engineering for Information Systems course in Fall of 2007. I had also added a computational track to the Meaning in Language course, with primary instructor Mandy Simons in H&SS, which was a precursor to the current Computational Models of Discourse Analysis class.

In conclusion, just as my research interests in supporting and shaping learning through collaborative conversation informs my teaching, my teaching also informs my research. My conversations with students and observations of their interactions with each other in my courses and in my lab give me insight into their learning processes, which I can then apply in my research.

III. PUBLICATION LIST

BOOKS

1. Suthers, D., Lund, K., Rosé, C. P., Teplovs, C., Law, N. (2013). **Productive Multivocality in the Analysis of Group Interactions**, edited volume, Springer.

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 163. VanLehn, K., Freedman, R., Jordan, P., Murray, C., Osan, R., Ringenberg, M., Rose, C., Schulze, K., Shelby, R., Treacy, D., Weinstein, A., and Wintersgill, M. (2000). Fading and Deepening: The Next Steps for Andes and Other Model-Tracing Tutors, **Proceedings of the 5th International Conference on Intelligent Tutoring Systems**, pp 474-483.
 164. Rosé, C. P., Di Eugenio, B., Moore, J. D. (1999). A Dialogue Based Tutoring System for Basic Electricity and Electronics, **Proceedings of AIED 1999- International Conference on AI in Education**, Le Mans, France.
 165. Rosé, C. P. and Levin, L. S. (1998). An Interactive Domain Independent Approach to Robust Dialogue Interpretation, **Proceedings of COLING-ACL '98 the 36th Annual Meeting of the Association for Computational Linguistics and 17th International Conference on Computational Linguistics**, pp 1129-1135.
 166. Rosé, C. P. and Lavie, A. (1997). An Efficient Distribution of Labor in a Two Stage Robust Interpretation Process, **Proceedings of the Second Conference on Empirical Methods in Natural Language Processing**, pp 26-34.
 167. Rosé, C. P. (1997). The Role of Natural Language Interaction in Electronics Troubleshooting, **Proceedings of the Eighth Annual International Energy Week Conference and Exhibition**, Houston, Texas.
 168. Qu, Y., Rosé, C. P., and Di Eugenio, M., (1996). Using Discourse Predictions for ambiguity Resolution, **Proceedings of the 16th International Conference on Computational Linguistics**, Proceedings of the Conference, pp358-363.
 169. Levin, L., Glickman, O., Qu, Y., Gates, D., Lavie, A., Rosé, C. P., Van Ess-Dykema, C., Waibel, A. (1995). Using Context in Machine Translation of Spoken Language, **Proceedings of the Theoretical and Methodological Issues in Machine Translation Conference**
 170. Rosé, C. P., Di Eugenio, B., Levin, L. S., Van Ess-Dykema, C. (1995). Discourse Processing of Dialogues with Multiple Threads , **Proceedings of the 33rd Annual Meeting of the Association for Computational Linguistics**, pp 31-38.
 171. Woszczyzna, M., Aoki-Waibel, N., Buo, F. D., Coccaro, N., Horiguchi, K., Kemp, T., Lavie, A., McNair, A., Polzin, T., Rogina, I., Rosé, C. P., Schultz, T., Suhm, B., Tomita, M., Waibel, A. (1994). JANUS 93: Towards Spontaneous Speech Translation,

UNREFEREED CONFERENCE/WORKSHOP PAPERS

1. Ranjeev Mittu ; Jessica Lin ; Yifeng Gao ; Huzefa Rangwala ; Peter Shargo ; Joshua Robinson ; Carolyn Rose ; Paul Tunison ; Matt Turek ; Stephen Thomas ; Phil Hanselman; Foundations for context-aware retrieval for proactive decision support **Proc. SPIE 9851, Next-Generation Analyst IV**, 985108 (May 12, 2016); doi:10.1117/12.2231152.
2. Gaurav Singh Tomar, Sreecharan Sankaranarayanan and Carolyn Penstein Roé (2016). Intelligent Conversational Agents as Facilitators and Coordinators for Group Work in Distributed Learning Environments (MOOCs), in **AAAI 2016 Spring Symposium** at Stanford University in Palo Alto, California.
3. Sreecharan Sankaranarayanan, Gaurav Tomar, Miaomiao Wen, Akash Bharadwaj, Carolyn P Rosé (2016). From Insights to Interventions: Informed Design of Discussion Affordances for Natural Collaborative Exchange, in **AAAI 2016 Spring Symposium** at Stanford University in Palo Alto, California.
4. Wen, M., Ferschke, O., Rosé, C. P. (2015). Towards Support of Collaborative Reflection, Help Exchange, and Group Learning in MOOCs, **Learning with MOOCs II**, Teacher's College, Columbia University, October, 2015
5. Wang, E., Baker, R., Alevin, V., Rosé, C., Sewall, J., Popescu, O., Tomar, G., Ferschke, O., Cennamo, M. (2015). Interactive Activities in MOOCs, **Learning with MOOCs II**, Teacher's College, Columbia University, October, 2015
6. Ferschke, O., Yang, D., Rosé, C. P. (2015). A Lightly Supervised Approach to Role Identification in Wikipedia Talk Page Discussions, **Wikipedia, a Social Media: Research Challenges and Opportunities**. Workshop at the International Conference on Weblogs and Social Media 2015, Oxford, UK, 2015.
7. Yang, D., Wen, M., & Rose, C. P. (2014). Towards Identifying the Resolvability of Threads in MOOCs, in **Proceedings of the EMNLP Workshop on Modeling Large Scale Social Interaction In Massively Open Online Courses**
8. Rosé, C. P., Ferschke, O., Tomar, G., Yang, D., Howley, I., Alevin, V., Siemens, G., Crosslin, M., Gasevic, D. (2015). Challenges and Opportunities of Dual-Layer MOOCs: Reflections from an edX Deployment Study, **Interactive Event at CSCL 2015**
9. Rosé, C. P. (2014). Review of Uncharted: Big Data as a Lens on Human Culture, **Journal of Research and Practice in Assessment**, Winter, Special Issue on Big Data and Analytics on Assessment (Book Review)
10. Rosé, C. P. (2014). Automated Linguistics Analysis as a Lens for Analysis of Group Learning, in **Proceedings of the Second International Workshop on Discourse-Centric Learning Analytics**.
11. Hmelo-Silver, C., Rosé, C. P., Levy, J. (2014). Fostering a Learning Community in MOOCs, in **Proceedings of the LAK 2014 Workshop on Conceptual Approaches to Connecting Levels of Analysis in Networked Learning**.
12. Rosé, C. P., Carlson, R., Yang, D., Wen, M., Resnick, L., Goldman, P. & Sherer, J. (2014). Social Factors that Contribute to Attrition in MOOCs, **Proceedings of the First ACM Conference on Learning @ Scale (poster)**.
13. Yang, D., Sinha, T., Adamson, D., & Rosé, C. P. (2013). Turn on, Tune in, Drop out: Anticipating student dropouts in Massive Open Online Courses, **NIPS Data-Driven Education Workshop**.
14. Dyke, G., Mayfield, E., Howley, I., Adamson, D., Rosé, C. P. (2013). Analysis of Discourse and the Importance of Time. **1st International Workshop on Discourse-Centric Learning Analytics (invited paper)**.
15. Adamson, D. & Rosé, C. P. (2013). Academically Productive Talk: One Size Does Not Fit All, in **Proceedings of the 2nd Workshop on Intelligent Support for Learning in Groups**, AIED 2013.

16. Towne, B., Rosé, C. P., & Herbsleb, J. (2012). Position Statement. **NSF Science of Interaction for Data and Visual Analytics Workshop.**
17. Beuth, J., Rosé, C. P., Kumar, R., Adamson, D. (2012). Agent-Monitored Tutorials to Enable On-Line Collaborative Learning in Computer-Aided Design and Analysis, **NSF EEC Awardees Conference.**
18. Gweon, G., Kane, A., Rosé, C. P. (2011). Facilitating knowledge transfer between groups through idea co-construction processes, in **Proceedings of the Annual Meeting of the Interdisciplinary Network for Group Research (INGRoup)**, Minneapolis, MN.
19. Mayfield, E., Garbus, M., Adamson, D., & Rosé, C. P. (2011). Data Driven Interaction Patterns: Authority and Information Sharing in Dialogue, **Proceedings of the AAAI Symposium on Building Representations of Common Ground with Intelligent Agents.**
20. Kumar, R. & Rosé, C. P. (2010). Conversational Tutors with Rich Interactive Behaviors that support Collaborative Learning, **Proceedings of the Workshop on Opportunities for Intelligent and Adaptive Behavior in Collaborative Learning Systems**, ITS 2010, Pittsburgh, PA
21. Stahl, G., Rosé, C. P., Goggins, S. (2010). Analyzing the discourse of GeoGebra collaborations. **Proceedings of the GeoGebra NA 2010 Conference**
22. Stahl, G., Rosé, C. P., O'Hara, K., & Powell, A. (2010). Supporting group math cognition in virtual GeoGebra teams with software conversational agents, **Proceedings of the GeoGebra NA 2010 Conference**
23. Gonzalez-Brenes, J., Sherwani, J., Rosé, C. P., Rosenfeld, R. (2009). Speech Interfaces in the Context of the HealthLine Project, **CHI Workshop on Human-centered computing in International Development**
24. Weusijana, B. A., Kumar, R., Rosé, C. P. (2008). MultiTalker: Building Conversational Agents in Second Life using Basilica, **Second Life Education Community Convention, Purple Strand: Educational Tools and Products**, 2008, Tampa, FL.
25. Wang, Y. C., Rosé, C. P., Barnett, J. (2008). Are you listening to me? An assessment paradigm for Doctor-Patient Communication, **Proceedings of AACH.**
26. Rosé, C. P. and Fussell, S. (2008). Towards Measuring Group Affect in Computer-Mediated Communication, CHI Notes, **Working Notes of the ACM SIG-CHI Workshop on Measuring Affect in HCI: Going Beyond the Individual**
27. Kumar, R., Gweon, G., Joshi, M., Cui, Y., Nwaigwe, A., Rosé, C. P. (2007). Evaluating the Effect of Social Conversation on Learning, Interaction, and Perceived Interdependence in a Collaborative Math Problem Solving Environment, **Working notes of the CSCL Workshop on Chat Analysis in Virtual Math Teams**
28. Rosé, C. P., Fischer, F. & Chang, C. Y. (2007). Exploring the Influence of Culture on Collaborative Learning, **Working Notes of the ACM SIG-CHI Workshop on Culture and Collaborative Technologies**
29. Gweon, G., Rosé, C. P., Albright, E., Cui, Y. (2006). Help Providers and Help Receivers in a Computer Supported Collaborative Learning Environment, **Proceedings of the CSCW Workshop on Role Based Collaboration**
30. Stegmann, K., Weinberger, A., Fischer, F., & Rosé, C. P. (2006). Automatische Analyse nat_rlich-sprachlicher Daten aus Onlinediskussionen [Automatic corpus analysis of natural language data of online discussions]. Paper presented at the **68th Tagung der Arbeitsgruppe für Empirische Pädagogische Forschung (AEPF, Working Group for Empirical Educational Research)** Munich, Germany.
31. Ai, H., Harris, T., Rosé, C. P. (2006). The Effect of Miscommunication Rate on User Response Preferences, **CHI Notes (Work in Progress Papers).**
32. Tribble, A. & Rosé, C. P. (2006). Usable Browsers for Ontological Knowledge Acquisition, **CHI Notes (Work in Progress Papers).**
33. Dzikovska, M. & Rosé, C. P. (2005). TFLEX: Making Deep Parsing Practical with Strategic Pruning, **Proceedings of the International Workshop on Parsing Technologies** (poster)

34. Rosé C. P. & Kraut, R. E. (2005). Towards Community Building for Improving Retention and Achievement in Asynchronous Distance Education, **Proceedings of the Interact 2005 Workshop on E-Learning and Human Computer Interaction**
35. Rosé C. P., Cavalli-Sforza, V., & Robinson, A. (2005). Adapting to and from student goal orientation in guided exploratory learning, invited Symposium presentation, **EARLI Symposium on Adaptation in Tutoring and Collaborative Learning**
36. Gweon, G., Rosé, C. P., Carey, R., Zaiss, Z. (2005). Exploring the Effectiveness of Mixed-Language Peer Problem Solving Interactions, **Proceedings of the AIED 2005 Workshop on Mixed Language Explanations in Learning Environments.**
37. Rosé C. P. & Donmez, P. (2005). TagHelper: An application of text classification technology to automatic and semi-automatic modeling of collaborative learning interactions, **Proceedings of the AIED 2005 Workshop on Representing and Analyzing Collaborative Interactions: What works? When does it work? To what extent? .**
38. Rosé C. P., Alevén, V. & Torrey, C. (2004). CycleTalk: Supporting Reflection in Design Scenarios with Negotiation Dialogue, **Proceedings of the CHI 2004 Workshop on Designing for Reflective Practitioners: Sharing and Assessing Progress by Diverse Communities**
39. Rosé, C. P., Torrey, C. & Alevén, V. (2004). Guided Exploratory Learning in a Simulation Environment for Thermodynamics: A Pilot Study, **Proceedings of the ITS Workshop on Tutorial Dialogue Systems**
40. Alevén, V. & Rosé, C. P. (2004). Towards Easier Creation of Tutorial Dialogue Systems: Integration of Authoring Environments for Tutoring and Dialogue Systems, **Proceedings of the ITS Workshop on Tutorial Dialogue Systems**
41. Rosé, C. P., VanLehn, K. & NLT Group (2003). Is Human Tutoring Always More Effective than Reading, **Proceedings of AIED Workshop on Tutorial Dialogue Systems: With a View Towards the Classroom.**
42. Siler, S., Rosé, C. P., Frost, T., VanLehn, K., & Koehler, P. (2002,). Evaluating Knowledge Construction Dialogues (KCDs) versus minilessons within Andes2 and alone, **Proceedings of ITS Workshop on Empirical Methods for Tutorial Dialogue Systems, San Sebastian, Spain.**
43. Rosé, C. P., VanLehn, K., Jordan, P. (2002). Can we help students with a high initial competency?, **Proceedings of ITS Workshop on Empirical Methods for Tutorial Dialogue Systems, San Sebastian, Spain.**
44. Graesser, A. C., VanLehn, K., Rosé, C. P., Jordan, P. W., & Harter, D. (2001). Intelligent Tutoring Systems with Conversational Dialogue, **AI Magazine**, Special Issue on Intelligent User Interfaces, Volume 2, Number 4.
45. Rosé, C. P. (2000). A Syntactic Framework for Semantic Interpretation, **Proceedings of the ESSLI Workshop on Linguistic Theory and Grammar Implementation**
46. Rosé, C. P. (2000). Facilitating the Rapid Development of Language Understanding Interfaces for Tutoring Systems, **Proceedings of the AAI Fall Symposium on Building Tutorial Dialogue Systems**
47. Mason, M. & Rosé, C. P. (1998). Learning Constraints for Plan-Based Discourse Processors With Genetic Programming, **AAAI Spring Symposium on Discourse and Machine Learning.**
48. Rosé, C. P. (1996). A Genetic Programming Approach to Robust Interactive Dialogue Interpretation, **American Association of Artificial Intelligence Workshop on Detecting, Repairing, and Preventing Human-Machine Miscommunication, Portland, Oregon.**
49. Rosé, C. P. (1995). Conversation Acts, Interactional Structure, and Conversational Outcomes, **Proceedings of the American Association of Artificial Intelligence Spring Symposium on Empirical Methods in Discourse Interpretation and Generation**
50. Suhm, B., Levin, L., Coccaro, N., Carbonell, J., Horiguchi, K., Isotani, R., Lavie, A., Mayfield, L., Rosé, C. P., Van Ess-Dykema, C., Waibel, A. (1994). Speech-Language Integration in a Multi-Lingual Speech Translation System, **Proceedings of the**

American Association of Artificial Intelligence Workshop on Integration of Natural Language and Speech Processing.

51. Woszczyna, M., Coccaro, N., Eisele, A., Lavie, A., McNair, A., Polzin, T., Rogina, I., Rosé, C. P., Sloboda, T., Tsutsumi, J., Aoki-Waibel, N., Waibel, A., Ward, W. (1993). Recent Advances in JANUS: A Speech Translation System, **ARPA Proceedings of the Human Language Technologies Workshop.**

TECHNICAL REPORTS

52. Rosé, C. P. (1997). **Robust Interactive Dialogue Interpretation**, Ph.D. Dissertation, School of Computer Science, Carnegie Mellon University.

SOFTWARE ARTIFACTS

Last Updated Feb 12, 2014

53. *The LCFlex* robust parser
54. *The CARMEL Workbench*, including technology and general purpose knowledge sources for authoring robust language understanding interfaces for English, being used or having been used in 9 universities in the US, Europe, and Asia
55. *TagHelper Tools*, a resource for supporting content analysis of corpus data [*Google Analytics counter indicates that 3,447 new users from 91 countries have downloaded TagHelper tools since July '07 (4,448 downloads)] as of February, 2014, with 6,635 total downloads as of Dec of 2015.*
56. *TuTalk*, an authoring environment for tutorial dialogue agents
57. *LightSIDE: the Summarization Integrated Development Environment*, a general purpose text mining tool bench. The total number of downloads as of May 1, 2016 is 11,557.
58. *Bazaar*, architecture for development of multi-agent dynamic support for collaborative learning
59. *DANCE* website (<http://dance.cs.cmu.edu>), hundreds of return visitors each month

IV. EVIDENCE OF EXTERNAL REPUTATION

CITATIONS AND AWARDS

- Language Technologies Institute Faculty Fellowship Award (Jr. Faculty Chair), July 2007-2009
- Semifinalist for the 2008 Elsevier Grand Challenge (14% acceptance rate)
- Winner of Honorable Mention Award at ACM SIG-CHI, 2006 & 2007
- Winner of Best Student Paper Award at Computer Supported Collaborative Learning (CSCL) 2011
- Winner of Best Poster Award at the Intelligent Tutoring Systems conference (ITS), 2006
- Nominated for Best Paper Award at Computer Supported Collaborative Learning (CSCL), 2015
- Nominated for Best Paper Award at the International Conference of the Learning Science (ICLS) 2012
- Nominated for best technical design award, CSCL 2009

- Nominated for Best Student Paper Award at Computer Supported Collaborative Learning (CSCL), 2007
- Nominated for Best Paper Award at the Intelligent Tutoring Systems conference (ITS), 2006
- Nominated for Best Paper Award at Computer Supported Collaborative Learning (CSCL), 2005
- Nominated for Best Paper Award at AI in Education Conference, 2001, 2007.
- Carnegie Scholar Award, Carnegie Mellon University, 1994-1997.
- Phi Beta Kappa, University of California at Irvine, 1991.
- Golden Key National Honor Society, University of California at Irvine, 1991.
- Simms Memorial Scholarship, University of California at Irvine, 1991-1992.

INVITED TALKS

- Invited Tutorial on Discourse Analytics (expanded to tutorial on LearnSphere in collaboration with Ken Koedinger and John Stamper), Learning Analytics Summer Institute (Co-Organized by the Society for Learning Analytics Research and the School of Informatics at the University of Michigan), June 2016, University of Michigan
- Invited Symposium Chair, Symposium on Learning Analytics, International Conference of the Learning Sciences, June 2016.
- Symposium Talk, Symposium on The Learning Sciences @ Scale: Current Developments in Open Online Learning, International Conference of the Learning Sciences, June 2016
- Symposium Talk, Fostering deliberative argumentation in schools towards the constitution of a deliberative democracy, International Conference of the Learning Sciences, June 2016
- Discussant, Building on Cultural Capacity for Innovation through International Collaboration: In Memory of Naomi Miyake, International Conference of the Learning Sciences, Singapore, June 2016
- International Expert Panelist, Discourse Analytics, Learning Analytics in Education roundtable-cum symposium, event co-located with the International Conference of the Learning Sciences, Singapore, June 2016.
- Invited Talk, Community Engagement as a Resource for Learning, Learning in Social Contexts Conference, Pittsburgh, PA, May 19-21, 2016.
- **Featured Speaker**, Text Mining for Assessment of Writing and Social Positioning, Association of Test Publishers, Education Division, Session on NLP, text mining, and automated scoring, March 20-23, 2016
- **Opening Keynote Talk**, From Data to Support of Social Interaction for Learning in MOOCs, Digital Learning Week Conference, hosted by the School of Education, Teaching Innovation Unit, University of South Australia, March 2016
- Guest Speaker, Strategies for Successful Career Building in Academia, The AECT Early Career Symposium, November 2015.
- Invited Panel Talk, Teaming in Team Based MOOCs, Digital Learning Research Network Conference on Making Sense of Higher Education: Networks and Change, Stanford University, October 2015.
- Invited Talk, Workshop on Computing Education hosted by Al Akhawayn University, in collaboration with the Moroccan Ministry of Higher Education, Oct 2-3, 2015, talk delivered remotely.

- Invited Panelist, Open edX Universities Symposium, George Washington University, November 11, 2015
- Invited Panelist, Research and Resources Towards Collaborative and Discussion Based Learning in MOOCs, CCC Computer-Aided Personalized Education Workshop, November 12-13, 2015 in Washington, DC
- Invited Speaker and Panel Leader, NSF Funded MARWiSE workshop on Multidisciplinary Advances in Reading and Writing for Science Education, NYC, May 7-8, 2015.
- Invited participant, NSF funded Symposium on Learning Sciences and Online Learning, MIT, May 21-22, 2015.
- Invited Symposium Talk, Discourse Analytics to Support Persistent Participation in MOOCs, Symposium on CSCL and Learning Analytics: Opportunities to Support Social Interaction, Self-Regulation and Socially Shared Regulation, CSCL 2015
- Invited Symposium Talk, A Script Theory of Guidance Perspective on Learning Analytics for CSCL, Symposium on CSCL and Learning Analytics: Opportunities to Support Social Interaction, Self-Regulation and Socially Shared Regulation, CSCL 2015
- Invited Panelist, Online Learning: Shaping the Future of Higher Education On and Off Campus, Summit hosted by MIT, Harvard, UC Berkeley and Stanford
- Discussant, Invited Symposium on research on design and computational aspects of CSCL environments, CSCL 2015
- Panel Talk, MOOC Hype vs. MOOC Research: The Role of Cross-Institutional Collaborations in Advancing Science and Equity, AERA 2015 Annual Meeting
- **Keynote talk**, Discourse Analytics, Southeast Educational Data Symposium (SEEDS), jointly hosted by The Institute for Quantitative Theory and Methods and the Society for Learning Analytics Research, Emory University, February 20, 2015
- **Keynote talk** and Invited Workshop Leader, REASON: International Spring school on Measuring Scientific Reasoning and Argumentation, March 5-7, 2015, University of Munich, http://www.en.mcls.uni-muenchen.de/study_programs/reason/index.html
- Invited talk, September 12, 2014. Department of Education Policy and Practice, SUNY Albany
- Invited talk, September 15, 2014, Reasoning Mind, Houston TX
- Invited talk, October 8, 2014, FutureLearn, UK (delivered remotely)
- Invited talk, October 10, 2014, EdX, Boston MA, EdX Communities of Practice Webinar Series
- Invited poster presentation, Social and Motivational Factors Associated with Attrition in MOOCs, Global Learning Council, September 2014
 - https://www.youtube.com/watch?v=FcjuXeL5_K4&list=PL1HxVG_mcukuKNJbQ_oEVLmNwXbyMeq0r&index=12
 - https://www.youtube.com/watch?v=NENY2LQ6XeA&list=PL1HxVG_mcukuKNJbQ_oEVLmNwXbyMeq0r&index=13
- Invited presentation, Social Factors that Impact Persistence in MOOCs, The 2014 Learning with MOOCs Workshop, Massachusetts Institute of Technology

- Invited Tutorial on Text Mining, Learning Analytics Summer Institute (Co-Organized by the Society for Learning Analytic Research and Harvard University), July 2014, Harvard University
 - Also an invited panel talk at the same conference on Learning Analytics and the Learning Sciences
- Invited panelist, Educational Testing Service sponsored conference on “Innovative Assessment of Collaboration”, November 3-4, 2014
- Invited Panelist, ITS & Learning@Scale panel at the Intelligent Tutoring Systems Conference 2014, June 2014
- **Keynote talk**, Cultivating the Seeds of Mentorship: Students as Resources for Creating a Conducive Online Learning Environment, Intelligent Tutoring Systems Conference 2014, June 2014
- Invited Speaker, Human-Technology Partnership in Facilitation of Discursive Instruction, 2014 Cyberlearning Summit, June 2014
- Invited presentation, A network analytic technique for identifying practices of emerging subcommunities in massive online learning communities, ICLS 2014 Workshop on Analytics for Learning and Becoming in Practice, Summer 2014
- Invited Talk, School of Education, University of California at Irvine, March 14, 2014
- Learning through Discussion: Foundations, Findings, and Future, Tutorial at the First Annual ACM Conference on Learning @ Scale, March 2014
- Invited Talk/Visit at Educational Testing Service, invited by Alina von Davier, February 21, 2014
- Invited Talk/Visit at Coursera, invited by Chuong Do (Lead on Data Science team), December 2013
- Invited Participant and presenter at the MOOC Workshop: Defining and Advancing Change (December 2013), with financial support from the Bill and Melinda Gates Foundation
- Invited Panelist, Virtual Villages Panel (platforms that enable people to create virtual villages for to participate meaningfully, but remotely, in the lives of youth), Village Scholar Educational Summit, Convened jointly by the Village Scholar Foundation and the Institute for Urban and Minority Education at Teacher’s College, Columbia University, May 11, 2013.
- Invited Tutorial on Discourse Analytics, Learning Analytics Summer Institute (Co-Organized by the Society for Learning Analytic Research and Stanford University), July 2013, Stanford University
- Invited Panel Talk, Panel on Translating collaborative project-based learning to online and blended environments, Workshop on Multidisciplinary Research for Online Education (MunROE, <http://www.cra.org/cc/mroe>), sponsored by the Computing Community Consortium, Feb 11-12, 2013, Washington, DC
- Invited Symposium Talk, Automated Approaches to Analyzing Data from Collaborative Learning Settings, Symposium on Trends in Support and Analysis of Collaborative Learning, Jointly organized by the Special Interest Groups on Instructional Design and Learning and Instruction with Computers, at the Biennial Meeting of the European Association for Research on Learning and Instruction, August 2013
- Invited Symposium Talk (co-author, presented by Sherice Clarke), Understanding Student Engagement in Classroom Dialogue, Symposium on Enablers and Barriers of Productive Learning Dialogues: Where social meets

cognitive, Biennial Meeting of the European Association for Research on Learning and Instruction, August 2013

- Invited Workshop Talk, Measuring Engagement in Social Processes that Support Shared Cognition, Workshop on Developing Multi-Disciplinary Measurement Approaches for Shared Cognition, University of Central Florida, February 2013
- Invited Instructor, Discourse Analytics: Assessment of Collaborative Learning Discussions, 2013 Academy of the German Institute for International Education Research, Salzschlirf, Germany, June 2013
- Invited Feedback Panel Talk, Invited Workshop: How will Collaborative Problem Solving be assessed at international scale?, Workshop at the Computer Supported Collaborative Learning conference, June 2013
- Invited Panel Talk, Zooming In and Out of Collaborative Process Analysis through Linguistically Informed Machine Learning Models, Invited Plenary Panel: To see the world and a grain of sand: Multiple methods in CSCL research, Computer Supported Collaborative Learning conference, June 2013
- Invited Panel Talk, From Research Instruments to Classroom Assessments: A Call for Tools to Assist Teacher Assessment of Collaborative Learning, Computer Supported Collaborative Learning conference, June 2013
- Invited talk, MIT Media Lab, Summarization of Behavior Trajectories in Online Support Groups, October 19, 2012
 - Gave a similar invited talk at BBN on the same day
- Invited talk, WPI, Supporting Discursive Instruction Online and In the Classroom with Intelligent Conversational Agents, October 22, 2012
- Symposium Invited Talk, Robot Facilitation as Dynamic Support for Collaborative Learning, Symposium at the International Conference of the Learning Sciences, July 2012.
- Workshop Keynote, *Institut Français de l'Éducation* 3rd International Learning Sciences seminar, Methodology Track, Lyon, France, June 2012
- Workshop Invited Talk, LightSIDE: Open Source Machine Learning for Text Accessible to Non-Experts, National Council on Measurements in Education Conference, Spring 2012, *talk delivered by Elijah Mayfield*
- Workshop Invited Talk, Analysis of Social Positioning in Interaction, Indo-US Workshop on Large Scale Data Analytics and Intelligent Services, IISc, Bangalore, Dec 18-20, 2011
- Invited Talk, Analysis of Social Positioning in Interaction, IBM Delhi, Spoken Web group, December 14, 2011.
- Invited Speaker and Panelist, Dialogue Systems that Support Group Work and Learning, at Young Researchers Round Table for Spoken Dialogue Systems 2011 (Academia Session)
- Invited panelist, Towards Monitoring Classroom Interactions Through Speech Processing, as part of the panel on Research on discursive teaching and learning: What have we learned and where are we heading, at the European Association for Research on Learning and Instruction 2011 conference
- Invited Discussant, Session on Dialogue in the Digital Age, Socializing Intelligence Through Academic Talk and Dialogue Conference, sponsored by the American Education Research Association, September 2011
- Invited paper presentation, What Sociolinguistics and Machine Learning Have to Say to One Another about Interaction Analysis, Socializing Intelligence

Through Academic Talk and Dialogue Conference, sponsored by the American Education Research Association, September 2011

- Invited paper presentation, Modeling the Rhetoric of Human-Computer Interaction, HCI International 2011
- Conference Keynote talk, Supporting Group Work with Language Technologies, International Conference on Natural Language Processing, December 2010, IIT Kharagpur.
- Invited data analyst, CKI Communications Analysis Workshop, February 2010
- Invited panelist, Digital Library Usability Panel, 5th International Conference on Universal Digital Library, Pittsburgh, PA, November 8, 2009
- LearnLab India: Towards In Vivo International Comparative Education Research, 2009 Annual Science of Learning Centers Awardees Meeting, Washington DC
- Workshop Invited Talk, Engaging Collaborative Learners with Helping Agents, Learning companions and pedagogical agents workshop, organized by the Oxford Internet Institute, University of Oxford, Oxford, England, May 28, 2009
- Language Technologies for On-Line Learning the Developing World, Microsoft India, Bangalore, April 2009
- Similar talks given the same week at IEEE Society of Bangalore, IIIT in Hyderabad, and C-STEP in Bangalore
- GRASP: The Group learning Assessment Platform, 2009 Collaboration and Knowledge Interoperability Workshop, Orlando, FL, March 2009
- Symposium Invited Talk, Open Problems in Dynamic Collaborative Learning Support, Invited Symposium Talk (symposium organized by Nikol Rummel and Armin Weinberger), International Conference of the Learning Science, Utrecht, the Netherlands, June 2008.
- Supporting Simulation Based Learning, Invited talk, Worth Publishing, Ltd., New York, June 2007
- Workshop Keynote, Language Technologies for Supporting Productive Collaborative Learning Interactions for Science and Engineering Education, Technology-integrated Science and Engineering Education Workshop (TechSEE-II), National Taiwan Normal University, May 2007
- Conference Keynote, Towards Triggering Adaptive Collaboration Support Using Automatic Interaction Analysis, Kaleidoscope CSCL Rendez Vous, January 2007
- Workshop Keynote Talk, Towards Adaptive Collaboration Support, Workshop on Computer Supported Collaboration Scripts, Kaleidoscope CSCL Rendez Vous, January 2007
- Workshop Keynote Talk, TagHelper: Computer Support for Applying Coding Schemes, Workshop on Computer Based Analysis and Visualization of Collaborative Learning Activities, Kaleidoscope CSCL Rendez Vous, January 2007
- Workshop Keynote, Towards Adaptive Support for On-line Learning, Technology-integrated Science and Engineering Education Workshop (TechSEE), National Taiwan Normal University, May 2006
- Workshop Featured Talk, Making Authoring of Conversational Interfaces Accessible, Workshop on Authoring Tools for Advanced Learning Systems with Standards (organized by Arthur Graesser, The Advanced Distributed Learning Workforce Co-Lab at the University of Memphis), November 2005

- Invited Symposium Talk, Adapting to and from student goal orientation in guided exploratory learning, the Biennial Meeting of the European Association of Research on Learning and Instruction, Cyprus, August 2005

SEMINARS & COLLOQUIA

- Colloquium Talk, Supporting Learning in MOOCs with Language Technologies, UIUC Department of Computer Science, November 4, 2016
- Colloquium Talk, Linguistic Agency: Implications for Computational Models of Language in Social Contexts, LTI Colloquium, March 2016
- Invited Talk, Introduction to Machine Learning, Chemical Engineering Department, Enterprise Wide Optimization group, Carnegie Mellon University, March 4, 2016
- Invited Talk, Brown Bag Lunchtime Series, Rutgers University Graduate School of Education, October 28, 2015
- Invited Talk, University of Edinburgh School of Education and School of Informatics, August 2015
- Invited talk, The Open University of the UK, July 2015
- Dynamic Support for Computer Mediated Intercultural Collaboration, CMU Modern Languages Department Program in Second Language Acquisition Graduate Seminar, March 31, 2014 (aaweber@gmail.com)
- Cultivating the Seeds of Mentorship: Students as resources for creating a conducive online learning environment, colloquium talk, The Learning Innovation and Networked Knowledge Lab Fall Colloquium, University of Texas at Arlington, October 2014.
 - <https://echo360.uta.edu/ess/echo/presentation/5daca2f8-7b8f-49c2-8c47-a818760caa4a?ec=true>
- Linguistically Informed Automated Analysis of Collaborative Learning Processes, **Distinguished Lecture** in the Software and Information Systems Department at UNC Charlotte, April 2014
- Invited Talk/Visit, Lytics Lab, School of Education, Stanford University, March 13, 2014
- Supporting Discursive Instruction Online and in the Classroom with Intelligent Conversational Agents, Learning Sciences Colloquium, Arizona State University, October 2013
- SouFLé: A Three Dimensional Framework for Analysis of Social Positioning in Dyadic and Group Discussions, Rhetoric Colloquium, Department of English, Carnegie Mellon University, February, 2013
- Supporting Discursive Instruction Online and in the Classroom with Intelligent Conversational Agents, HCII Seminar, Carnegie Mellon University, November, 2012
- Automated Analysis of Social Positioning in Conversation, CUNY, April, 2012.
- What Sociolinguistics and Machine Learning Have to Say to One Another, MIT Media Lab Applied Machine Learning Series (delivered remotely), August 2011
- Supporting Academically Productive Talk with Computer Agents, Drexel Information School Seminar, Drexel University, February 2011

- Analysis of Perspectives in Interactive Settings, Tepper School of Business IS Seminar, November 19, 2010
- Displayed Bias as a Reflection of Both Speaker and Intended Hearer in Conversational Settings, LTI Colloquium, September 2010.
- Technologies for Automatic Analysis of On-Line Learning Discussions, Institute for Teaching & Learning – Nexus Research and Policy Center, May 2010
- Modeling Style of Conversational Interactions Using Text Mining Techniques, Seminar Talk, Worcester Polytechnic, January 2010
- Analysis of Transactivity in Group Discussions in On-Line and Face-to-Face Settings, Seminar Talk, i-school at Drexel University, January, 2010
- Engaging Collaborative Learners with Conversational Agents using Social Strategies, Seminar Talk, School of Informatics, University of California at Irvine, June 2010
- Analysis of Transactivity in Group Discussions in On-Line and Face-to-Face Settings, Seminar Talk, School of Education, University of California at Los Angeles, June 2010
- Engaging Collaborative Learners with Conversational Agents using Social Strategies, Seminar Talk, School of Education, University of California at Los Angeles, June 2010
- Language Technologies for Supporting Productive Collaborative Learning Interactions for Science and Engineering Education, Turing Seminar Talk, University of Washington, April 2007
- Evaluating the Instructional Value of Errors in Through Peer Tutoring Interactions, DeKalb University, September 2005
- Guided Exploratory Learning in a Simulation Environment for Thermodynamics, University of Muenster, July 2005
- Facilitating Reliable Content Analysis of Corpus Data with Automatic and Semi-Automatic Text Classification Technology, EPFL Switzerland, July 2005
- Cycletalk: Toward a Tutorial Dialogue Agent that Supports Negotiation Dialogues for Learning and Reflection, Karl-Franzens Universitaet in Graz, Austria, April 2004
- Overcoming the Knowledge Engineering Bottleneck for Understanding Student Language Input, University of Edinburgh, November 2003
- Tutorial Dialogue Systems: Where are we, and where are we going? DFKI, Saarbruecken Germany, November 2003

OTHER

- Invited co-editor of the Handbook of Computer-Supported Collaborative Learning
- Invited Center Associate: Research Centre in Digital Education in the Moray House School of Education at the University of Edinburgh
 - <http://www.de.ed.ac.uk/>
- **Press Coverage:** Web interview for the blog of Open edX Universities Symposium, September 4, 2015, and other coverage of the event
 - <http://openedxuniversities.org/2015/09/04/qa-with-prof-carolyn-rose/>
 - <https://www.class-central.com/report/conversation-impacts-learning/>
 - <http://iblstudios.com/brightest-minds-in-higher-education-participated-in-the-first-open-edx-universities-symposium/>

- <https://www.youtube.com/watch?v=PxfpjLOC3pM&feature=youtu.be&t=1h32m20s>
- External Expert for the UK Open University Digital Think Tank (Fall 2015)
- Invited participant, NSF funded CCC Computer-Aided Personalized Education Workshop, November 12-13, 2015 in Washington, DC
- **Press Coverage.** Announcement of new Gates grant, joint with University of Texas at Arlington.
 - <https://www.uta.edu/news/releases/2014/11/LINKLab-dLRN.php>
 - <http://hcii.cmu.edu/news/2014/rose-leads-cmu-efforts-16-million-digital-learning-research-network>
- **Press Coverage.** Announcement about NSF DIBBs: Mining Educational Data to Improve Learning, September 2014.
 - <http://www.hpcwire.com/off-the-wire/carnegie-mellon-leads-new-nsf-project-improve-learning/>
- **Press Coverage.** Announcement about Google Grant on MOOC research + discussion of my current directions in MOOC research, August 2014, Pittsburgh's NPR news station.
 - <http://wesa.fm/post/cmu-google-team-improve-online-education>
- Invited participant, Digital Learning Data as a Public Good: Forging First Principles and Protocols for Scientific Collaboration, Pacific Grove, CA, June 1-4, 2014, organized through the Office of the Vice Provost for Online Learning at Stanford University.
 - Working group to construct the equivalent of the Belmont Report for online learning data.
- Invited participant in NSF funded workshop on Big Data in Education, Arlington, VA, March 2014
- **Interactive TV appearance:** Interviews on Gates Foundation funded interactive TV series produced by In the Telling: "Massive and Open: What are we learning?", part of a larger series aired on Internet TV called e-literate TV (filmed in December 2013).
- **Press Coverage:** Profile Piece published in The New Learning Times, November 2013.
- **Press Coverage:** Announcement about joint grant with Penn State, October 2013:
 - <http://news.psu.edu/story/292862/2013/10/25/academics/ist-researcher-explores-student-online-collaboration>
- Invited NLP Expert, National Crisis Helpline Summit, MIT Media Lab, October 18, 2012
- Invited research partner in an international bid for the Open Research Area Plus for the Social Sciences program, jointly funded through ANR-DFG-ESRC-NWO and NSF. Title: Dialogic Education and Emotional Engagement (D3E), spearheaded by Rupert Higham and J. E. van-de-Pol at the University of Cambridge, UK.
- **Press Coverage** in The Hindu, August 25, 2011: The passion to find out?, talks about the Internship Program in Technology Supported Education, <http://www.thehindu.com/todays-paper/tp-features/tp-nxg/article2394460.ece>
- **Press Coverage** in Edu Tech, April 2012: A Winter of Content, talks about the Internship Program in Technology Supported Education, http://issuu.com/eduindia/docs/edu_issue-03_vol-04_april_2012

- **Press Coverage** on NPR, Education Week, and other sources about the ASAP automatic essay grading challenge, some of which specifically discuss LightSIDE's participation, April 2012:
 - <http://www.edweek.org/ew/articles/2012/04/25/29essays.h31.html?tkn=MXPFNp08fLNL7tUZgZJo9P23%2F4bGdVG%2FEJ1%2F&intc=es>
 - <http://stateimpact.npr.org/ohio/2012/04/12/computers-can-score-student-essays-as-well-as-humans-study-finds/>
 - <http://stateimpact.npr.org/ohio/2012/06/08/the-pros-and-cons-of-using-computers-to-teach-students-how-to-write/>
 - <http://marginalrevolution.com/marginalrevolution/2012/04/ahem-4.html>
 - <http://www.insidehighered.com/news/2012/04/13/large-study-shows-little-difference-between-human-and-robot-essay-graders>
 - <http://www.ohio.com/news/break-news/ua-dean-instrumental-in-automated-grading-study-1.294837>
 - http://www.uakron.edu/im/online-newsroom/news_details.dot?newsId=40920394-9e62-415d-b038-15fe2e72a677&pageTitle=Top%20Story%20Headline&crumbTitle=Man%20and%20%20machine:%20Better%20writers,%20better%20grades
 - http://blogs.edweek.org/edweek/edtechresearcher/2012/04/grading_automated_essay_scoring_programs-part_iii_classrooms.html
 - http://www.cleveland.com/metro/index.ssf/2012/04/computers_as_good_as_humans_in.html
 - <http://www.nytimes.com/2012/04/23/education/robo-readers-used-to-grade-test-essays.html>
 - <http://www.usatoday.com/news/education/story/2012-04-23/essay-scoring-computer-software/54493662/1>
 - http://www.huffingtonpost.com/tom-vander-ark/better-tests-more-writing_b_1450604.html
- **Press Coverage** in Science: In an Editor's Choice column, LightSIDE was singled out as having value for educators, June 2012
- **Press Coverage** on Education Week, feature story about my work on computer supported collaborative learning as part of an article about the role of technology in education, August 2012: http://www.edweek.org/ew/articles/2012/08/08/37replace_ep.h31.html
- **Press Coverage** in a News Alert on EdNet (<http://www.ednetinsight.com/news-alerts/hellerresults.html>) in an article on Big Data in K-12 education, Nov 2012
- **Press Coverage** on the 2012 Winter School, in The Heart and Soul of Andhra Pradesh, the largest daily newspaper in the state of Andhra Pradesh, web access at www.eenadu.com, December 11 edition, 2012
- Faculty Affiliate of the University of Pittsburgh's Sara Fine Institute (an institute devoted to the study of inter-personal behavior and technology)
- Invited expert reviewer for the Ontario Research Fund (Canada), Ontario Ministry of Research and Innovation

V. EXTERNAL PROFESSIONAL ACTIVITIES

ADVISORY BOARDS

- Advisory Board Member, Computer-Supported Math Discourse Among Teachers and Students Center, Drexel University, NSF DRK-12 Program (grant started Summer 2011)
- Advisory Board member, NSF/Cyberlearning funded SimBio/MIT project related to automated assessment (2013-)
- Advisory Board Member, NSF/HCC, Modeling and Supporting Creativity During STEM learning activities (2014-)
- Advisory Board Member, Designing for change in teachers' practices – towards implementing explorative mathematics instruction, Spenser Foundation (2014-) LightSIDE Labs Inaugural Research Advisory Board (2014-)
- Steering Committee Member, Educational Discourse, NSF BCC Capacity Building grant (2015)
- Design Advisory Panel member of Pearson's Dialogue for Language Learners (DLL) project, Fall 2015
- Advisory Board Member, NSF funded Project Learning with Automated, Networked Supports (PLANS), Spring 2016

CONFERENCE AND WORKSHOP COMMITTEES

- Program Committee for Learning With MOOCs III, Fall 2016
- Program Committee for SIGDIAL 2016
- Program Committee Member for ACM Learning@Scale 2016
- Program Committee for Educational Data Mining 2016
- Program Committee Member for ACL 2016 in the area of Dialogue and Interactive Systems
- Workshop Co-chair for the International Conference of the Learning Sciences (ICLS 2016)
- **Program Co-Chair** of Learning Analytics and Knowledge 2016
- Co-Organizer of Invited Session representing the International Society of the Learning Sciences at the 2015 Biennial Meeting of the European Association for Research on Learning and Instruction
- **Program Co-Chair (Discourse)** SIGDIAL 2015
- Program Committee for Learning@Scale 2015
- **Program Co-Chair** for the EMNLP 2014 Workshop on Modeling Large Scale Social Interaction in Massively Open Online Courses
- **Program Co-Chair** for 5th ACM International Conference on Collaboration Across Boundaries (CABS): Culture, Distance and Technology (Language Technologies Track) 2014
- Senior Program Committee for ICLS 2014
- Program Committee for WWW 2014, EACL 2014 (Session Chair), LAK 2014, ACM-SIGCHI 2014, and ACM Learning at Scale Conference (L@S) 2014, EDM 2014
- Senior Program Committee for AIED 2013

- Advisory Committee for 2nd Workshop on Intelligent Support for Learning in Groups (AIED 2013)
- **Area co-chair** for Discourse, Dialogue, and Pragmatics at EMNLP 2013
- Program committee for LAK 2013, CSCL 2013, EDM 2013, ACL 2013
- Associate Chair for Intelligent User Interfaces 2012
- Program Committee for HLT-NAACL 2012, ITS 2012, ICLS 2012, NAACL Student Research Workshop and Doctoral Consortium 2012, CHI 2012, Ce-Learning 2012, Sigdial 2012, EDM 2012
- Advisory Committee for the Young Researchers Round Table for Spoken Dialogue Systems (YRRSDS'11)
- Program committee for AIED2011, EDM 2011, CSCL 2011, WWW 2011 Doctoral Consortium
- Reviewer Board member for the STELLAR Computer Supported Collaborative Learning Community Alpine Rendez Vous, 2011.
- Review panel member for AERA 2011, Division C Section 11 (Learning & Instruction: Technology Research)
- Demo chair for HLT-NAACL 2010
- Panelist for HLT-NAACL 2010 Student Research Workshop
- Co-Chair for ITS 2010 Young Researcher's Track/ Doctoral Consortium
- Senior program committee for special issue of IEEE Transactions on Learning Technologies related to Intelligent and Innovative Support for CSCL 2010
- Treasurer for International Conference on Intercultural Collaboration (ICIC) 2010
- Program committee for EDM 2010, FLAIRS 2010, ITS 2010 (Winner of ITS Outstanding Reviewer Award, 2010)
- Panel reviewer for the American Association for Educational Research Division C Section 7 (Technology Research), 2010
- Faculty Advisor for the HLT-NAACL Student Research Workshop (doctoral consortium) 2009, in collaboration with Anoop Sarkar at Simon Fraser University
- Review Committee for ACL 2009, IUI 2009, CHI 2009, HRI 2009, IWIC 2009, CSCL 2009, AIED 2009, FLAIRS 2009
- Program Committee, ITS 2008, FLAIRS 2008, ICCE 2008, LREC 2008
- Program Committee, Educational Data Mining Conference, 2008
- Treasurer, International Workshop on Intercultural Collaboration (IWIC) 2008
- Senior Program Committee Member, AI in Education (AIED) 2007
 - Tutorial Co-Chair, overseeing tutorials with Roger Azevedo, AIED 2007
 - Mentor for AIED 2007 Young Researcher's Track
- Review Committee for Computer Supported Collaborative Learning (CSCL) 2007
- Review Committee for AAAI 2007
- Review Committee for Human Robot Interaction 2006
- Program Committee for FLAIRS 2006
- Program Committee for Intelligent Tutoring Systems (ITS) 2006
- Program Committee for AAAI 2006
- Scientific Committee for LREC 2006
- Program Committee for AIED 2005

- Program Committee for the Association for Computational Linguistics (ACL) 2005 Workshop on Educational Applications of NLP
- Program Committee for the ITS 2004 workshop on Tutorial Dialogue
- Program Committee for ScaNaLU: Workshop on Scalable Natural Language Understanding technology, 2004
- Co-Chair for AI in Education 2003 workshop on Tutorial Dialogue Systems: With A View Towards the Classroom
- Organizing Committee for HLT-NAACL 2003 workshop on Building Educational Applications Using Natural Language Processing
- Co-Chair for ITS Workshop on Empirical Methods for Tutorial Dialogue Systems, 2002
- Organizing Committee member for AIED 2001 workshop on Tutorial Dialogue Systems
- Co-Chair for AAAI Fall Symposium on Building Tutorial Dialogue Systems, 2000
- Thematic Session Co-Chair, 37th Annual Meeting of the Association for Computational Linguistics, 1999.
- Review Committee member, European Chapter of the Association for Computational Linguistics, 1999.
- Review Committee member, Student Session of the 35th Annual Meeting of the Association for Computational Linguistics, 1997.

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- The International Society of the Learning Sciences
 - **President Elect (2014), President (2015), Past President (2016)**
 - **Elected Member of ISLS Board of Directors, 2013-2019**
 - **Elected Co-Chair of the CSCL Committee**, which is the governing board of directors for the CSCL community, 2013-2016
 - **Secretary-Treasurer** (and *ex officio* member of the Board of Directors) 2008-2014
 - **Secretary-Treasurer of the CSCL community** (Summer of 2010 – Summer of 2014)
 - Awarded a “medal of honor for service” at the 2010 ISLS Board Retreat
 - Served as committee member of the Web Publicity committee 2007-2010 (formally served as co-chair 2008-2009)
- Association for Computing Machinery (ACM)
 - ACM Learning @ Scale Steering Committee member 2014-Present
- The European Association for Research on Learning and Instruction (EARLI)
- The Association for Computational Linguistics (52feab82597c)
- The International Artificial Intelligence in Education Society
 - **Elected Executive Board Member**, Fall 2013-
- Charter member of the International Educational Data Mining Society

EDITORIAL BOARD MEMBERSHIPS

- Founding Editorial Board Member for the Journal of Dialogue Systems 2006-
 - Became the Journal of Discourse and Dialogue Research in 2008
 - Became the Journal of Dialogue and Discourse in 2009
- Editorial Board Member of the Journal of Educational Data Mining, 2008-
- Editorial Board (Associate Editor) of the Journal of Human-Computer Studies, 2010-2012.
- Editorial Board Member (Associate Editor 2011-2016, approved for transition to Executive Editor in April 2016) of the International Journal of Computer Supported Collaborative Learning, 2010-
- Editorial Board Member (Associate Editor) IEEE Transactions on Learning Technologies (invited as an NLP expert), 2013-
 - Also Guest Editor of IEEE TLT Special Issue on Learning Analytics
- Editorial Board Member of the International Journal of Artificial Intelligence in Education, 2013-

OTHER

- Guest co-editor of a special issue of the Journal of Learning Analytics entitled: Convergence of Communities for Grounding, Implementation and Validation
- Co-Organizer of the Collaborative Learning and Web 2.0 workshop at the International Conference of the Learning Sciences, June 2016, Singapore
- Co-Organizer of the Mid-Career Workshop at Computer Supported Collaborative Learning 2015 (CSCL '15)
- Co-Organizer of Early Career Workshop at Computer Supported Collaborative Learning 2013 (CSCL '13)
- Co-Organizer of CSCL 2011 Tutorial on Leveraging tool support for the analysis of computer-mediated activities.
- (Lead) Co-organizer of the STELLAR Computer Supported Collaborative Learning Community Alpine Rendez-Vous workshop on Leveraging Researcher Multivocality for Insights on Collaborative Learning
- Co-organized CSCL 2011 tutorial “Leveraging Tool Support for Computer Mediated Activities” with Gregory Dyke.
- Hosted Dr. Vasudeva Varma for his short sabbatical at the Language Technologies Institute in Spring 2010
- Co-Organizer of ITS 2010 Workshop on Opportunities for intelligent and adaptive behavior in collaborative learning systems
- Co-Organizer for ICLS Workshop on Productive Multivocality in the Analysis of Collaborative Learning, June 2010
- Co-organizer for Kaleidoscope CSCL Rendez-Vous Workshop on Pivotal Moments in Collaboration, December 2009
- Co-organizer for CSCL 2009 Workshop: Common Objects for Productive Multivocality in Analysis
- Co-Organizer for the ICLS 2008 Workshop on Scaling Up Analysis of Interaction in Networked Learning Environments
- Co-Organizer for ICLS 2006 Workshop on Dynamic Support for CSCL: Conceptual Approaches and Technologies for Flexible Support of Collaborative Knowledge Construction

- Invited Expert External Reviewer for internal Call for Learning Center Project Proposals at Swiss Federal Institute of Technology in Lausanne (EPFL), Summer 2005
- Review Committee for the Journal of Natural Language Engineering Special Issue on Educational Applications
- Panel Organizer for ITS 2004 panel “Towards Encouraging a Learning Orientation Above a Performance Orientation”
- Has reviewed for the HCI Journal, the Information Retrieval Journal, the Journal of Natural Language Engineering, the Computational Linguistics journal, the Journal of Artificial Intelligence in Medicine, the Journal of AI Research, User Modeling and User-Adapted Interaction: The Journal of Personalization Research, the Discourse Processes Journal, and the Iranian Journal of Electrical and Computer Engineering

I. CONTRACT AND GRANT SUPPORT

CURRENT

Title: STEM+C: Study of a Cyber-enabled Social Computing Framework for Improving Practice in Online Computing Communities

PI: Carolyn P Rosé

Agency: National Science Foundation

Grant Number: STEM+C (submitted to BigData)

Duration: 01/01/16 – 12/31/20

Amount: 1.6M (CMU portion, UT Arlington got an additional 400K)

Support:

Title: CIF21 DIBBs: Building a Scalable Infrastructure for Data-Driven Discovery and Innovation in Education

PI: Kenneth Koedinger

Agency: National Science Foundation

Grant Number: DATANET 1443068

National Science Foundation award (ACI-1443068)

Duration: 01/01/15 – 12/31/20

Amount: \$4,830,819.00

Support:

Title: Data Fusion in Networked Time Series Data

PI: Carolyn Rosé

Agency: Navy Research Lab

Grant Number:

Duration: 2/1/2015 to 5/31/2017

Amount: 250K

Support: 1 month

Title: InSpark: Digital Learning Research Network (dLRN)

PI: George Siemens at UT Arlington (Carolyn Rosé is PI on subcontract to CMU)

Agency: Gates Foundation

Grant Number:

Duration: 11/1/2015 to 11/30/2017

Amount: 150K (subcontract on a larger grant)

Support:

Title: Next Generation Courseware

PI: Carolyn Rosé (subcontract from Smart Sparrow and UT Arlington)

Agency: Gates Foundation

Grant Number:

Duration: 10/1/2014 to 9/31/2017

Amount: 80K (subcontract on a 4.5 million dollar development grant where 350K total was earmarked for research)

Support: 1.33 month (total over 3 years)

Title: Toward Adaptive Interactive Learning Experiences in MOOCs

PI: Justine Cassell

Agency: Google
Grant Number:
Duration: 5/1/2014 to 5/1/2016
Amount: 600K
Support: 80K student support per year (3 years total)

Title: HCC: Medium: Personalized Information Access for Online Deliberation Systems
PI: James Herbsleb
Agency: National Science Foundation
Grant Number: IIS-1302522
Duration: 8/1/2013 to 7/31/2017
Amount: \$1,122,000
Support: 1 month

Title: EXP: Collaborative Research: Fostering Ecologies of Online Learners through Technology Augmented Human Facilitation
PI: Carolyn P. Rosé
Agency: National Science Foundation
Grant Number: IIS-1320064
Duration: 9/15/2013 to 2/29/2016
Amount: \$278,861
Support: 0.5 month

Title: DIP: Connecting Idea Threads across Communities for Sustained Knowledge Building
PI: Carolyn Rosé (of CMU subcontract to SUNY Albany)
Agency: National Science Foundation
Grant Number: NSF Cyberlearning 1441479
Duration: 9/1/2014-8/31/2018
Amount: 110K
Support: only student support

PAST

Title: Using textual notes as light supervision for time series models of sensor data for medical alarms
PI: Carolyn Rosé
Agency: Navy Research Lab
Grant Number:
Duration: 5/1/2014 to 12/1/2014
Amount: 50K
Support: 1 month

Title: Extracting Social Meaning from Linguistic Structures in African Languages
PI: Lori Levin
Agency: Howard University / ARL
Grant Number: 000665610000034354; W911NF-11-2-0042
Duration: 6/10/2011 to 6/9/2016

Amount: \$710,602
Support: 1 month

Title: Pittsburgh Sciences of Learning Center Renewal
PI: Kenneth Koedinger
Agency: National Science Foundation
Grant Number: OMA-0836012
Duration: 2/15/2010 to 1/31/2015
Amount: \$925,000
Support: 0.5 month

Title: CSCL 2013: Learning across Levels of Space, Time, and Scale Doctoral Constortium and Early Career Workshops
PI: Carolyn P. Rosé
Agency: National Science Foundation
Grant Number: IIS-1331135
Duration: 6/1/2013 to 5/31/2014
Amount: \$40,000

Title: Towards Optimization of Macrocognitive Processes: Automating Analysis of the Emergence of Leadership in Ad Hoc Teams
PI: Carolyn P. Rosé
Agency: Office of Naval Research
Grant Number: N00014-11-1-0221
Duration: 1/1/2011 to 12/31/2013
Amount: \$909,029
Support: 2 months

Title: Enabling Resilient Massive Scale Open Online Learning Communities through Models of Social Emergence
PI: Carolyn P. Rosé
Agency: Athabasca University Gates Foundation
Duration: 9/1/2013 to 3/31/2014
Amount: \$25,000
Support: 0.5 month

Title: Collaborative Research: Conversational Dynamics in Online Support Groups
PI: Robert Kraut
Agency: National Science Foundation
Grant Number: IIS-0968485
Duration: 9/15/2010 to 8/31/2014
Amount: \$635,444
Support: 0.25 month

Title: Collaborative Research: Networked Collaboration Modules for Integrating Mathematics and Engineering Education Using Intelligent Agents
PI: Jack Beuth
Agency: National Science Foundation
Grant Number: DUE-1022958
Duration: 9/1/2010 to 8/31/2013

Amount: \$264,998
Support: 0.75 month

Title: ICES: Group Cognition: Learning in Engineering Project Terms
PI: Susan Fussell & Daniel Siewiorek
Agency: National Science Foundation
Grant Number: EEC-0935127
Duration: 9/1/2009 to 8/31/2013
Amount: \$399,928
Support: 0.5 month

Title: ENGAGE: Learning to Solve Problems, Solving Problems to Learn
PI: Vincent Alevin
Agency: DARPA
Grant Number: N0001412C0284
Duration: 6/15/2011 to 7/31/2013
Amount: \$1,897,106
Support: 1 month

Title: Dynamic Support for Virtual Math Teams
PI: Carolyn P. Rosé
Agency: National Science Foundation
Grant Number: DRL-0835426
Duration: 8/1/2009 to 7/31/2013
Amount: \$306,132
Support: 0.25 month

Title: HCC-Medium: Collaborative Research: Dynamic Support for Computer-Mediated Intercultural Communication
PI: Carolyn P. Rosé
Agency: Cornell University / National Science Foundation
Grant Number: 573848866; IIS-0803482
Duration: 12/15/2008 to 11/30/2012
Amount: \$676,043
Support: 1 month

Title: Theories and Models of Group Cognition
PI: Carolyn P. Rosé
Agency: Drexel University / Office of Naval Research
Grant Number: 204092-3629; N00014-10-1-0277
Duration: 11/12/2009 to 9/30/2012
Amount: \$242,500
Support: 2 months

Title: SLC Center: Pittsburgh Science of Learning Center: Studying Robust Learning with Learning Experiments in Real Classrooms
PI: Kenneth Koedinger
Agency: National Science Foundation
Grant Number: SBE-0836012
Duration: 10/1/2004 to 9/30/2012
Amount: \$321,000

Support: 2 months

Title: Collaborative Research: Agent-Monitored Tutorials to Enable On-Line Collaborative Learning in Computer-Aided Design and Analysis

PI: Jack Beuth

Agency: National Science Foundation

Grant Number: EEC-0935145

Duration: 9/1/2009 to 8/31/2012

Amount: \$349,968

Support: 0.5 month

Title: ADEPT: Assessing Design Engineering Project Classes with Multi-Disciplinary Team

PI: Daniel Siewiorek

Agency: National Science Foundation

Grant Number: EEC-0648487

Duration: 6/1/2007 to 5/31/2012

Amount: \$579,205

Support: 1 month

Title: TFLex: Expanding the Accessibility and Impact of Language Technologies for Supporting Education

PI: Carolyn P. Rosé

Agency: Office of Naval Research

Grant Number: N00014-08-1-1033

Duration: 5/19/2008 to 11/30/2011

Amount: \$111,997

Support: 2 months

Title: First-Year Computer-Aided Engineering and Outreach Using Agent-Monitored, Collaborative Tutorials

PI: Jack Beuth

Agency: National Science Foundation

Grant Number: DUE-0837661

Duration: 3/1/2009 to 2/28/2011

Amount: \$149,854

Title: Student Support for the Tenth International Conference on Intelligent Tutoring Systems

PI: Jack Mostow

Agency: National Science Foundation

Grant Number: IIS-1014092

Duration: 2/1/2010 to 1/31/2011

Amount: \$25,000

Title: IERI: Learning-Oriented Dialogs in Cognitive Tutors: Toward a Scalable Solution to Performance Orientation

PI: Vincent Aleven

Agency: National Science Foundation

Grant Number: DRL-0437794

Duration: 10/1/2004 to 9/30/2010

Amount: \$1,270,000
Support: 2.5 months

Title: Student Research Workshop in Computational Linguistics at the North American Association for Computational Linguistics and Human Language Technologies 2009 Conference

PI: Carolyn P. Rosé
Agency: National Science Foundation
Grant Number: IIS-0907847
Duration: 5/1/2009 to 4/30/2010
Amount: \$20,200

Title: CycleTalk: Further Exploring the Pedagogical Value of Tutorial Dialogue in Simulation Based Learning

PI: Carolyn P. Rosé
Agency: Office of Naval Research
Grant Number: N00014-07-1-0017
Duration: 10/1/2006 to 9/30/2009
Amount: \$360,241
Support: 2 months

Title: A Shared Resource for Robust Semantic Interpretation for Both Linguists and Non-Linguists

PI: Carolyn P. Rosé
Agency: Office of Naval Research
Grant Number: N00014-05-1-0043
Duration: 11/8/2004 to 3/1/2009
Amount: \$300,721
Support: 1.8 months

Title: ITR: Tutoring Scientific Explanations via Natural Language Dialogue

PI: Kurt Van Lehn
Agency: National Science Foundation
Grant Number: IIS-0325054
Duration: 1/1/2004 to 1/31/2009
Amount: \$2,500,000
Support: 0.8 month

Title: Exploring Adaptive Support for Virtual Math Teams

PI: Carolyn P. Rosé
Agency: National Science Foundation
Grant Number: DRL-0723580
Duration: 8/1/2007 to 7/31/2008
Amount: \$49,999
Support: 0.5 month

Title: Verilogue Gift

PI: Carolyn P. Rosé
Agency: Verilogue, Inc.
Grant Number:
Duration: 1/1/2008 to 6/30/2008

Amount: \$35,000

Title: Worth Publishers Gift

PI: Carolyn P. Rosé

Agency: Worth Publishers

Grant Number:

Duration: 12/1/2007 to 5/31/2008

Amount: \$40,000

Title: Facilitating Accountability for Standards-Based Math at All Levels

PI: Kenneth Koedinger

Agency: GE Foundation

Grant Number:

Duration: 1/1/2005 to 12/31/2007

Amount: \$356,129

Support: 2 months

Title: CycleTalk: A Tutorial Dialogue System that Supports Negotiation in a Design Context

PI: Carolyn P. Rosé

Agency: Office of Naval Research

Grant Number: N00014-04-1-0107

Duration: 11/17/2003 to 9/30/2006

Amount: \$453,489

Support: 1.8 months

Title: Calculategy: Exploring the Impact of Tutorial Dialogue Strategy in Shaping Student Behavior in Effective Tutorial Dialogue for Calculus

PI: Carolyn P. Rosé

Agency: National Science Foundation

Grant Number: DRL-0411483

Duration: 2/1/2004 to 1/31/2006

Amount: \$96,627

Support: 1 month

Title: Developing Usable Mixed-Initiative Planning Systems

PI: Robert Kraut

Agency: National Aeronautics & Space Administration

Grant Number: NNA04CK15A

Duration: 6/1/2004 to 5/31/2005

Amount: \$93,457

VI. EVIDENCE OF TEACHING PERFORMANCE

COURSES TAUGHT AT CARNEGIE MELLON

- **11-719 Computational Models of Discourse Analysis**
- **11-899 Summarization and Personal Information Management**
 - **Name changed to Summarization of Documents and Interaction in Fall 2014**
- **11-780 Research Design and Writing**
- **11-718 Conversational Interfaces**
- **11-791 Software Engineering for Information Systems (Co-instructor)**
- **11-344 Machine Learning in Practice (11-633,05-834, 05-434)**
- **05-899 Special Topics: Computer Supported Collaborative Learning**
- **11-722 Grammar Formalisms (Co-instructor)**
- **85-748 Research Methods for the Learning Sciences (Co-instructor)**
- **11-725 Meaning in Language (and Meaning in Language self-paced lab)**

VII. CONTRIBUTIONS TO EDUCATION

CURRICULUM DESIGN

- **11-718 Conversational Interfaces**
- **11-344 Machine Learning in Practice (05-834, 05-434)**
- **05-899 Special Topics: Computer Supported Collaborative Learning**
- **11-899 Summarization and Personal Information Management**
 - **Renamed Summarization of Documents and Interaction in Fall 2014**
- **11-780 Research Design and Writing**
- **11-719 Computational Models of Discourse Analysis**
- **11-725 Meaning in Language**
(Computational Track, newly designed in Fall 2009)
- **99-101 Computing at Carnegie Mellon**
(Information Literacy Unit, offered to all CMU Freshman beginning in Fall 2010)
- **85-748 Research Methods for the Learning Sciences**
(Co-developer of unit on Video and Verbal Protocol Analysis, also co-developed OLI version of that unit in Summer 2011)

OTHER

- Contributed analysis, design recommendations, or interventions to the following MOOCs: Coursera: Accountable Talk Conversation that Works (University of Pittsburgh, Fall 2013), DALMOOC (University of Texas at Arlington, Fall 2014), edX: Big Data in Education (Columbia, Fall 2015), Medicinal Chemistry (Davidson College, Fall 2015, Spring 2016), edX: The Rise of the Superhero (The Smithsonian Institute, Fall 2015, Spring 2016)
- Co-Instructor of an EdX MOOC on Data, Analytics, and Learning
- Invited contributor of a unit on “Learning Analytics and Educational Data Mining of Discourse Data” for inclusion in a collection of resources disseminated through the ISLS Network of Academic Programs in the Learning Sciences (NAPLES), to be delivered as an online short course
- In collaboration with the Eberly Center for Teaching Excellence, ran a workshop on using CSCL technologies for teaching at CMU, October 2012
- Ran a 2 day text mining workshop at Howard University, co-sponsored by NSF and ARO/ARL, March 12th and 13th, 2012
- Was invited to “Apple Pie with Alpha Chi”, an Alpha Pi Omega Nu event that honors “professors who have made a profound impact on our academic lives”
- Working with the HCII Learning Science faculty on the development of a new professional master’s program in Learning Sciences and Technology
- Organized and ran a 2 week Winter School at IIIT in December of 2009 (in Hyderabad), 2010 (in Hyderabad), and 2011 (in Delhi) as part of an effort to develop an internship program and build a LearnLab in India, as an international extension of the Pittsburgh Science of Learning Center, secured financial sponsorship from Microsoft Research India and the Pittsburgh Science of Learning Center

(<http://www.cs.cmu.edu/~cprose/winterschool/index.html>, <http://www.cs.cmu.edu/~cprose/winterschool2010/index.html>). A steadily increasing number of students have applied from year to year (100 in year 1, 200 in year 2, 350 in year 3). 9 interns came to CMU for the summer of 2010, and 9 were accepted for 2011, but a couple could not get visas. The program was covered in The Hindu in Summer 2011 <http://www.thehindu.com/todays-paper/tp-features/tp-nxg/article2394460.ece> and Edu Tech magazine in April 2012: http://issuu.com/eduindia/docs/edu_issue-03_vol-04_april_2012

- Worked to produce an on-line version of the PSLC summerschool, including video lectures and comprehensive documentation for PSLC course development tools (<http://www.cs.cmu.edu/~cprose/Summer09.html>)
- Worked with Eric Nyberg and Anatole Gershman on developing a distance education program at LTI
- Worked with Eric Nyberg on the development of a series of professional development minis or full courses for LTI focused on Teaching, Writing, and Experimental Design/Data Analysis. The first of these is currently offered each fall as a 12 unit course entitled Research Design and Writing
- Designed a unit on user research for Eric Nyberg's Software Engineering for Information Systems course.
- Helped lead a research workshop on machine learning at OurCS in Fall, 2007, run through Women in CS with Bob Kraut and Moira Burke (repeated in Spring of 2011, Fall 2015)
- Gave an invited talk on Project Management at the iSLC conference, Spring 2008
- Organizer of AIED 2007 tutorial "TagHelper Tools: Tools for Supporting the Analysis of Verbal Data"
- Organized and ran a 2 week Math Camp for under-prepared middle school students in Summer 2006 with Ariane Watson at Propel Charter School in Homestead as part of a research project on supporting math communication. As a follow up, organized an afterschool program at the same school for Spring 2007.
- Invited instructor at the PSLC/ITS summer school Ken Koedinger and Vincent Aleven organized in Summer 2004 and again in 2006, 2007, 2008, 2009, 2010, 2011, 2012
- Offered a full-day tutorial on TagHelper tools at CMU on June 19, 2007. 15 people came for the full day, including several from out of state, in addition to 12 more participants from the PSLC/ITS summer school who participated either for part of the time or the whole time, depending on their area of concentration within the summer school. Another one was conducted in 2008 resulting in a number of ongoing collaborations.

VIII. STUDENT ADVISING

COMPLETED PHD STUDENTS

Rohit Kumar (Now Researcher at BBN)

- Year Entered: 2005
- Thesis Title: *Conversational Agents in Multi-Party Interactive Situations*, Defended Fall 2011

Gahgene Gweon (Assistant Professor at KAIST, transitioning to Seoul National University)

- Year Entered: 2005
- Thesis Title: *Assessment and Support of the Idea Co-Construction Process in Face-to-Face Engineering Project Groups*, Defended Spring 2012

Guang Xiang (Co-advised with Jason Hong, now a Research Engineer at Twitter)

- Year Entered: 2007
- Thesis Title: *Fighting Phish in all Frontiers: A Holistic Anti-phishing Solution*, Defended Spring 2013

Mahesh Joshi (Co-advised with William Cohen starting in Fall 2010, now a Research Engineer at E-Bay)

- Year Entered: 2006
- Thesis Title: *Generalizing Classification Models Across Subpopulations in Data*, due to defend in Spring 2013

Iris Howley (Postdoc at Stanford University)

- Year Entered: 2008, PIER Fellowship Awardee
- Area of Study: Motivation/Computer Supported Collaborative Learning

PHD STUDENTS ON LEAVE

Elijah Mayfield (leave of absence since Fall 2013 to start LightSIDE Labs, Acquired by TurnItIn)

- Year Entered: 2009, Siebel Scholar, IBM Fellowship Awardee
- Area of Study: Computational Sociolinguistics

David Adamson (ABS, co-founder of LightSIDE Labs)

- Year Entered: 2010 (began working with me in Summer 2011)
- Area of Study: Dialogue Agents and Discourse Analysis

Ryan Carlson (Co-advised with Ken Koedinger, completed MLT in December 2013, on leave at Carnegie Learning)

- Year Entered: 2011, PIER Fellowship Awardee
- Area of Study: Conversational Agents

Gaurav Tomar (on leave at Google Research)

- Year Entered: 2014
- Area of Study: Dialogue system support in Massive Open Online Courses (MOOCs)

CURRENT PHD STUDENTS

Miaomiao Wen

- Year Entered: 2011
- Area of Study: Computational Sociolinguistics
- Planning to graduate in August 2016

Hye-Ju Jang

- Year Entered PhD program (formerly MLT advised by Jack Mostow): 2012
- Area of Study: Discourse Analysis. Representation of Stylistic Choices.
- Planning to graduate in December 2016

Xu Wang

- Year Entered PhD program 2014
- Area of Study: Learning in MOOCs

Sreecharan Sankaranarayanan

- Year Entered PhD program 2015
- Area of Study: Learning in MOOCs

Qinlan Shen

- Year Entered PhD program 2015
- Presidential Fellowship/NSF Fellowship
- Area of Study: Social Media Analysis

Yohan Jo

- Year Entered: 2014
- Area of Study: Time series modeling of text and signal data

Keith Maki

- Year Entered: 2014
- Area of Study: Language change and discourse analysis

CURRENT MASTER OF LANGUAGE TECHNOLOGIES STUDENTS

Aaksha Mhegawat

- Year Entered: 2015
- Area of Study: Collaboration in GitHub

Michael Miller

- Year Entered: 2015
- Area of Study: Multilingual Discourse
- NSF Fellowship

Shrimai Prabhume

- Year Entered: 2015 (started working with me in Fall of 2016, co-advised with Alan Black)
- Area of Study: Deep Learning
- Bosch Fellowship???

M.S. OR PH.D. THESIS COMMITTEE SERVICE**Darren Gergle (PhD)**

- *The Value of Shared Visual Information for Task Oriented Collaboration*, defended Spring 2006

Rashmi Gangadharaiah (MLT)

- *Pattern Induction and Spectral Clustering for EBM*, defended Spring 2007

Ananlada Chotimongkul (PhD)

- *Learning the Structure of Task-Oriented Conversations from the Corpus of In-Domain Dialogs*, defended Spring 2008

Alicia Tribble (PhD)

- *Textual Inference for Retrieving Labeled Object Descriptions*, defended Spring 2010

Brian Langner (PhD)

- *Data-driven Natural Language Generation: Making Machines Talk Like Humans Using Natural Corpora*, defended January 2010

Satajeev Bannerjee (PhD)

- *Extracting and Using Implicit Supervision to Automatically Improve Meeting-Understanding*, defended September 2010.

Erin Walker (PhD)

- *Automated Adaptive Support for Peer Tutoring*, defended Summer 2010

Ian McCulloh (PhD)

- *Detecting Changes in a Dynamic Social Network*, defended Spring 2009

Sharad Oberoi (PhD)

- *DesignWebs to Support Engineering Design Student Projects*, defended December 2011

Jana Diesner (PhD)

- *Uncovering and Managing the Impact of Methodological Choices for the Computational Construction of Socio-Technical Networks from Texts*, defended Spring 2012

Shilpa Arora (PhD)

- *Opinion Mining and Interactive Annotation Learning*, defended August 2012

Namtarn Chaipah (PhD)

- *PURRS: A Personal Email Organization System using User Response Behaviors and Social Networks*, defended Fall 2011

Yajuan Wang (PhD)

- *Decision Guidance System for Personalized Mechanical Circulatory Assistance*, defended Dec 2011

Ruth Wilie (PhD)

- *ESL –Examining the Generality of Self-Explanation to Second Language Grammar Learning*, defended in August 2011

Xiaoqian Jiang (PhD)

- *Adaptive Learning in Temporal Structural Correlated Environments*, defended Fall 2010

Eric Daimler (PhD)

- *On the persistence of pragmatic relationships with quantitative data using Classification Trees and Regression Trees*, proposed Spring 2012, defended Spring 2013, completed Fall 2013

Natasha Loghmanpour (PhD)

- *Designing Clinical Decision Support Tools for End-Stage Heart Failure*
- Completed 2015

Robert Fisher (PhD)

- Context Awareness and Personalization in Dialogue Planning
- Defended in April 2016

Ben Towne (PhD)

- Design considerations for online deliberation systems
- Plans to defend in Fall 2016

OTHER

- **Heinz School LARK program, PhD students from Singapore Management University advised**

- Ying Ding (2014/2015)
- **Professional Master's Students Advised**
 - METALS Program: Yujun Song (2013/2014), Martina Pavelko (2013/2014), Danny Koh (Fall 2014), Chien-Yu Chang (2014/2015), David Hwang (2014/2015), Shaileja Relwani (2015/2016)
 - Master's of Intelligent Information Systems: Pulkit Bhuwalk (2013/2014), Jinsub Hong (2014/2015), Bowen Zhu (2014/2015), Zhengyang Ruan (2014/2015), Haitian Gong (2015-2016)
- **Undergraduate Research through SRC-URO Program**
 - Laura Brown, discourse analysis and dialogue agents, Spring 2012-present
 - Margaret Schervish worked on sociolinguistics through speech datamining, Spring 2011-Spring 2012
- **Undergraduate Research through DRU Program (Distributed Research for Undergrads, sponsored through Texas A&M)**
 - Kristine Johnson from Wesleyan University did an internship here related to analysis of code-switching in social media in Summer 2011 (co-advised with Lori Levin)
 - Laura Willson from Barnard College did an internship here related to analysis of code-switching in social media in Summer 2011 (co-advised with Lori Levin)
- **Undergraduate Theses/Senior Projects Supervised**
 - Benjamin Klixbull (Tepper) working on opinion mining from a marketing standpoint, co-advised with Kinshuk Jerath, August 2009 – May 2010
 - Cary Yang (HCII) (Co-advised with Kayvon Fatahalian), supporting threaded discussions in online learning
- **LTI Minor Project Advising**
 - Aditya Mukherji, working on an application related to reviewing local businesses, January 2011-May 2011
- **Post Docs Supervised**
 - Hua Ai, working on dialogue systems and CSCL, October 2009 – September 2010
 - Now a research scientist at Georgia Tech: <http://www.cc.gatech.edu/~hai7/>
 - Gregory Dyke, working on analysis of CSCL data, November 2010 – May 2012
 - Now a Post-doc at Institut Français de l'Education
 - Seza Drugoz, visiting post-doc at LTI from Tilburg University, Tilburg School of Humanities, Spring/Fall 2013, working on social interpretation of code switching
 - Einat Metzuyananim, visiting post-doc at LRDC (Fall 2013-Summer 2015) co-advised with Lauren Resnick from The Technion, Haifa, Israel, working on automated analysis of classroom discourse

- Oliver Ferschke, working on large scale deployment of language technologies in MOOCs, Fall 2014-Fall 2016
- **Students from Abroad Hosted and/or Advised Remotely**
 - Christof Wecker (PhD) from Frank Fischer's group at Ludwig-Maximilians Universiteat in Munich visited my group for 6 weeks in Spring 2007 to participate in my CSCL course and learn how to use TagHelper tools
 - Vikram Chatterji (undergraduate) did an internship with me in Summer 2009, working on infrastructure for LearnLab India, and worked with me in collaboration with Dr. Pradeep Yammiyavar from the Design department at IIT Guwahati on his B-tech project related to modeling search behavior and personalized support for information seeking. He will start as an MHCI student in Fall 2010.
 - Marietta Sionti (PhD), Linguistics PhD student from the University of Athens, visited me for 6 months to work on her dissertation starting in Summer 2009
 - Abhishek Anand (undergraduate) from the Computer Science and Engineering department of IIT Guwahati invited me to be a co-advisor of his B-tech project in collaboration with Hemangee Kapoor in the area of machine learning applied to operating systems optimization. This was after he participated in my on-line machine learning class in Spring of 2009.
 - Kiran GVR (undergraduate) and Ravi Shankar Reddy (undergraduate), both from IIIT-Hyderabad did an internship with me through the Internship Program in Technology Supported Education (IPTSE) in summer of 2010. They worked with MLT student Nitin Agarwal on the SciSumm multi-document summarization system for Scientific Articles. That work was accepted as a demo at ACL and workshop paper at an ACL workshop about summarization for different genres. Both papers were first authored by Nitin.
 - Pulkit Agarwal (undergraduate) and Mikesh Udani (undergraduate) from IIT Kanpur were interns co-advised by Bhiksha Raj and I through IPTSE in Summer of 2010, working on detection of transactivity in speech. They worked with PhD student Gahgene Gweon. That work was published in a full paper at CSCL 2011, with Gahegne as first author, and won a best student paper award.
 - Tushar Suresh (undergraduate) from NIT Surathkal was an intern, co-advised by me and Bob Kraut through IPTSE on analysis of social media in Summer 2011.
 - Amol Verma (undergraduate) from IIIT Delhi was an intern in my group working on SMS based collaboration in Summer 2012. Continued working with my group during the 2012/2013 school year for his B-Tech project.
 - Shaik Ismail (undergraduate) from NIT Rourkela was an intern in my group working on modeling dialect switching in Twitter in Summer 2012.

- Ying Ding (PhD), exchange program with Singapore Management University, co-advised locally at CMU in 2014/2015 with advisor from SMU.
- **Outside Reader**
 - Andrew Marriott, December 2006, Curtin University of Technology, Perth, Western Australia
 - Ilda Ladeira, December 2012, University of Cape Town, South Africa
 - Shafiq Rayhan Joty, May/June 2013, University of British Columbia, Canada
 - Jenny McDonald, September 2013, University of Otago, New Zealand
 - Oliver Ferschke, Spring 2014, Technische Universitaet Darmstat, Germany
 - Li Wang, Summer 2014, University of Melbourn, Australia
 - Bodong Chen, Summer 2014, University of Toronto, School of Education, Canada
- **Outside Committee Member**
 - David N. Prata from the Federal University of Alagoas in Maceio, Brazil visited for six months in Spring/Summer 2008 to work on his dissertation in my group under my supervision. I am serving as one of his committee members with Evandro Costa from the Federal University of Alagoas as his advisor.
 - Mihai Rotaru, Computer Science Department, University of Pittsburgh
 - Praveen Garimella, Center for Educational Technology and Learning Sciences, International Institute for Information Technologies in Hyderabad
 - Karthik Dinakar, Massachusetts Institute of Technology (Master's thesis related to analysis of social media/Cyber Bullying, now serving on his PhD dissertation committee)
- **Completed MLTs:**
 - Jaime Arguello (now an assistant professor at UNC), Rohit Kumar (Now a Researcher at BBN), Yi-Chia Wang (PhD student in LTI), Mahesh Joshi (PhD student at LTI), Sourish Chaudhuri (PhD student at LTI), Moonyoung Kang (PhD student at Northeastern, was a Research programmer at BBN), Naman Gupta (Engineer at Amazon), Dong Nguyen (PhD student at the University of Twente), Elijah Mayfield (PhD student at LTI), Nitin Agarwal (Research programmer at BBN), David Adamson (Research programmer at LTI), Philip Gianfortoni (Engineer at Google), Manaj Srivastava (Research programmer at BBN), Mahaveer Jain (Engineer at Facebook), Phani Gadde (IBM Watson), Zeyu Zheng (Google Pittsburgh), Ryan Carlson (Carnegie Learning), Abhimanyu Kumar (Research Scientist, Gageln, Inc.), Mario Piergallini (Research staff, Howard University), Diyi Yang (LTI PhD student), Gaurv Tomar (August 2016, LTI PhD student), Keith Maki (August 2016, LTI PhD student), Yohan Jo (August 2016, LTI PhD student), Leah Nicolich-Henkin (August 2016, Amazon)

- **Qualifying Exam Committee Member**
 - Sharad Oberoi, CEE, Carnegie Mellon University
 - Zan Wang, CEE, Carnegie Mellon University
- **Capstone Projects Supervised**
 - Zhiqi Li et al. (VLIS, Stock Prediction Project)
- **Independent Studies Supervised**
 - Gahgene Gweon (MHCI)
 - Satanjeev Banerjee (LTI PhD)
 - Chih-yu Chao (LTI Masters)
 - Adele Weitz (Heinz undergrad)
 - Stephanie Rosenthal (CSD undergrad)
 - Shilpa Arora (LTI Masters student)
 - José Gonzales (LTI Masters student)
 - Ranjitha Kulkarni (MSIT-VLIS student)

IX. UNIVERSITY SERVICE

UNIVERSITY SERVICE AND COMMITTEE WORK

- Strategic Planning Committee for Education and the Student Experience under Indira Nair for the 2008 CMU reaccreditation
- Organized the “Innovation with Impact” poster session as part of Graduate Student Appreciation Week with Indira Nair and others, Spring 2008. This was so successful that it has become a yearly event as part of graduate student appreciation week, although I am no longer organizing it.
- University Education Council for 2008-2014
 - Faculty Senate Representative for 2008-2009
 - Faculty Senate Representative for 2010-2011
- Faculty Senate Nominating Committee for 2009-2010
- Steering Committee for C@CM (Computing at Carnegie Mellon, a course that all of the Freshman take), Fall 2010-
 - Serving as content expert on a unit on Information Literacy that was included in the revamped C@CM course starting in Fall 2010
- University Libraries Advisory Committee for 2011-2012
- Serving on the Experience Design Network (Learning Media Research Group) 2013-
- University Committee on Special Appointments (Fall 2013- Summer 2015)
- Planning committee for the 2014 meeting of the Global Learning Council (Simon DataLab)
- Leader of the Technologies sub-committee of the Simon Initiative/TEL Writing/Comm Committee
- Serving as an Expedited reviewer on the Institutional Review Board (starting Summer 2016)

SCHOOL AND DEPARTMENT SERVICE AND COMMITTEE WORK

- LTI Governance Committee – 2015-Present
- Co-organizer of LTI Open House, Spring 2016
- Organized a workshop on The Future of MOCs for the HCII Anniversary Celebration, November 2014
- Organizing Committee Member, Home for Learning Sciences at CMU, Spring 2013 – Present
- LTI Education Committee Member (and Chair 2009-2014), Fall 2009 – Spring 2015
- HCII Hiring Committee (for joint HCII-ETC position), Fall 2012/Spring 2013
- LTI Distance Education Task Force Leader, Fall 2009 - 2010
- MHCI Admissions Committee, 2005, 2006
- LTI Admissions Committee, 2004, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, helped with LTI-HCII applications in 2016
- MIIS Admissions Committee 2014, 2016
- METALS Admissions committee 2015, 2016
- METALS Curriculum Committee 2015 - present

- HCII PhD Admissions Committee, 2007, 2009, 2012, 2013
- HCII Curriculum Committee Member Fall 2006- Spring 2009
- LTI Faculty Senator 2007-2009
- HCII Faculty Senator 2009-2011
- Organizer of LTI 2007 Faculty Retreat 2007
- Organizer for the LTI 2007 New Collaborations Competition
- Organizer of 2007 and 2008 LTI Student Research Symposium
 - Offering “behind the scenes” support for the 2009, 2010, 2011 and 2012, 2015 Student Research Symposiums

OTHER

- Spoke on Professional Development Panel in Jan 2016 for HCII Jr Faculty
- Served as a Mentor for the 2010 Get Your Act Together Workshop organized by Nancy Klancher
- Executive Committee member of the Pittsburgh Science of Learning Center and Co-Thrust Leader for its Social and Communicative Factors in Learning Thrust 2009-2015
- Pittsburgh Science of Learning Center Seminar Series Coordinator 2005-2007
- Facilitator for Collaborative Learning Reading and Discussion Group 2005-2006
- Facilitator for a Pragmatics reading group, Fall 2007
- Facilitator of the HCI in the Developing World reading group, Fall 2007, Spring 2008, Fall 2008
- Facilitator of the LearnLab India on-line reading group, Fall 2009 – Spring 2010